

\ NEXT-LOTE.

constants:

BANNER:

```

"*****",
" "

```

HOLD:

```

"           Please press c to continue".

```

%

types:

units:mlt

```

(IN110, IN111, IN210, IN211, IN212, IN213, IN310, IN311, IN312, IN313,
IN410, No Indonesian, IT110, IT111, IT210, IT211, IT212, IT213, IT310, IT311,
IT312, IT313, IT410, No Italian, GR110, GR111, GR210, GR211, GR212, GR213,
GR310, GR311, GR312, GR313, No Greek, No LOTE, No_LT).

```

%

attributes:

StudSName:str [default: " "].

StudFName:str [default: " "].

StudYear:int.

CurrTerm:int.

YearFlag:int.

NOTES1:str.

NOTES2:str.

NOTES3:str.

TIMING:str.

NoteIndonesian:truth [default: false].

NoteItalian:truth [default: false].

NoteGreek:truth [default: false].

DoneUnits:units.

LOTEjssc:int.

LOTEcmplt:int.

RECOMMEND:units.

Initial Interests:sgl

(Indonesian

{question:" Indonesian "},

Italian

{question:" Italian"},

Greek

{question:" Greek "})

{question: "Which of these Languages do you prefer ?"," " }

{explain: "Our recommendations take in account your preferences as well as your grades in the pre-requisite units."}.

INTERESTS:sgl

(Indonesian, Italian, Greek).

```

FEELINGS:sgl
(Really keen, Enjoy it, Its okay, Prefer not, Definitely not)
{question: "What are you feelings towards doing LOTE next term?"," "}
{explain: "We only recommend extension units to those students who wish to study
more LOTE!"}.

```

```

INFO:sgl
(Justify
Again
Continue
{question: "Explain the recommendation."},
{question: "Enter new information about your preferences."},
{question: "Continue with the next subject area."})
{question: "What would you like to do now?"," "}.

```

```

%
classes:

```

```

GRADES:
attributes:
RESULTS:sgl (A, B, C, D, E, W, N).
WeightedResults:sgl (Satisfactory, Unsatisfactory).
%
endclass.

```

```

%
rules:

```

```

Setup textoutput:
if true
then NOTES1 = " ".
      NOTES2 = " ".
      NOTES3 = " ".
      TIMING = " ".
endif.

```

```

\ *****
\ Student feelings towards and interests in non-compulsory units

```

```

Y10_No response:
if
YearFlag = 10
and LOTEjssc ge 3
and FEELINGS = Prefer not | Definitely not
then
RECOMMEND = No_LT <0.50>.
endif.

```

```

Y9_No response:
if
YearFlag = 9
and LOTEjssc ge 4
and FEELINGS = Prefer not | Definitely not
then
RECOMMEND = No_LT <0.50>.
endif.

```

Y8_No response:

```

if
    YearFlag = 8
    and LOTEjssc ge 4
    and FEELINGS = Prefer not | Definitely not
then
    RECOMMEND = No_LT <0.50>.
endif.

```

Indonesian_keen response:

```

if
    FEELINGS = Really keen
    and Initial Interests = Indonesian
then
    INTERESTS = Indonesian <1.00>.
endif.

```

Indonesian_enjoy response:

```

if
    FEELINGS = Enjoy it
    and Initial Interests = Indonesian
then
    INTERESTS = Indonesian <0.75>.
endif.

```

Indonesian_OK response:

```

if
    FEELINGS = Its okay
    and Initial Interests = Indonesian
then
    INTERESTS = Indonesian <0.30>.
endif.

```

Indonesian_Negative response:

```

if
    LOTEjssc lt 4
    and FEELINGS = Prefer not | Definitely not
    and Initial Interests = Indonesian
then
    INTERESTS = Indonesian <0.15>.
endif.

```

Italian_keen response:

```

if
    FEELINGS = Really keen
    and Initial Interests = Italian
then
    INTERESTS = Italian <1.00>.
endif.

```

Italian_Enjoy response:

```

if
    FEELINGS = Enjoy it
    and Initial Interests = Italian
then
    INTERESTS = Italian <0.75>.
endif.

```

Italian_OK response:

```

if
    FEELINGS = Its okay
    and Initial Interests = Italian
then
    INTERESTS = Italian <0.30>.
endif.

```

Italian_Negative response:

```

if
    LOTEjssc It 4
    and FEELINGS = Prefer not | Definitely not
    and Initial Interests = Italian
then
    INTERESTS = Italian <0.15>.
endif.

```

Greek_keen response:

```

if
    FEELINGS = Really keen
    and Initial Interests = Greek
then
    INTERESTS = Greek <1.00>.
endif.

```

Greek_Enjoy response:

```

if
    FEELINGS = Enjoy it
    and Initial Interests = Greek
then
    INTERESTS = Greek <0.75>.
endif.

```

Greek_OK response:

```

if
    FEELINGS = Its okay
    and Initial Interests = Greek
then
    INTERESTS = Greek <0.30>.
endif.

```

Greek_Negative response:

```

if
    LOTEjssc It 4
    and FEELINGS = Prefer not | Definitely not
    and Initial Interests = Greek
then
    INTERESTS = Greek <0.15>.
endif.

```

```
\ *****
```

```
\      INDONESIAN
```

```
N110 diagnosis:
```

```
  if
    INTERESTS = Indonesian
    and DoneUnits # IN110
  then
    RECOMMEND = IN110.
  endif.
```

```
N111 diagnosis:
```

```
  if
    INTERESTS = Indonesian
    and DoneUnits = IN110
    and DoneUnits # IN110
  then
    RECOMMEND = IN111.
  endif.
```

```
N210 diagnosis:
```

```
  if
    INTERESTS = Indonesian
    and DoneUnits = IN110 | IN111
    and DoneUnits # IN310 | IN311 | IN312 | IN313
    and DoneUnits # IN210
  then
    RECOMMEND = IN210.
  endif.
```

```
N211 diagnosis:
```

```
  if
    INTERESTS = Indonesian
    and DoneUnits = IN110 | IN111
    and DoneUnits # IN310 | IN311 | IN312 | IN313
    and DoneUnits # IN211
  then
    RECOMMEND = IN211.
  endif.
```

```
N212 diagnosis:
```

```
  if
    INTERESTS = Indonesian
    and DoneUnits = IN110 | IN111
    and DoneUnits # IN310 | IN311 | IN312 | IN313
    and DoneUnits # IN212
  then
    RECOMMEND = IN212.
  endif.
```

```
N213 diagnosis:
```

```
  if
    INTERESTS = Indonesian
    and DoneUnits = IN110 | IN111
    and DoneUnits # IN310 | IN311 | IN312 | IN313
    and DoneUnits # IN213
  then
    RECOMMEND = IN213.
  endif.
```

N310 diagnosis:

```
if
  INTERESTS = Indonesian
  and DoneUnits = IN210 | IN211 | IN212 | IN213
  and DoneUnits # IN310
then
  RECOMMEND = IN310.
endif.
```

N311 diagnosis:

```
if
  INTERESTS = Indonesian
  and DoneUnits = IN210 | IN211 | IN212 | IN213
  and DoneUnits # IN311
then
  RECOMMEND = IN311.
endif.
```

N312 diagnosis:

```
if
  INTERESTS = Indonesian
  and DoneUnits = IN210 | IN211 | IN212 | IN213
  and DoneUnits # IN312
then
  RECOMMEND = IN312.
endif.
```

N313 diagnosis:

```
if
  INTERESTS = Indonesian
  and DoneUnits = IN210 | IN211 | IN212 | IN213
  and DoneUnits # IN313
then
  RECOMMEND = IN313.
endif.
```

N410 diagnosis:

```
if
  INTERESTS = Indonesian
  and DoneUnits = IN312
  and DoneUnits # IN410
then
  RECOMMEND = IN410.
endif.
```

Nt diagnosis:

```
if
  INTERESTS = Indonesian
  and DoneUnits = IN410
then
  RECOMMEND = No_LT.
  NoteIndonesian = true.
endif.
```

\ *****

\ ITALIAN

T110 diagnosis:

```

if
INTERESTS = Italian
and DoneUnits # IT110
then
RECOMMEND = IT110.
endif.

```

T111 diagnosis:

```

if
INTERESTS = Italian
and DoneUnits = IT110
and DoneUnits # IT110
then
RECOMMEND = IT111.
endif.

```

T210 diagnosis:

```

if
INTERESTS = Italian
and DoneUnits = IT110
and DoneUnits # IT310 | IT311 | IT312 | IT313 | IT410
and DoneUnits # IT210
then
RECOMMEND = IT210.
endif.

```

T211 diagnosis:

```

if
INTERESTS = Italian
and DoneUnits = IT110
and DoneUnits # IT310 | IT311 | IT312 | IT313 | IT410
and DoneUnits # IT211
then
RECOMMEND = IT211.
endif.

```

T212 diagnosis:

```

if
INTERESTS = Italian
and DoneUnits = IT110
and DoneUnits # IT310 | IT311 | IT312 | IT313 | IT410
and DoneUnits # IT212
then
RECOMMEND = IT212.
endif.

```

T213 diagnosis:

```

if
INTERESTS = Italian
and DoneUnits = IT110
and DoneUnits # IT310 | IT311 | IT312 | IT313 | IT410
and DoneUnits # IT213
then
RECOMMEND = IT213.
endif.

```

T310 diagnosis:

```
if
  INTERESTS = Italian
  and DoneUnits = IT210 | IT211 | IT212 | IT213
  and DoneUnits # IT310
then
  RECOMMEND = IT310.
endif.
```

T311 diagnosis:

```
if
  INTERESTS = Italian
  and DoneUnits = IT210 | IT211 | IT212 | IT213
  and DoneUnits # IT311
then
  RECOMMEND = IT311.
endif.
```

T312 diagnosis:

```
if
  INTERESTS = Italian
  and DoneUnits = IT210 | IT211 | IT212 | IT213
  and DoneUnits # IT312
then
  RECOMMEND = IT312.
endif.
```

T313 diagnosis:

```
if
  INTERESTS = Italian
  and DoneUnits = IT210 | IT211 | IT212 | IT213
  and DoneUnits # IT313
then
  RECOMMEND = IT313.
endif.
```

T410 diagnosis:

```
if
  INTERESTS = Italian
  and DoneUnits = IT312
  and DoneUnits # IT410
then
  RECOMMEND = IT410.
endif.
```

Tt diagnosis:

```
if
  INTERESTS = Italian
  and DoneUnits = IT410
then
  RECOMMEND = No_LT.
  NoteItalian = true.
endif.
```


\ *****

\ GREEK

G110 diagnosis:

```

if
  INTERESTS = Greek
  and DoneUnits # GR110
then
  RECOMMEND = GR110.
endif.

```

G210 diagnosis:

```

if
  INTERESTS = Greek
  and DoneUnits = GR110
  and DoneUnits # GR310 | GR311 | GR312 | GR313
  and DoneUnits # GR210
then
  RECOMMEND = GR210.
endif.

```

G211 diagnosis:

```

if
  INTERESTS = Greek
  and DoneUnits = GR110
  and DoneUnits # GR310 | GR311 | GR312 | GR313
  and DoneUnits # GR211
then
  RECOMMEND = GR211.
endif.

```

G212 diagnosis:

```

if
  INTERESTS = Greek
  and DoneUnits = GR110
  and DoneUnits # GR310 | GR311 | GR312 | GR313
  and DoneUnits # GR212
then
  RECOMMEND = GR212.
endif.

```

G213 diagnosis:

```

if
  INTERESTS = Greek
  and DoneUnits = GR110
  and DoneUnits # GR310 | GR311 | GR312 | GR313
  and DoneUnits # GR213
then
  RECOMMEND = GR213.
endif.

```

G310 diagnosis:

```

if
  INTERESTS = Greek
  and DoneUnits = GR210 | GR211 | GR212 | GR213
  and DoneUnits # GR310
then
  RECOMMEND = GR310.
endif.

```

```

G311 diagnosis:
  if
    INTERESTS = Greek
    and DoneUnits = GR210 | GR211 | GR212 | GR213
    and DoneUnits # GR311
  then
    RECOMMEND = GR311.
  endif.
G312 diagnosis:
  if
    INTERESTS = Greek
    and DoneUnits = GR210 | GR211 | GR212 | GR213
    and DoneUnits # GR312
  then
    RECOMMEND = GR312.
  endif.
G313 diagnosis:
  if
    INTERESTS = Greek
    and DoneUnits = GR210 | GR211 | GR212 | GR213
    and DoneUnits # GR313
  then
    RECOMMEND = GR313.
  endif.
Gt diagnosis:
  if
    INTERESTS = Greek
    and DoneUnits = GR313
  then
    RECOMMEND = No_LT.
    NoteGreek = true.
  endif.

```

\ *****

\ Output messages

```

NIndonesian details:
  if
    NoteIndonesian = true
  then
    reassert NOTES1 = "*** You wanted to do more Indonesian".
    reassert NOTES2 = " but you have completed all available units".
    reassert NOTES3 = " Please use option 2 below for alternatives. ***".
  endif.
NItalian details:
  if
    NoteItalian = true
  then
    reassert NOTES1 = "*** You wanted to do more Italian".
    reassert NOTES2 = " but you have completed all available units".
    reassert NOTES3 = " Please use option 2 below for alternatives. ***".
  endif.

```

NGreek details:

```

if
  NoteGreek = true
then
  reassert NOTES1 = "*** You wanted to do more Greek".
  reassert NOTES2 = " but you have completed all available units.".
  reassert NOTES3 = " Please use option 2 below for alternatives. ***".
endif.

```

\ ****

Y8_Urgent timing:

```

if      YearFlag = 8
      and LOTEjssc lt 1
then    reassert TIMING = "Urgent and Compulsory".
endif.

```

Y8_Important timing:

```

if      YearFlag = 8
      and LOTEjssc ge 1
then    reassert TIMING = "Compulsory".
endif.

```

Y8_Compulsory timing:

```

if      YearFlag = 8
      and LOTEjssc ge 3
then    reassert TIMING = "Compulsory".
endif.

```

Y8_Extension diagnosis:

```

if      YearFlag = 8
      and LOTEjssc ge 4
then    reassert TIMING = "Extension".
endif.

```

Y9_Urgent timing:

```

if      YearFlag = 9
      and LOTEjssc lt 2
then    reassert TIMING = "Urgent and Compulsory".
endif.

```

Y9_Important timing:

```

if      YearFlag = 9
      and LOTEjssc = 2
then    reassert TIMING = "Important and Compulsory".
endif.

```

Y9_Compulsory diagnosis:

```

if      YearFlag = 9
      and LOTEjssc = 3
then    reassert TIMING = "Compulsory".
endif.

```

Y9_Extension diagnosis:

```

if      YearFlag = 9
      and LOTEjssc ge 4
then    reassert TIMING = "Extension".
endif.

```

```

Y10_Urgent diagnosis:
  if      YearFlag = 10
    and LOTEjssc lt 3
  then    reassert TIMING = "Urgent and Compulsory".
         endif.
Y10_Extension diagnosis:
  if      YearFlag = 10
    and LOTEjssc ge 3
  then    reassert TIMING = "Extension".
         endif.

Specialisation diagnosis:
  if      LOTEjssc ge 6
  then    reassert TIMING = "Specialisation".
         endif.

%
demons:

LOTEcompulsory Demon:
  when
    StudYear # 10
    and LOTEjssc lt 4
    and FEELINGS = Prefer not | Definitely not
  then
    reassert FEELINGS = Enjoy it.
  endwhen.

%
actions:

\ *****
\      LOTE is spread over three files
\      first task is to assert the grades even though they will not be used
\      but without which files cannot be read

assertclass GRADES = IN110, IN111, IN210, IN211, IN212, IN213, IN310, IN311,
IN312, IN313, IN410, No Indonesian, IT110, IT111, IT210, IT211, IT212, IT213,
IT310, IT311, IT312, IT313, IT410, No Italian, GR110, GR111, GR210, GR211,
GR212, GR213, GR310, GR311, GR312, GR313, No Greek, No LOTE.

\ *****
\ next task is to see if student has done any LOTE units
\ and ascertain which language to further examine

LOTEjssc = 0.
YearFlag = 8.

message BANNER.
message "      You have done the following LOTE units".

read "KES-STU-DATA-IN", DoneUnits, StudYear.
message DoneUnits.
if DoneUnits = IN110 then reassert LOTEjssc = LOTEjssc + 1.      endif.
if DoneUnits = IN111 then reassert LOTEjssc = LOTEjssc + 1.      endif.
if DoneUnits = IN210 then reassert LOTEjssc = LOTEjssc + 1.      endif.
if DoneUnits = IN211 then reassert LOTEjssc = LOTEjssc + 1.      endif.
if DoneUnits = IN212 then reassert LOTEjssc = LOTEjssc + 1.      endif.

```

```

if DoneUnits = IN213 then reassert LOTEjssc = LOTEjssc + 1.   endif.
if DoneUnits = IN310 then reassert LOTEjssc = LOTEjssc + 1.   endif.
if DoneUnits = IN311 then reassert LOTEjssc = LOTEjssc + 1.   endif.
if DoneUnits = IN312 then reassert LOTEjssc = LOTEjssc + 1.   endif.
if DoneUnits = IN313 then reassert LOTEjssc = LOTEjssc + 1.   endif.
if DoneUnits = IN410 then reassert LOTEjssc = LOTEjssc + 1.   endif.
if StudYear = 9 then reassert YearFlag = 9.   endif.
if StudYear = 10 then reassert YearFlag = 10.   endif.
erase StudYear.
erase DoneUnits.

```

```

read "KES-STU-DATA-IT", DoneUnits, StudYear.
message DoneUnits.
if DoneUnits = IT110 then reassert LOTEjssc = LOTEjssc + 1.   endif.
if DoneUnits = IT111 then reassert LOTEjssc = LOTEjssc + 1.   endif.
if DoneUnits = IT210 then reassert LOTEjssc = LOTEjssc + 1.   endif.
if DoneUnits = IT211 then reassert LOTEjssc = LOTEjssc + 1.   endif.
if DoneUnits = IT212 then reassert LOTEjssc = LOTEjssc + 1.   endif.
if DoneUnits = IT213 then reassert LOTEjssc = LOTEjssc + 1.   endif.
if DoneUnits = IT310 then reassert LOTEjssc = LOTEjssc + 1.   endif.
if DoneUnits = IT311 then reassert LOTEjssc = LOTEjssc + 1.   endif.
if DoneUnits = IT312 then reassert LOTEjssc = LOTEjssc + 1.   endif.
if DoneUnits = IT313 then reassert LOTEjssc = LOTEjssc + 1.   endif.
if DoneUnits = IT410 then reassert LOTEjssc = LOTEjssc + 1.   endif.
if StudYear = 9 then reassert YearFlag = 9.   endif.
if StudYear = 10 then reassert YearFlag = 10.   endif.
erase StudYear.
erase DoneUnits.

```

```

read "KES-STU-DATA-GR", DoneUnits, StudYear.
message DoneUnits.
if DoneUnits = GR110 then reassert LOTEjssc = LOTEjssc + 1.   endif.
if DoneUnits = GR111 then reassert LOTEjssc = LOTEjssc + 1.   endif.
if DoneUnits = GR210 then reassert LOTEjssc = LOTEjssc + 1.   endif.
if DoneUnits = GR211 then reassert LOTEjssc = LOTEjssc + 1.   endif.
if DoneUnits = GR212 then reassert LOTEjssc = LOTEjssc + 1.   endif.
if DoneUnits = GR213 then reassert LOTEjssc = LOTEjssc + 1.   endif.
if DoneUnits = GR310 then reassert LOTEjssc = LOTEjssc + 1.   endif.
if DoneUnits = GR311 then reassert LOTEjssc = LOTEjssc + 1.   endif.
if DoneUnits = GR312 then reassert LOTEjssc = LOTEjssc + 1.   endif.
if DoneUnits = GR313 then reassert LOTEjssc = LOTEjssc + 1.   endif.
if StudYear = 9 then reassert YearFlag = 9.   endif.
if StudYear = 10 then reassert YearFlag = 10.   endif.
erase StudYear.
erase DoneUnits.

```

```
eraseclass GRADES.
```

```
\ message combine ("YearFlag ", YearFlag).
```

```

if YearFlag = 10
then message " ", "***           You need to do at least THREE LOTE units ***".
endif.

```

```

if YearFlag lt 10
then message " ", "***           You need to do at least FOUR LOTE units ***".
endif.

```

askfor Initial Interests.

```
if Initial Interests = Indonesian
then read "KES-STU-DATA-IN", StudSName, StudFName, StudYear, CurrTerm,
GRADES, GRADES(RESULTS), DoneUnits.
endif.
```

```
if Initial Interests = Italian
then read "KES-STU-DATA-IT", StudSName, StudFName, StudYear, CurrTerm,
GRADES, GRADES(RESULTS), DoneUnits.
endif.
```

```
if Initial Interests = Greek
then read "KES-STU-DATA-GR", StudSName, StudFName, StudYear, CurrTerm,
GRADES, GRADES(RESULTS), DoneUnits.
endif.
```

```
\ *****
```

```
\ Interpretation of raw data from student CBASS records.
```

```
\ If a unit already done in this language
\ then it was already counted in the preliminary pass
\ If not done any units in this language then set counter back one
\ to offset the following forall process
```

```
forall G:GRADES do
  while G>RESULTS = N do
    erase G>RESULTS.
    message BANNER.
  message "Our recommendations take into account your previous units and grades".
  message "We already know your past results, but not this term's".
  message "Please enter the grade you reasonably expect for LOTE this term".
  askfor G>RESULTS.
  endwhile.
  \ if G>RESULTS = A
  \ then G>WeightedResults = Satisfactory <1.00>. endif.
  \ if G>RESULTS = B
  \ then G>WeightedResults = Satisfactory <0.85>. endif.
  \ if G>RESULTS = C
  \ then G>WeightedResults = Satisfactory <0.50>. endif.
  \ if G>RESULTS = D
  \ then G>WeightedResults = Satisfactory <0.25>. endif.
  \ if G>RESULTS = E
  \ then G>WeightedResults = Unsatisfactory <0.50>. endif.
  \ if G>RESULTS = W
  \ then G>WeightedResults = Satisfactory <0.10>. endif.
endforall.
```

```
\ *****
```

```

\      Counting units satisfactorily completed
\
\      LOTEcmplt = 0.
\
\      forall G:GRADES do
\          if G>WeightedResults = Satisfactory | Unsatisfactory
\          then  reassert LOTEcmplt = LOTEcmplt + 1.
\                reassert LOTEjssc = LOTEjssc + 1.
\                endif.
\          endforall.
\
\ *****

obtain RECOMMEND.

\ *****

\      Screen output.

message BANNER.
message combine (" Language recommendation summary - ", StudFName).
message "Units thus far ", DoneUnits, " ".

\message combine ("YearFlag ", YearFlag, " LOTEjssc ", LOTEjssc).

if NOTES1 # " "
then  message NOTES1.
      message NOTES2.
      message NOTES3, " ". endif.

message combine ("We recommend that you apply for ", RECOMMEND).
message " ".
message combine ("This recommendation is for ", TIMING," unit/s.").

\ *****

\      File output.

write "RcmdLOTE", TIMING, RECOMMEND.

\ *****

\      Termination

if INFO = Justify      then justify RECOMMEND.
                        message HOLD.
                        stop.
                        endif.
if INFO = Again       then nextcase.
                        endif.
if INFO = Continue    then stop.
                        endif.

%
```

\ NEXT-MATHS.

constants:

BANNER:

```

"*****",
" "

```

HOLD:

```

"           Please press c to continue".

```

%

types:

units:mlt

```

(MA11T, MA12T, MA13T, MA23D, MA33D, MA43D, MA53D, MA63D, MA24D,
MA34D, MA44D, MA54D, MA64D, MA1EL, MA1BL, MA2SL, MA2TL, MA3ML,
MA3HL, MA4UL, MA5CL, MAO1E, MAO2E, RR11M, RR12M, RR13M, RR14M,
RR21M, RR22M, RR31M, RR32M, No Mathematics, No_MA, MA000, MA101,
MA131, MA132, MA133, MA134, MA201, MA211, MA213, MA214, MA221,
MA222, MA223, MA224, MA232, MA234, MA313, MA321, MA322, MA323,
MA324, MA331, MA334, MA413, MA414, MA415, MA423, MA426).

```

%

attributes:

StudSName:str [default: " "].

StudFName:str [default: " "].

StudYear:int.

CurrTerm:int.

NOTES1:str.

NOTES2:str.

NOTES3:str.

NOTES4:str.

NOTES5:str.

NOTES6:str.

TIMING:str.

STAGE:sgl

(Stage one, Stage two, Stage three, Stage four, Stage five, Stage six)

[default: Stage one].

DoneUnits:units.

MATHSjssc:int [default:0].

MATHScmplt:int [default: 0].

MathsStageTwoCmplt:int.

MathsStageThreeCmplt:int.

MathsStageFourCmplt:int.

LevelOneCompleted: truth [default: false].

LevelTwoCompleted: truth [default: false].

LevelThreeCompleted: truth [default: false].

RECOMMEND:units.

Initial Interests:sgl
 (Space
 {question:" Space and Measurement" },
 Algebra
 {question:" Algebra and Number"},
 Essential
 {question:" Essential for daily use" })
 {question: "Which of these Mathematics units would you prefer next term?"," " }
 {explain: "Our recommendations take in account your preferences as well as your
 grades in the pre-requisite units." }.

INTERESTS:sgl
 (Space, Algebra, Essential).

FEELINGS:sgl
 (Really keen, Enjoy it, Its okay, Prefer not, Definitely not)
 {question: "What are you feelings towards doing Mathematics next term?"," " }
 {explain: "We only recommend extension units to those students who wish to study
 more Mathematics!" }.

INTENDED LEVEL:sgl
 (L1
 {question:" Level 1 which concentrates on theoretical maths",
 " and leads to Maths A in year 11." },
 L2
 {question:" Level 2 which combines theoretical and daily use maths",
 " and leads to Foundation Maths in Year 11." },
 L3
 {question:" Level 3 which concentrates on maths for daily use",
 " and leads on to Access Maths after Year Ten." })
 {question:" Which level do you wish to complete by the end of Year 10?" }
 {explain:" Level 3 must do four Stage 3 units",
 " Level 2 must do some Stage 5 units",
 " Level 1 must do both Stage 6 units." }.

INFO:sgl
 (Justify
 {question: "Explain the recommendation." },
 Again
 {question: "Enter new information about your preferences." },
 Continue
 {question: "Continue with the next subject area." })
 {question: "What would you like to do now?"," " }.

%
 classes:

GRADES:
 attributes:
 RESULTS:sgl (A, B, C, D, E, W, N).
 WeightedResults:sgl (Satisfactory, Unsatisfactory).
 %
 endclass.

%

rules:

Setup textoutput:

```

if true
then  NOTES1 = " ".
      NOTES2 = " ".
      NOTES3 = " ".
      NOTES4 = " ".
      NOTES5 = " ".
      NOTES6 = " ".
      TIMING = "Compulsory".
endif.

```

\ *****

\ Ascertain student interests in mathematics

Space_keen response:

```

if
    FEELINGS = Really keen
    and Initial Interests = Space
then
    INTERESTS = Space <1.00>.
endif.

```

Space_enjoy response:

```

if
    FEELINGS = Enjoy it
    and Initial Interests = Space
then
    INTERESTS = Space <0.75>.
endif.

```

Space_OK response:

```

if
    FEELINGS = Its okay
    and Initial Interests = Space
then
    INTERESTS = Space <0.30>.
endif.

```

Space_No response:

```

if
    FEELINGS = Prefer not | Definitely not
    and Initial Interests = Space
then
    INTERESTS = Space <0.15>.
endif.

```

Algebra_keen response:

```

if
    FEELINGS = Really keen
    and Initial Interests = Algebra
then
    INTERESTS = Algebra <1.00>.
endif.

```

Algebra_Enjoy response:

```

if
    FEELINGS = Enjoy it
    and Initial Interests = Algebra
then
    INTERESTS = Algebra <0.75>.
endif.

```

Algebra_OK response:

```

if
    FEELINGS = Its okay
    and Initial Interests = Algebra
then
    INTERESTS = Algebra <0.30>.
endif.

```

Algebra_No response:

```

if
    FEELINGS = Prefer not | Definitely not
    and Initial Interests = Algebra
then
    INTERESTS = Algebra <0.15>.
endif.

```

Essential_keen response:

```

if
    FEELINGS = Really keen
    and Initial Interests = Essential
then
    INTERESTS = Essential <1.00>.
endif.

```

Essential_Enjoy response:

```

if
    FEELINGS = Enjoy it
    and Initial Interests = Essential
then
    INTERESTS = Essential <0.75>.
endif.

```

Essential_OK response:

```

if
    FEELINGS = Its okay
    and Initial Interests = Essential
then
    INTERESTS = Essential <0.30>.
endif.

```

Essential_No response:

```

if
    FEELINGS = Prefer not | Definitely not
    and Initial Interests = Essential
then
    INTERESTS = Essential <0.15>.
endif.

```

\ *****

\ Transition and Stage 1 units

R12M diagnosis:

```
\ If a student is in Maths RR11M
\ and has not completed RR12M
\ then we recommend RR12M for next term's mathematics.
  if
    DoneUnits = RR11M
    and DoneUnits # RR12M
  then
    RECOMMEND = RR12M.
  endif.
```

R13M diagnosis:

```
\ If a student is in Maths RR12M
\ and has not completed RR13M
\ then we recommend RR13M for next term's mathematics.
  if
    DoneUnits = RR12M
    and DoneUnits # RR13M
  then
    RECOMMEND = RR13M.
  endif.
```

R14M diagnosis:

```
\ If a student is in Maths RR13M
\ and has not completed RR14M
\ then we recommend RR14M for next term's mathematics.
  if
    DoneUnits = RR13M
    and DoneUnits # RR14M
  then
    RECOMMEND = RR14M.
  endif.
```

M12default:

```
\ If a student has not completed any mathematics
\ then we recommend MA12T for next term's mathematics.
  if
    DoneUnits = No Mathematics
  then
    RECOMMEND = MA12T.
  endif.
```

M12T diagnosis:

```
\ If a student has completed MA11T
\ but has not done MA12T
\ then we recommend MA12T for next term's mathematics.
  if
    DoneUnits = MA11T
    and DoneUnits # MA12T
  then
    RECOMMEND = MA12T.
  endif.
```

R21M_M12T diagnosis:

```
\ If a student has completed RR14M
\ but has not done RR21M or MA12T
\ then we recommend RR21M and MA12T for next term's mathematics.
  if
    DoneUnits = RR14M
    and DoneUnits # RR21M | MA12T
  then
    RECOMMEND = RR21M & MA12T.
  endif.
```

M12_R21M diagnosis:

```
\ If a student has failed MA12T
\ and has not completed RR13M
\ then we recommend RR21M for next term's mathematics.
  if
    GRADES:MA12T>RESULTS = E
    and DoneUnits # RR21M
  then
    RECOMMEND = RR21M.
  endif.
```

R22M diagnosis:

```
\ If a student is in Maths RR21M
\ and has not completed RR22M
\ then we recommend RR22M for next term's mathematics.
  if
    DoneUnits = RR21M
    and DoneUnits # RR22M
  then
    RECOMMEND = RR22M.
  endif.
```

M1EL diagnosis:

```
\ If a student has completed either MA12T or RR22M
\ but has not done MA1EL
\ then we recommend MA1EL for next term.
  if
    DoneUnits = MA12T | RR22M
    and DoneUnits # MA1EL
    and STAGE = Stage one
  then
    RECOMMEND = MA1EL.
  endif.
```

M1BL diagnosis:

```
\ If a student has completed either MA12T or RR22M
\ but has not done MA1BL
\ then we recommend MA1BL for next term.
  if
    DoneUnits = MA12T | RR22M
    and DoneUnits # MA1BL
    and STAGE = Stage one
  then
    RECOMMEND = MA1BL.
  endif.
```

M13_EL_BL diagnosis:

```
\ If a student has not done very well in MA13T
\ and has not done MA1EL or MA1BL
\ then we recommend these units before Stage Two.
  if
    GRADES:MA13T>RESULTS = D
    and DoneUnits # MA1EL | MA1BL
  then
    RECOMMEND = MA1EL | MA1BL.
  endif.
```

M13T diagnosis:

```
\ If a student has completed either MA12T or RR22M
\ but has not done MA13T
\ then we recommend MA13T for next term.
  if
    DoneUnits = MA12T | RR22M
    and DoneUnits # MA13T
  then
    RECOMMEND = MA13T.
  endif.
```

\ *****

\ Stage two

M2SL diagnosis:

```
\ If a student has completed Stage one and is now at Stage two
\ and has a preference for essential (Daily Use) mathematics
\ and has not completed MA2SL
\ then this unit is recommended.
  if
    STAGE = Stage two
    and INTERESTS = Essential
    and DoneUnits # MA2SL
  then
    RECOMMEND = MA2SL.
  endif.
```

M2TL diagnosis:

```
\ If a student has completed Stage one and is now at Stage two
\ and has a preference for essential (Daily Use) mathematics
\ and has not completed MA2TL
\ then this unit is recommended.
  if
    STAGE = Stage two
    and INTERESTS = Essential
    and DoneUnits # MA2TL
  then
    RECOMMEND = MA2TL.
  endif.
```

M23D diagnosis:

```
\ If a student is now at Stage two
\ and has a preference for space and measurement mathematics
\ and has not completed MA23D
\ then this unit is recommended.
  if
    STAGE = Stage two
    and INTERESTS = Space
    and DoneUnits # MA23D
  then
    RECOMMEND = MA23D.
  endif.
```

M23a diagnosis:

```
\ When a student has failed MA23D
\ and is still at Stage two
\ and wants to undertake more space and measurement mathematics
\ then we recommend the student repeat MA23D.
  if
    GRADES:MA23D>RESULTS = E
    and STAGE = Stage two
    and INTERESTS = Space
  then
    reassert NOTES1 = "*** Please note".
    reassert NOTES2 = "*** as your marks in MA23D were so low".
    reassert NOTES3 = "*** we suggest you repeat this unit.".
    RECOMMEND = MA23D.
  endif.
```

M24D diagnosis:

```
\ If a student is now at Stage two
\ and has a preference for algebra and number mathematics
\ and has not completed MA24D
\ then this unit is recommended.
  if
    STAGE = Stage two
    and INTERESTS = Algebra
    and DoneUnits # MA24D
  then
    RECOMMEND = MA24D.
  endif.
```

M24a diagnosis:

```
\ When a student has failed MA24D
\ and is still at Stage two
\ and wants to undertake more algebra and number mathematics
\ then we recommend the student repeat MA24D.
  if
    GRADES:MA24D>RESULTS = E
    and STAGE = Stage two
    and INTERESTS = Algebra
  then
    reassert NOTES1 = "*** Please note".
    reassert NOTES2 = "*** as your marks in MA24D were so low".
    reassert NOTES3 = "*** we suggest you repeat this unit.".
    RECOMMEND = MA24D.
  endif.
```

\ *****

\ Enrichment units

MO1E diagnosis:

\ Students who achieve an A or B in MA23D and MA24D
 \ and who have not done this extension unit
 \ and recommended to MAO1E.

```

if
  GRADES:MA23D>RESULTS = A | B
  and GRADES:MA24D>RESULTS = A | B
  and DoneUnits # MAO1E
then
  RECOMMEND = MAO1E.
endif.

```

MO2E diagnosis:

\ Students who have completed the extension unit MAO1E
 \ and have not done the second extension unit
 \ are recommended to MAO2E.

```

if
  DoneUnits = MAO1E
  and DoneUnits # MAO2E
then
  RECOMMEND = MAO2E.
endif.

```

\ *****

\ Stage three

M3ML diagnosis:

\ If a student has done well in two Stage Two units
 \ or has attempted both MA2SL and MA2TL
 \ and the student has selected Essential maths
 \ or has selected Level Three
 \ and has not attempted MA3ML then this unit is recommended.

```

if
  MathsStageTwoCmplt ge 2
  or DoneUnits = MA2SL & MA2TL
  and INTERESTS = Essential
  or INTENDED LEVEL = L3
  and DoneUnits # MA3ML
then
  RECOMMEND = MA3ML.
endif.

```


M3HL diagnosis:

```

\ If a student has done well in two Stage Two units
\ or has attempted both MA2SL and MA2TL
\ and the student has selected Essential maths
\ or has selected Level Three
\ and has not attempted MA3HL then this unit is recommended.
  if
    MathsStageTwoCmplt ge 2
    or DoneUnits = MA2SL & MA2TL
    and DoneUnits # MA3HL
    and INTERESTS = Essential
    or INTENDED LEVEL = L3
  then
    RECOMMEND = MA3HL.
  endif.

```

M33D diagnosis:

```

\ If a student has good results in MA23D
\ or has completed sufficient Stage Two units to try Stage Three
\ and has selected Space and Measurement
\ or has selected Level One
\ and has not attempted MA33D then this unit is recommended.
  if
    GRADES:MA23D>WeightedResults = Satisfactory
    or STAGE = Stage three
    and INTERESTS = Space
  \ or INTENDED LEVEL = L1
    and DoneUnits # MA33D
  then
    RECOMMEND = MA33D.
  endif.

```

Aa33D diagnosis:

```

\ When a student has not satisfactorily completed MA23D
\ and has not completed sufficient Stage Two units to try Stage Three
\ but has selected Space and Measurement
\ then one recommendation is that the student repeat MA23D.
  if
    GRADES:MA23D>RESULTS = D | E | W
    and STAGE # Stage three
    and INTERESTS = Space
    and DoneUnits # MA33D
  then
    reassert NOTES1 = "*** Please select Algebra or Essential".
    reassert NOTES2 = "*** as your marks in MA23D were not good enough".
    reassert NOTES3 = "*** for entry to MA33D next term.".
  endif.

```

M34D diagnosis:

\ If a student has good results in MA24D
 \ or has completed sufficient Stage Two units to try Stage Three
 \ and has selected Algebra and Number
 \ or has selected Level One
 \ and has not attempted MA34D then this unit is recommended.

```

  if
    GRADES:MA24D>WeightedResults = Satisfactory
    or STAGE = Stage three
    and DoneUnits # MA34D
    and INTERESTS = Algebra
  \ or INTENDED LEVEL = L1
  then
    RECOMMEND = MA34D.
  endif.

```

Aa34D diagnosis:

\ When a student has not satisfactorily completed MA23D
 \ and has not completed sufficient Stage Two units to try Stage Three
 \ but has selected Algebra and Number
 \ then one recommendation is that the student repeat MA34D.

```

  if
    GRADES:MA24D>RESULTS = D | E | W
    and STAGE # Stage three
    and DoneUnits # MA34D
    and INTERESTS = Algebra
  then
    reassert NOTES1 = "*** Please select Space or Essential".
    reassert NOTES2 = "*** as your marks in MA24D were not good enough".
    reassert NOTES3 = "*** for entry to MA34D next term.".
  endif.

```

\ *****

\ Stage four

M4UL diagnosis:

\ If a student has done well in two Stage Three units
 \ and the student has selected Essential maths
 \ or has not selected Level One
 \ and has not attempted MA4UL then this unit is recommended.

```

  if
    MathsStageThreeCmplt ge 2
    and DoneUnits # MA4UL
    and INTERESTS = Essential
    or INTENDED LEVEL # L1
  then
    RECOMMEND = MA4UL.
  endif.

```

M43D diagnosis:

```

\ If a student has good results in MA33D and MA24D
\ and has selected Space and Measurement
\ and has not attempted MA43D then this unit is recommended.
  if
    GRADES:MA33D>WeightedResults = Satisfactory
    and GRADES:MA24D>WeightedResults = Satisfactory
    and INTERESTS = Space
    and DoneUnits # MA43D
  then
    RECOMMEND = MA43D.
  endif.

```

M43a diagnosis:

```

\ When a student has good results in MA33D
\ and has selected further studies in Space and Measurement
\ but has yet to complete MA24D
\ then the student is reminded of the other entry requirement.
  if
    GRADES:MA33D>WeightedResults = Satisfactory
    and INTERESTS = Space
    and DoneUnits # MA24D
  then
    reassert NOTES1 = "*** Please note that M43D has two entry requirements".
    reassert NOTES2 = "*** You have completed the 'Space' units".
    reassert NOTES3 = "*** but not the 'Algebra & Number' units.".
    RECOMMEND = MA24D.
  endif.

```

M44D diagnosis:

```

\ If a student has good results in MA34D and MA23D
\ and has selected Algebra and Number
\ and has not attempted MA44D then this unit is recommended.
  if
    GRADES:MA34D>WeightedResults = Satisfactory
    and GRADES:MA23D>WeightedResults = Satisfactory
    and INTERESTS = Algebra
    and DoneUnits # MA44D
  then
    RECOMMEND = MA44D.
  endif.

```

M44a diagnosis:

```

\ When a student has good results in MA34D
\ and has selected further studies in Algebra and Number
\ but has yet to complete MA23D
\ then the student is reminded of the other entry requirement.
  if
    GRADES:MA34D>WeightedResults = Satisfactory
    and DoneUnits # MA23D
    and INTERESTS = Algebra
  then
    reassert NOTES1 = "*** Please note that M44D has two entry requirements".
    reassert NOTES2 = "*** You have completed the 'Algebra & Number' units".
    reassert NOTES3 = "*** but not the 'Space' units.".
    RECOMMEND = MA23D.
  endif.

```

```

\ *****

```

\ Stage five

M5CL diagnosis:

```
\ If a student has done well in two Stage Four units
\ and the student has selected Essential maths
\ or has selected Level Three
\ and has not attempted MA5CL then this unit is recommended.
  if
    MathsStageFourCmplt ge 2
    and INTERESTS = Essential
    and DoneUnits # MA5CL
  then
    RECOMMEND = MA5CL.
  endif.
```

M5CLa diagnosis:

```
\ If a student has completed MA4UL
\ and has selected Essential Mathematics
\ and has not already done MA5CL
\ but has not completed another Stage Four unit
\ then a reminded is given of this prerequisite.
  if
    DoneUnits = MA4UL
    and INTERESTS = Essential
    and DoneUnits # MA5CL
    and DoneUnits # MA43D | MA44D
  then
    reassert NOTES1 = "*** Please note.".
    reassert NOTES2 = "*** You need to complete TWO Stage 4 units".
    reassert NOTES3 = "*** before you can apply for Consumer Maths.".
    reassert NOTES4 = "*** You have only completed ONE Stage 4 unit.".
    reassert NOTES5 = "*** Please use option 2 below to select again.".
    reassert NOTES6 = "*** from 'Space-Measurement' or 'Algebra-Number'.".
  endif.
```

M53D diagnosis:

```
\ If a student has good results in MA43D and MA34D
\ and has selected Space and Measurement
\ and has not attempted MA53D then this unit is recommended.
  if
    GRADES:MA43D>WeightedResults = Satisfactory
    and GRADES:MA34D>WeightedResults = Satisfactory
    and DoneUnits # MA53D
    and INTERESTS = Space
  \      or DoneUnits = MA64D
  \      and INTERESTS = Algebra
  then
    RECOMMEND = MA53D.
  endif.
```

M53a diagnosis:

```
\ When a student has good results in MA43D
\ and has selected further studies in Space and Measurement
\ but has yet to complete MA34D
\ then the student is reminded of the other entry requirement.
  if
    GRADES:MA43D>WeightedResults = Satisfactory
    and DoneUnits # MA34D
    and INTERESTS = Space
  then
    reassert NOTES1 = "*** Please note that M53D has two entry requirments".
    reassert NOTES2 = "*** You have completed the 'Space' units".
    reassert NOTES3 = "*** but not the 'Algebra & Number' units.".
    RECOMMEND = MA34D.
  endif.
```

M54D diagnosis:

```
\ If a student has good results in MA44D and MA33D
\ and has selected Algebra and Number
\ and has not attempted MA54D then this unit is recommended.
  if
    GRADES:MA44D>WeightedResults = Satisfactory
    and GRADES:MA33D>WeightedResults = Satisfactory
    and DoneUnits # MA54D
    and INTERESTS = Algebra
  then
    RECOMMEND = MA54D.
  endif.
```

M54a diagnosis:

```
\ When a student has good results in MA44D
\ and has selected further studies in Algebra and Number
\ but has yet to complete MA33D
\ then the student is reminded of the other entry requirement.
  if
    GRADES:MA44D>WeightedResults = Satisfactory
    and DoneUnits # MA33D
    and INTERESTS = Algebra
  then
    reassert NOTES1 = "*** Please note that M54D has two entry requirments".
    reassert NOTES2 = "*** You have completed the 'Algebra & Number' units".
    reassert NOTES3 = "*** but not the 'Space' units.".
    RECOMMEND = MA33D.
  endif.
```

\ *****

\ Stage six

M63D diagnosis:

```
\ If a student has good results in MA53D and MA44D
\ and has selected Space and Measurement
\ and has not attempted MA53D then this unit is recommended.
  if
    GRADES:MA53D>WeightedResults = Satisfactory
    and GRADES:MA44D>WeightedResults = Satisfactory
    and DoneUnits # MA63D
    and INTERESTS = Space
  then
    RECOMMEND = MA63D.
  endif.
```

M63a diagnosis:

```
\ When a student has good results in MA53D
\ and has selected further studies in Space and Measurement
\ but has yet to complete MA44D
\ then the student is reminded of the other entry requirement.
  if
    GRADES:MA53D>WeightedResults = Satisfactory
    and DoneUnits # MA44D
    and INTERESTS = Space
  then
    reassert NOTES1 = "*** Please note that M63D has two entry requirements".
    reassert NOTES2 = "*** You have completed the 'Space' units".
    reassert NOTES3 = "*** but not the 'Algebra & Number' units.".
    RECOMMEND = MA44D.
  endif.
```

M64D diagnosis:

```
\ If a student has good results in MA54D and MA43D
\ and has selected Algebra and Number
\ and has not attempted MA64D then this unit is recommended.
  if
    GRADES:MA54D>WeightedResults = Satisfactory
    and GRADES:MA43D>WeightedResults = Satisfactory
    and DoneUnits # MA64D
    and INTERESTS = Algebra
  then
    RECOMMEND = MA64D.
  endif.
```

M64a diagnosis:

```
\ When a student has good results in MA54D
\ and has selected further studies in Algebra and Number
\ but has yet to complete MA43D
\ then the student is reminded of the other entry requirement.
  if
    GRADES:MA54D>WeightedResults = Satisfactory
    and DoneUnits # MA43D
    and INTERESTS = Algebra
  then
    reassert NOTES1 = "*** Please note that M64D has two entry requirements".
    reassert NOTES2 = "*** You have completed the 'Algebra & Number' units".
    reassert NOTES3 = "*** but not the 'Space' units.".
    RECOMMEND = MA43D.
  endif.
```

```

\ *****
\ Preferred genre completed

Tessential diagnosis:
  if
  DoneUnits = MA5CL
  and Initial Interests = Essential
  then
  reassert NOTES4 = "*** You have completed all the 'Daily Use' Maths".
  reassert NOTES5 = " but may continue other topics".
  reassert NOTES6 = " Please use option 2 below for alternatives. ***".
  endif.

Tspace diagnosis:
  if
  DoneUnits = MA63D
  and Initial Interests = Space
  then
  reassert NOTES4 = "*** You have finished 'Space & Measurement' units".
  reassert NOTES5 = " but may continue other topics".
  reassert NOTES6 = " Please use option 2 below for alternatives. ***".
  endif.

Talgebra diagnosis:
  if
  DoneUnits = MA64D
  and Initial Interests = Algebra
  then
  reassert NOTES4 = "* You have finished all 'Algebra & Number' units".
  reassert NOTES5 = " but may continue other topics".
  reassert NOTES6 = " Please use option 2 below for alternatives. ***".
  endif.

\ *****
\ Level termination

Tlevel_three diagnosis:
  if
  DoneUnits = MA3ML & MA3HL & MA33D & MA34D
  then
  LevelThreeCompleted = true.
  reassert NOTES1 = "*** You have completed the Level Three Maths".
  reassert NOTES2 = " but you may continue with further Maths".
  reassert TIMING = "Extension".
  endif.

Tlevel_two diagnosis:
  if
  DoneUnits = MA5CL | MA53D | MA54D
  then
  LevelTwoCompleted = true.
  reassert NOTES1 = "*** You have completed the Level Two requirements".
  reassert NOTES2 = " but may continue with further Maths".
  reassert TIMING = "Extension".
  endif.

```

```
Tlevel_one diagnosis:
  if
    DoneUnits = MA63D & MA64D
  then
    LevelTwoCompleted = true.
    RECOMMEND = No_MA.
    reassert NOTES1 = "** You have completed all Level One requirements".
    reassert NOTES2 = " ".
    reassert TIMING = "Extension".
  endif.
```

```
\ *****
\ timing
```

```
Important diagnosis:
  if MATHScmpl le 9
  then reassert TIMING = "Important and Compulsory".
  endif.
```

```
Urgent diagnosis:
  if MATHScmpl le 6
  then reassert TIMING = "Urgent and Compulsory".
  endif.
```

```
ExtensionL3 diagnosis:
  if LevelThreeCompleted
    and INTENDED LEVEL = L3
  then reassert TIMING = "Extension".
  endif.
```

```
ExtensionL2 diagnosis:
  if LevelTwoCompleted
    and INTENDED LEVEL = L2
  then reassert TIMING = "Extension".
  endif.
```

```
ExtensionL1 diagnosis:
  if LevelOneCompleted
    and INTENDED LEVEL = L1
  then reassert TIMING = "Extension".
  endif.
```

```
%
demon:
```

```
\ *****
```

```
\ Determine stage
```

```
S2 Demon:
  when DoneUnits = MA13T | RR32M
  then erase STAGE.
    STAGE = Stage two.
  endwhen.
```



```

S3a Demon:
  when GRADES:MA23D>RESULTS = A | B | C
    and GRADES:MA24D>RESULTS = A | B | C
  then erase STAGE.
    STAGE = Stage three.
  endwhen.

S3b Demon:
  when DoneUnits = MA23D & MA24D & MA2SL | MA2TL
  then erase STAGE.
    STAGE = Stage three.
  endwhen.

S4 Demon:
  when MathsStageThreeCmplt ge 2
  then erase STAGE.
    STAGE = Stage four.
  endwhen.

```

```

\ *****
\ exit for students who have completed minimum and want out

```

```

Mathematics_PreferNot Demon:
  when
    LevelOneCompleted
    or LevelTwoCompleted
    or LevelThreeCompleted
    and FEELINGS = Prefer not
  then
    RECOMMEND = No_MA <0.50>.
  endwhen.

```

```

Mathematics_DefinitelyNot Demon:
  when
    LevelOneCompleted
    or LevelTwoCompleted
    or LevelThreeCompleted
    and FEELINGS = Definitely not
  then
    RECOMMEND = No_MA <1.00>.
  endwhen.

```

```

\ *****

```

```

%
actions:

```

```

read "KES-STU-DATA-MA", StudSName, StudFName, StudYear, CurrTerm,
GRADES, GRADES(RERESULTS), DoneUnits.

```

```

\   RUS cannot accommodate the major changes to unit codes
\   which 1993 year ten students carried over from year eight

    if    StudYear = 10
    then  message "** RUS is unable to recommend Mathematics units".
          message " for current year ten students".
          message " please continue with next subject.".
          RECOMMEND = MA000.
          TIMING = "Compulsory".
          write "RcmdMA", TIMING, RECOMMEND.
          stop.
          endif.

\ *****

\   Interpretation of raw data from student CBASS records.

forall G:GRADES do
  while G>RESULTS = N do
    erase G>RESULTS.
    message BANNER.
  message "Our recommendations take into account your previous units and grades".
  message "We already know your past results, but not this term's".
  message "Please enter the grade you reasonably expect for MATHS this term".
  askfor G>RESULTS.
  endwhile.
  if    G>RESULTS = A
  then  G>WeightedResults = Satisfactory <1.00>.
        endif.
  if    G>RESULTS = B
  then  G>WeightedResults = Satisfactory <0.85>.
        endif.
  if    G>RESULTS = C
  then  G>WeightedResults = Satisfactory <0.50>.
        endif.
  if    G>RESULTS = D
  then  G>WeightedResults = Unsatisfactory <0.25>.
        endif.
  if    G>RESULTS = E
  then  G>WeightedResults = Unsatisfactory <1.00>.
        endif.
  if    G>RESULTS = W
  then  G>WeightedResults = Satisfactory <0.05>.
        endif.
endforall.

\ Count units satisfactorily completed at Stages two three and four

MATHScmplt = 0.
MathsStageTwoCmplt = 0.
MathsStageThreeCmplt = 0.
MathsStageFourCmplt = 0.

```

```

forall G:GRADES do
  if G> WeightedResults = Satisfactory
  then reassert MATHScmpl = MATHScmpl + 1.
  endif.
endforall.

```

```

if DoneUnits = No Mathematics
then reassert MATHScmpl = MATHScmpl - 1.
endif.

```

```

if GRADES:MA23D> RESULTS = A | B | C | D
then reassert MathsStageTwoCmpl = MathsStageTwoCmpl + 1.
endif.

```

```

if GRADES:MA24D> RESULTS = A | B | C | D
then reassert MathsStageTwoCmpl = MathsStageTwoCmpl + 1.
endif.

```

```

if GRADES:MA2SL> RESULTS = A | B | C | D
then reassert MathsStageTwoCmpl = MathsStageTwoCmpl + 1.
endif.

```

```

if GRADES:MA2TL> RESULTS = A | B | C | D
then reassert MathsStageTwoCmpl = MathsStageTwoCmpl + 1.
endif.

```

```

if GRADES:MA33D> RESULTS = A | B | C
then reassert MathsStageThreeCmpl = MathsStageThreeCmpl + 1.
endif.

```

```

if GRADES:MA34D> RESULTS = A | B | C
then reassert MathsStageThreeCmpl = MathsStageThreeCmpl + 1.
endif.

```

```

if GRADES:MA3ML> RESULTS = A | B | C | D
then reassert MathsStageThreeCmpl = MathsStageThreeCmpl + 1.
endif.

```

```

if GRADES:MA3HL> RESULTS = A | B | C | D
then reassert MathsStageThreeCmpl = MathsStageThreeCmpl + 1.
endif.

```

```

if GRADES:MA43D> RESULTS = A | B | C
then reassert MathsStageFourCmpl = MathsStageFourCmpl + 1.
endif.

```

```

if GRADES:MA44D> RESULTS = A | B | C
then reassert MathsStageFourCmpl = MathsStageFourCmpl + 1.
endif.

```

```

if GRADES:MA4UL> RESULTS = A | B | C | D
then reassert MathsStageFourCmpl = MathsStageFourCmpl + 1.
endif.

```

```

\ *****

```

```

obtain RECOMMEND.

```

```

\ *****

```

\ Screen output.

```
message BANNER.
message combine (" Mathematics recommendation summary - ", StudFName).
message "Units thus far ", DoneUnits, " ".
```

```
if NOTES1 # " "
then message NOTES1.
      message NOTES2.
      message NOTES3, " ". endif.
if NOTES4 # " "
then message NOTES4.
      message NOTES5.
      message NOTES6, " ". endif.
```

```
\message combine ("MathsCmplt ",MATHScmplt).
\message combine ("MathsStageTwoCmplt ",MathsStageTwoCmplt).
\message combine ("MathsStageThreeCmplt ",MathsStageThreeCmplt).
\message combine ("MathsStageFourCmplt ",MathsStageFourCmplt).
\message combine ("STAGE ",STAGE).
\message combine ("INTERESTS ",INTERESTS).
```

```
message combine ("We recommend that you apply for ", RECOMMEND).
message " ".
message combine ("This recommendation is for ", TIMING, " unit/s.").
```

\ *****

\ File output.

```
write "RcmdMA", TIMING, RECOMMEND.
```

\ *****

\ Termination

```
if INFO = Justify      then justify RECOMMEND.
                        message HOLD.
                        stop.
                        endif.
if INFO = Again        then nextcase.
                        endif.
if INFO = Continue     then stop.
                        endif.
```

%

\ NEXT-MUSIC.

constants:

BANNER:

```

*****
" "

```

HOLD:

```

"           Please press c to continue".

```

%

types:

units:mlt

```

(MS110, MS120, MS210, MS220, MS230, MS240, MS250, MS310, MS311,
MS320, MS321, MS330, MS410, MSIL, MS1L, No Music, No_MS, MSCM,
MS245, DR110, DR120, DR130, DR140, DR210, DR220, DR230, DR240, DR310,
DR320, DR330, DR331, DR340, No Drama).

```

%

attributes:

StudSName:str [default: " "].

StudFName:str [default: " "].

StudYear:int.

CurrTerm:int.

NOTES1:str.

NOTES2:str.

NOTES3:str.

TIMING:str.

DoneUnits:units.

MUSICjssc:int.

MUSICcmplt:int.

RECOMMEND:units.

Initial Interests:sgl

(Theory

```

    {question:" Emphasis on the Theory of music"},

```

Practical

```

    {question:" Mainly Practical work for small groups"},

```

Large

```

    {question:" Playing in the Band or Orchestra"})

```

```

{question: "Which of these Music units would you prefer next term?"," " }

```

```

{explain: "Our recommendations take in account your preferences as well as your
grades in the pre-requisite units."}.

```

INTERESTS:sgl

(Theory, Practical, Large).

```

MusicFEELINGS:sgl
(Really keen, Enjoy it, Its okay, Prefer not, Definitely not)
{question: "What are you feelings towards doing Music next term?"," "}
{explain: "We only recommend extension units to those students who wish to study
more Music!"}.

```

```

INFO:sgl
(Justify
Again
Continue
{question: "Explain the recommendation."},
{question: "Enter new information about your preferences."},
{question: "Continue with the next subject area."})
{question: "What would you like to do now?"," "}.

```

```

%
classes:

```

```

GRADES:
attributes:
RESULTS:sgl (A, B, C, D, E, W, N).
WeightedResults:sgl (Satisfactory, Unsatisfactory)[default: Satisfactory <0.00>].
%
endclass.

```

```

%
rules:

```

```

Setup textoutput:
if true
then  NOTES1 = " ".
      NOTES2 = " ".
      NOTES3 = " ".
      TIMING = " ".
endif.

```

```

\ *****

```

```

\ Ascertain student interests in music

```

```

Music_PreferNot response:
\ If a student prefers not to do music
\ and has already completed the compulsory unit
\ then we do not recommend further music.
if  MUSICjssc ge 3
and MusicFEELINGS = Prefer not
then RECOMMEND = No_MS <0.50>.
endif.

```

Music_DefinitelyNot response:

```
\ If a student definitely does not to do music
\ and has already completed the compulsory unit
\ then we do not recommend further music.
  if    MUSICjssc ge 3
      and MusicFEELINGS = Definitely not
  then  RECOMMEND = No_MS <1.00>.
  endif.
```

Theory_keen response:

```
  if
    MusicFEELINGS = Really keen
    and Initial Interests = Theory
  then
    INTERESTS = Theory <1.00>.
  endif.
```

Theory_enjoy response:

```
  if
    MusicFEELINGS = Enjoy it
    and Initial Interests = Theory
  then
    INTERESTS = Theory <0.75>.
  endif.
```

Theory_OK response:

```
  if
    MusicFEELINGS = Its okay
    and Initial Interests = Theory
  then
    INTERESTS = Theory <0.30>.
  endif.
```

Theory_no response:

```
  if
    MusicFEELINGS = Prefer not | Definitely not
    and Initial Interests = Theory
  then
    INTERESTS = Theory <0.15>.
  endif.
```

Practical_keen response:

```
  if
    MusicFEELINGS = Really keen
    and Initial Interests = Practical
  then
    INTERESTS = Practical <1.00>.
  endif.
```

Practical_Enjoy response:

```
  if
    MusicFEELINGS = Enjoy it
    and Initial Interests = Practical
  then
    INTERESTS = Practical <0.75>.
  endif.
```

Practical_OK response:

```

if
  MusicFEELINGS = Its okay
  and Initial Interests = Practical
then
  INTERESTS = Practical <0.30>.
endif.

```

Practical_no response:

```

if
  MusicFEELINGS = Prefer not | Definitely not
  and Initial Interests = Practical
then
  INTERESTS = Practical <0.15>.
endif.

```

Large_keen response:

```

if
  MusicFEELINGS = Really keen
  and Initial Interests = Large
then
  INTERESTS = Large <1.00>.
endif.

```

Large_Enjoy response:

```

if
  MusicFEELINGS = Enjoy it
  and Initial Interests = Large
then
  INTERESTS = Large <0.75>.
endif.

```

Large_OK response:

```

if
  MusicFEELINGS = Its okay
  and Initial Interests = Large
then
  INTERESTS = Large <0.30>.
endif.

```

Large_no response:

```

if
  MusicFEELINGS = Prefer not | Definitely not
  and Initial Interests = Large
then
  INTERESTS = Large <0.15>.
endif.

```

\ *****

\ Stage One

M110 diagnosis:

\ If a student has not completed MS110

\ then we recommend this compulsory unit.

```

if
  DoneUnits # MS110
then
  RECOMMEND = MS110.
endif.

```


M120 diagnosis:

```
\ If a student has completed the compulsory unit MS110
\ and is interested in further studies in theory or practical music
\ then we recommend the other Stage One music unit MS120.
  if
    DoneUnits = MS110
    and INTERESTS = Theory | Practical
    and DoneUnits # MS120
  then
    RECOMMEND = MS120.
  endif.
```

\ *****

\ Stage Two

M240 diagnosis:

```
\ If a student has completed the compulsory unit MS110
\ and is interested in practical music with large ensembles
\ then we recommend the Stage two unit MS240
  if
    DoneUnits = MS110
    and INTERESTS = Large
    and DoneUnits # MS240
  then
    RECOMMEND = MS240.
  endif.
```

M210 diagnosis:

```
\ If a student has completed the second Stage One unit MS120
\ and is interested in the theory of music
\ then we recommend the Advanced Theory unit MS210
  if
    DoneUnits = MS120
    and INTERESTS = Theory
    and DoneUnits # MS210
  then
    RECOMMEND = MS210.
  endif.
```

M220 diagnosis:

```
\ If a student has completed the second Stage One unit MS120
\ and is interested in practical music
\ then we recommend the Small Ensemble unit MS220
  if
    DoneUnits = MS120
    and INTERESTS = Practical
    and DoneUnits # MS220
  then
    RECOMMEND = MS220.
  endif.
```

M230 diagnosis:

```
\ If a student has completed the second Stage One unit MS120
\ and is interested in the theory of or practical music
\ then we recommend Songwriting and Composing MS230
  if
    DoneUnits = MS120
    and INTERESTS = Theory | Practical
    and DoneUnits # MS230
  then
    RECOMMEND = MS230.
  endif.
```

M250 diagnosis:

```
\ If a student has completed the second Stage One unit MS120
\ and is interested in the theory of or practical music
\ then we recommend Music with Computers MS250
  if
    DoneUnits = MS120
    and INTERESTS = Theory | Practical
    and DoneUnits # MS250
  then
    RECOMMEND = MS250.
  endif.
```

\ *****

\ Stage Three

```
\ If a student has completed the Stage Two unit MS210
\ and is interested in further theory of music
\ then we recommend the Composition and Arranging unit MS310
M310 diagnosis:
```

```
  if
    DoneUnits = MS210
    and INTERESTS = Theory
    and DoneUnits # MS310
  then
    RECOMMEND = MS310.
  endif.
```

M311 diagnosis:

```
\ If a student has completed the Stage Three unit MS310
\ and is interested in further theory of music
\ then we recommend the unit MS311
  if
    DoneUnits = MS310
    and INTERESTS = Theory
    and DoneUnits # MS311
  then
    RECOMMEND = MS311.
  endif.
```

M320 diagnosis:

```
\ If a student has completed the Stage Two unit MS220
\ and is interested in further practical music
\ then we recommend the Jazz Studies unit MS320
  if
    DoneUnits = MS220
    and INTERESTS = Practical
    and DoneUnits # MS320
  then
    RECOMMEND = MS320.
  endif.
```

M321 diagnosis:

```
\ If a student has completed the Stage Three unit MS320
\ and is interested in further practical music
\ then we recommend the unit MS321
  if
    DoneUnits = MS320
    and INTERESTS = Practical
    and DoneUnits # MS321
  then
    RECOMMEND = MS321.
  endif.
```

M330 diagnosis:

```
\ If a student has completed the Stage Two unit MS230
\ or either of the Stage Three units MS320 or MS321
\ and is interested in further practical or theoretical music
\ then we recommend the Jazz Studies unit MS330
  if
    DoneUnits = MS230 | MS320 | MS321
    and INTERESTS = Practical | Theory
    and DoneUnits # MS330
  then
    RECOMMEND = MS330.
  endif.
```

```
\ *****
\ Stage Four
```

M410 diagnosis:

```
\ If a student has completed the Stage Three unit MS311
\ then we recommend the Music of Other Lands unit MS410
  if
    DoneUnits = MS311
    and DoneUnits # MS410
  then
    RECOMMEND = MS410.
  endif.
```

```
\ *****
```

\ genre termination

All_Theory:

```

if
  DoneUnits = MS410
  and INTERESTS = Theory
then
  RECOMMEND = No_MS.
  reassert NOTES1 = "** You wanted to do more music theory".
  reassert NOTES2 = " but you have completed all available units".
  reassert NOTES3 = " Please use option 2 below for alternatives. **".
endif.

```

All_Practical:

```

if
  DoneUnits = MS250 & MS321 & MS330
  and INTERESTS = Practical
then
  RECOMMEND = No_MS.
  reassert NOTES1 = "** You wanted to do more Practical music".
  reassert NOTES2 = " but you have completed all available units".
  reassert NOTES3 = " Please use option 2 below for alternatives. **".
endif.

```

All_Large:

```

if
  DoneUnits = MS240
  and INTERESTS = Large
then
  RECOMMEND = No_MS.
  reassert NOTES1 = "** You wanted to do more Large group work".
  reassert NOTES2 = " but you have completed the only unit".
  reassert NOTES3 = " Please use option 2 below for alternatives. **".
endif.

```

\ *****

\ recommendation timing

Compulsory_8 diagnosis:

```

if
  MUSICjssc lt 3
  and MUSICcmplt lt 2
then
  reassert TIMING = "Compulsory".
endif.

```

Compulsory_9 diagnosis:

```

if
  MUSICjssc lt 3
  and MUSICcmplt lt 1
  and StudYear = 9
then
  reassert TIMING = "Important and Compulsory".
endif.

```

Compulsory_10 diagnosis:

```

if
  MUSICjssc lt 3
  and MUSICcmplt lt 1
  and StudYear = 10
then
  reassert TIMING = "Urgent and Compulsory".
endif.

```

Extension diagnosis:

```
if MUSICjssc ge 3
then reassert TIMING = "Extension".
endif.
```

Specialisation diagnosis:

```
if MUSICcmplt ge 4
then reassert TIMING = "Specialisation".
endif.
```

\ *****

%

actions:

```
\ students have to complete three Performing Arts for their jssc
\ at least one from each of Music and Drama
\ so read the Drama file for jssc count
```

```
assertclass GRADES = DR110, DR120, DR130, DR140, DR210, DR220, DR230,
DR240, DR310, DR320, DR330, DR331, DR340, No Drama.
```

```
read "KES-STU-DATA-DR", DoneUnits.
```

```
MUSICjssc = 0.
```

```
if DoneUnits = DR110
then reassert MUSICjssc = MUSICjssc + 1.
endif.
```

```
if DoneUnits = DR120
then reassert MUSICjssc = MUSICjssc + 1.
endif.
```

```
if DoneUnits = DR130
then reassert MUSICjssc = MUSICjssc + 1.
endif.
```

```
if DoneUnits = DR140
then reassert MUSICjssc = MUSICjssc + 1.
endif.
```

```
if DoneUnits = DR210 | DR220 | DR230 | DR240
then reassert MUSICjssc = MUSICjssc + 1.
endif.
```

```
if DoneUnits = DR310 | DR320 | DR330 | DR340
then reassert MUSICjssc = MUSICjssc + 1.
endif.
```

```
if MUSICjssc gt 2
then reassert MUSICjssc = 2.
endif.
```

```
erase DoneUnits.
```

```
eraseclass GRADES.
```

```
read "KES-STU-DATA-MS", StudSName, StudFName, StudYear, CurrTerm,
GRADES, GRADES(RESULTS), DoneUnits.
```

```

\ *****
\      Interpretation of raw data from student CBASS records.

      if      DoneUnits = MS110
      then    reassert MUSICjssc = MUSICjssc + 1.
             endif.
      if      DoneUnits = MS120 | MS240
      then    reassert MUSICjssc = MUSICjssc + 1.
             endif.
      if      DoneUnits = MSIL
      then    reassert MUSICjssc = MUSICjssc + 1.
             endif.

MUSICcmplt = 0.
      if DoneUnits = No Music
      then reassert MUSICcmplt = MUSICcmplt - 1.
             endif.

forall G:GRADES do
      reassert MUSICcmplt = MUSICcmplt + 1.
      while G>RESULTS = N do
            erase G>RESULTS.
            message BANNER.
      message "Our recommendations take into account your previous units and grades".
      message "We already know your past results, but not this term's".
      message "Please enter the grade you reasonably expect for MUSIC this term".
            askfor G>RESULTS.
      endwhile.
endforall.

\ *****

obtain RECOMMEND.

\ *****

\      Screen output.

message BANNER.
message combine ("  Music recommendation summary - ", StudFName).
message "Units thus far ", DoneUnits, ".

message combine ("MUSICjssc ", MUSICjssc, " MUSICcmplt ", MUSICcmplt).

```

```

if NOTES1 # " "
then  message NOTES1.
      message NOTES2.
      message NOTES3, " ". endif.

```

```

message combine ("We recommend that you apply for ", RECOMMEND).
\message " ".
message combine ("This recommendation is for ", TIMING, " unit/s.").

```

```

\ *****

```

```

\      File output.

```

```

write "RcmdMS", TIMING, RECOMMEND.

```

```

\ *****

```

```

\      Termination

```

```

if INFO = Justify      then justify RECOMMEND.
                        message HOLD.
                        stop.
                        endif.
if INFO = Again        then nextcase.
if INFO = Continue     then stop.
                        endif.
                        endif.

```

```

%

```

\ NEXT-PE&HEALTH.

constants:

BANNER:

```

"*****",
" "

```

HOLD:

```

"           Please press c to continue".

```

%

types:

units:mlt

```

(PE110, PE125, PE140, PE210, PE211, PE220, PE221, PE230, PE240, PE260,
PE270, PE280, PE290, PE310, PE320, PE340, PE370, PE390, PE410, PE420,
PE440, PE470, GIRLS, PETM, TEAMSP, RECSP, No PhysEd, No Multilevel PE,
No_PE, PE241).

```

%

attributes:

StudSName:str [default: " "].

StudFName:str [default: " "].

StudYear:int.

CurrTerm:int.

NOTES1:str.

NOTES2:str.

NOTES3:str.

TIMING:str.

PEcore:str.

Hcore:str.

NoteRecreation:truth.

NoteTeam:truth.

NoteFitness:truth.

NoteGirls:truth.

NoteHealth:truth.

DoneUnits:units.

MultiUnits:units.

RECOMMEND:units.

PEjssc:int [default:0].

PEcmplt:int [default: 0].

Initial Interests:sgl

(Recreation

```

    {question:" Recreation activities"}

```

```

    {explain: "These units are ."},

```

Team

```

    {question:" Team sports"}

```

```

    {explain: "These units are ."},

```

Fitness

```

    {question:" Fitness activities"}

```

```

    {explain: "These units are ."},

```



```

Girls
Health {question:" Girls and physical activity"},
        {question:" Health and First Aid" })
{question: "Which of these PhysEd groups would you prefer next term?"," "}
{explain: "Our recommendations take in account your preferences as well as your
grades in the pre-requisite units."}.

INTERESTS:sgl
(Recreation, Team, Fitness, Girls, Health).

FEELINGS:sgl
(Really keen, Enjoy it, Its okay, Prefer not, Definitely not)
{question: "What are you feelings towards doing PhysEd next term?"," "}
{explain: "We only recommend PhysEd extension units to those students who wish to
study more PhysEd!"}.

STAGE:mlt
(Stage one, Stage two, Stage three, Stage four) [default: Stage one].

INFO:sgl
(Justify
    {question: "Have the recommendation explained."},
Again
    {question: "Enter new information about your preferences."},
Continue
    {question: "Continue with the next subject area."})
{question: "What would you like to do now?"," "}.

%
classes:

GRADES:
attributes:
RESULTS:sgl (A, B, C, D, E, W, N).
WeightedResults:sgl (Satisfactory, Unsatisfactory).
%
endclass.

%
rules:

Setup output:
    if true
    then  NOTES1 = " ".
        NOTES2 = " ".
        NOTES3 = " ".
        TIMING = " ".
        PEcore = "incomplete".
        Hcore = "incomplete".
    endif.

```

```

jssc_pe flag:
  if DoneUnits = PE110 & PE125
  then reassert PEcore = "completed".
  endif.

```

```

jssc_health flag:
  if DoneUnits = PE140
  then reassert Hcore = "completed".
  endif.

```

```

\ *****

```

```

\Stage1 diagnosis:
\  if
\  DoneUnits # PE110 & PE125 & PE140
\  then
\  STAGE = Stage one<1.00>.
\  endif.

```

```

\ *****

```

```

\ Stage One Compulsory units

```

```

P1triple diagnosis:

```

```

\ If a student has not done any of the Stage One compulsory units
\ then recommend these units.

```

```

  if
  DoneUnits # PE110 | PE125 | PE140
  then
  RECOMMEND = PE110 & PE125 & PE140.
  endif.

```

```

P11double diagnosis:

```

```

\ If a student has done one of the Stage One compulsory units
\ but neither of the other two
\ then recommend these units.

```

```

  if
  \ STAGE = Stage one
  DoneUnits = PE110
  and DoneUnits # PE125 | PE140
  then
  RECOMMEND = PE125<1.00> & PE140<1.00>.
  endif.

```

```

P12double diagnosis:

```

```

\ If a student has done one of the Stage One compulsory units
\ but neither of the other two
\ then recommend these units.

```

```

  if
  \ STAGE = Stage one
  DoneUnits = PE125
  and DoneUnits # PE110 | PE140
  then
  RECOMMEND = PE110<1.00> & PE140<1.00>.
  endif.

```

P14double diagnosis:

\ If a student has done one of the Stage One compulsory units
 \ but neither of the other two
 \ then recommend these units.

```

    if
  \   STAGE = Stage one
      DoneUnits = PE140
      and DoneUnits # PE110 | PE125
      then
        RECOMMEND = PE110<1.00> & PE125<1.00>.
      endif.
  
```

P11single diagnosis:

\ If a student has done two of the Stage One compulsory units
 \ but not the other Stage One unit
 \ then recommend this unit.

```

    if
  \   STAGE = Stage one
      DoneUnits = PE125 & PE140
      and DoneUnits # PE110
      then
        RECOMMEND = PE110<1.00>.
      endif.
  
```

P12single diagnosis:

\ If a student has done two of the Stage One compulsory units
 \ but not the other Stage One unit
 \ then recommend this unit.

```

    if
  \   STAGE = Stage one
      DoneUnits = PE110 & PE140
      and DoneUnits # PE125
      then
        RECOMMEND = PE125<1.00>.
      endif.
  
```

P14single diagnosis:

\ If a student has done two of the Stage One compulsory units
 \ but not the other Stage One unit
 \ then recommend this unit.

```

    if
  \   STAGE = Stage one
      DoneUnits = PE110 & PE125
      and DoneUnits # PE140
      then
        RECOMMEND = PE140<1.00>.
      endif.
  
```

\ *****

PhysEd_PreferNot response:

```

if
  PEjssc = 3
  and FEELINGS = Prefer not
  then
    RECOMMEND = No_PE <0.50>.
  endif.

```

PhysEd_DefinitelyNot response:

```

if
  PEjssc = 3
  and FEELINGS = Definitely not
  then
    RECOMMEND = No_PE <1.00>.
  endif.

```

Recreation_keen response:

```

if
  STAGE = Stage two
  and FEELINGS = Really keen
  and Initial Interests = Recreation
  then
    INTERESTS = Recreation <1.00>.
  endif.

```

Recreation_Enjoy response:

```

if
  STAGE = Stage two
  and FEELINGS = Enjoy it
  and Initial Interests = Recreation
  then
    INTERESTS = Recreation <0.75>.
  endif.

```

Recreation_OK response:

```

if
  STAGE = Stage two
  and FEELINGS = Its okay
  and Initial Interests = Recreation
  then
    INTERESTS = Recreation <0.30>.
  endif.

```

Team_keen response:

```

if
  STAGE = Stage two
  and FEELINGS = Really keen
  and Initial Interests = Team
  then
    INTERESTS = Team <1.00>.
  endif.

```

Team_Enjoy response:

```

if
  STAGE = Stage two
  and FEELINGS = Enjoy it
  and Initial Interests = Team
then
  INTERESTS = Team <0.75>.
endif.

```

Team_OK response:

```

if
  STAGE = Stage two
  and FEELINGS = Its okay
  and Initial Interests = Team
then
  INTERESTS = Team <0.30>.
endif.

```

Fitness_keen response:

```

if
  STAGE = Stage two
  and FEELINGS = Really keen
  and Initial Interests = Fitness
then
  INTERESTS = Fitness <1.00>.
endif.

```

Fitness_Enjoy response:

```

if
  STAGE = Stage two
  and FEELINGS = Enjoy it
  and Initial Interests = Fitness
then
  INTERESTS = Fitness <0.75>.
endif.

```

Fitness_OK response:

```

if
  STAGE = Stage two
  and FEELINGS = Its okay
  and Initial Interests = Fitness
then
  INTERESTS = Fitness <0.30>.
endif.

```

Girls_keen response:

```

if
  STAGE = Stage two
  and FEELINGS = Really keen
  and Initial Interests = Girls
then
  INTERESTS = Girls <1.00>.
endif.

```

Girls_Enjoy response:

```

if
  STAGE = Stage two
  and FEELINGS = Enjoy it
  and Initial Interests = Girls
then
  INTERESTS = Girls <0.75>.
endif.

```

Girls_OK response:

```

if
  STAGE = Stage two
  and FEELINGS = Its okay
  and Initial Interests = Girls
then
  INTERESTS = Girls <0.30>.
endif.

```

Health_keen response:

```

if
  STAGE = Stage two
  and FEELINGS = Really keen
  and Initial Interests = Health
then
  INTERESTS = Health <1.00>.
endif.

```

Health_Enjoy response:

```

if
  STAGE = Stage two
  and FEELINGS = Enjoy it
  and Initial Interests = Health
then
  INTERESTS = Health <0.75>.
endif.

```

Health_OK response:

```

if
  STAGE = Stage two
  and FEELINGS = Its okay
  and Initial Interests = Health
then
  INTERESTS = Health <0.30>.
endif.

```

\ *****

\ Stage Two PE options

P21 diagnosis:

\ If a student has completed the PE core requirements

\ and is interested in Recreational activities

\ and has not done this unit

\ then recommend it.

```

if

```

```

  STAGE = Stage two

```

```

\   and PCore = "completed"

```

```

\   and Hcore = "completed"

```

```

  and INTERESTS = Recreation

```

```

  and DoneUnits # PE210

```

```

then

```

```

  RECOMMEND = PE210.

```

```

endif.

```

P22 diagnosis:

```

\ If a student has completed the PE core requirements
\ and is interested in Team sports
\ and has not done this unit
\ then recommend it.
  if
    STAGE = Stage two
  \   and Pcore = "completed"
  \   and Hcore = "completed"
    and INTERESTS = Team
    and DoneUnits # PE220
  then
    RECOMMEND = PE220.
  endif.

```

P23 diagnosis:

```

\ If a student has completed the PE core requirements
\ and is interested in Team sports
\ and has not done this unit
\ then recommend it.
  if
    STAGE = Stage two
  \   and Pcore = "completed"
  \   and Hcore = "completed"
    and INTERESTS = Team
    and DoneUnits # PE230
  then
    RECOMMEND = PE230.
  endif.

```

P24 diagnosis:

```

\ If a student has completed the PE core requirements
\ and is interested in Fitness activities
\ and has not done this unit
\ then recommend it.
  if
    STAGE = Stage two
  \   and Pcore = "completed"
  \   and Hcore = "completed"
    and INTERESTS = Fitness
    and DoneUnits # PE240
  then
    RECOMMEND = PE240.
  endif.

```

P26 diagnosis:

```

\ If a student has completed the PE core requirements
\ and is interested in Recreational or Fitness activities or Girls sport
\ and has not done this unit
\ then recommend it.
  if
    STAGE = Stage two
  \   and Pcore = "completed"
  \   and Hcore = "completed"
    and INTERESTS = Recreation | Fitness | Girls
    and DoneUnits # PE260
  then
    RECOMMEND = PE260.
  endif.

```

P27 diagnosis:

```
\ If a student has completed the PE core requirements
\ and is interested in Girls sport
\ and has not done this unit
\ then recommend it.
  if
    STAGE = Stage two
    and INTERESTS = Girls
    and DoneUnits # PE270
  then
    RECOMMEND = PE270.
  endif.
```

\ *****

\ Stage Three PE options

P31 diagnosis:

```
\ If a student has satisfactory results in the Stage Two prerequisite
\ and is interested in further Recreation activities
\ and has not done this unit, then recommend it.
  if
    PEjssc = 3
    and INTERESTS = Recreation
    and DoneUnits # PE310
    and GRADES:PE210>WeightedResults = Satisfactory
    or MultiUnits = RECSP
  then
    RECOMMEND = PE310.
  endif.
```

P32 diagnosis:

```
\ If a student has satisfactory results in the Stage Two prerequisite
\ and is interested in further Team sports
\ and has not done this unit, then recommend it.
  if
    PEjssc = 3
    and INTERESTS = Team
    and DoneUnits # PE320
    and GRADES:PE220>WeightedResults = Satisfactory
    or GRADES:PE221>WeightedResults = Satisfactory
    or MultiUnits = TEAMSP
  then
    RECOMMEND = PE320.
  endif.
```

P34 diagnosis:

```
\ If a student has satisfactory results in the Stage Two prerequisite
\ and is interested in further Fitness activities
\ and has not done this unit, then recommend it.
  if
    PEjssc = 3
    and INTERESTS = Fitness
    and GRADES:PE240>WeightedResults = Satisfactory
    and DoneUnits # PE340
  then
    RECOMMEND = PE340.
  endif.
```


P37 diagnosis:

\ If a student has satisfactory results in the Stage Two prerequisite
 \ and is interested in further Girls sport
 \ and has not done this unit, then recommend it.

```

if
  PEjssc = 3
  and INTERESTS = Girls
  and GRADES:PE270>WeightedResults = Satisfactory
  and DoneUnits # PE370
then
  RECOMMEND = PE370.
endif.

```

\ *****

\ Stage Four PE options

P41 diagnosis:

\ If a student has satisfactory results in the Stage Three prerequisite
 \ and is interested in further Recreation activities
 \ and has not done this unit, then recommend it.

```

if
  \ PEjssc = 3
  GRADES:PE310>WeightedResults = Satisfactory
  and INTERESTS = Recreation
  and DoneUnits # PE410
then
  RECOMMEND = PE410.
endif.

```

P42 diagnosis:

\ If a student has satisfactory results in the Stage Three prerequisite
 \ and is interested in further Team sport
 \ and has not done this unit, then recommend it.

```

if
  \ PEjssc = 3
  GRADES:PE320>WeightedResults = Satisfactory
  and INTERESTS = Team
  and DoneUnits # PE420
then
  RECOMMEND = PE420.
endif.

```

P44 diagnosis:

\ If a student has satisfactory results in the Stage Three prerequisite
 \ and is interested in further Fitness activities
 \ and has not done this unit, then recommend it.

```

if
  \ PEjssc = 3
  GRADES:PE340>WeightedResults = Satisfactory
  and INTERESTS = Fitness
  and DoneUnits # PE440
then
  RECOMMEND = PE440.
endif.

```

P47 diagnosis:

\ If a student has satisfactory results in the Stage Three prerequisite
 \ and is interested in further Girls sport
 \ and has not done this unit, then recommend it.

```

  if
\   PEjssc = 3
    GRADES:PE370>WeightedResults = Satisfactory
    and INTERESTS = Girls
    and DoneUnits # PE470
  then
    RECOMMEND = PE470.
  endif.

```

\ *****

\ Stage Two health options

H28 diagnosis:

\ If a student has completed the Health core requirements
 \ and is interested in further Health units
 \ and has not done this unit
 \ then recommend it.

```

  if
\   STAGE = Stage two
    and Hcore = "completed"
    and INTERESTS = Health
    and DoneUnits # PE280
  then
    RECOMMEND = PE280.
  endif.

```

H29 diagnosis:

\ If a student has completed the Health core requirements
 \ and is interested in further Health units
 \ and has not done this unit
 \ then recommend it.

```

  if
\   STAGE = Stage two
    and Hcore = "completed"
    and INTERESTS = Health
    and DoneUnits # PE290
  then
    RECOMMEND = PE290.
  endif.

```

\ *****

\ Stage Three health options

H39 diagnosis:

\ If a student has completed a Stage Two Health unit
 \ and is interested in further Health units
 \ and has not done this unit
 \ then recommend it.

```

  if
\   DoneUnits = PE280 | PE290
    and INTERESTS = Health
  then
    RECOMMEND = PE390.
  endif.

```

\ *****

\ genre termination

P41t diagnosis:

```
if
  DoneUnits = PE410
  and INTERESTS = Recreation
  then
    RECOMMEND = No_PE.
    NoteRecreation = true.
  endif.
```

P42t diagnosis:

```
if
  DoneUnits = PE420
  and INTERESTS = Team
  then
    RECOMMEND = No_PE.
    NoteTeam = true.
  endif.
```

P2322 diagnosis:

```
if
  DoneUnits = PE230
  and INTERESTS = Team
  and DoneUnits # PE220
  then
    RECOMMEND = PE220.
  endif.
```

P23t diagnosis:

```
if
  DoneUnits = PE230 & PE440
  and INTERESTS = Team
  then
    RECOMMEND = No_PE.
    NoteTeam = true.
  endif.
```

P44t diagnosis:

```
if
  DoneUnits = PE440
  and INTERESTS = Fitness
  then
    RECOMMEND = No_PE.
    NoteFitness = true.
  endif.
```

P26t diagnosis:

```
if
  DoneUnits = PE410
  and INTERESTS = Recreation
  then
    RECOMMEND = No_PE.
    NoteRecreation = true.
  endif.
```

P47t diagnosis:

```

if
  DoneUnits = PE470
  and INTERESTS = Girls
then
  RECOMMEND = No_PE.
  NoteGirls = true.
endif.

```

P39t diagnosis:

```

if
  DoneUnits = PE390
  and INTERESTS = Health
then
  RECOMMEND = No_PE.
  NoteHealth = true.
endif.

```

\ *****

NRecreation details:

```

if
  NoteRecreation = true
then
  reassert NOTES1 = "*** You wanted to do more Recreation activities".
  reassert NOTES2 = " but you have completed all appropriate units!".
  reassert NOTES3 = " You may consider PhysEd alternatives. ***".
endif.

```

NTeam details:

```

if
  NoteTeam = true
then
  reassert NOTES1 = "*** You wanted to do more Team sports".
  reassert NOTES2 = " but you have completed all appropriate units!".
  reassert NOTES3 = " You may consider PhysEd alternatives. ***".
endif.

```

NFitness details:

```

if
  NoteFitness = true
then
  reassert NOTES1 = "*** You wanted to do more Fitness activities".
  reassert NOTES2 = " but you have completed all these units".
  reassert NOTES3 = " so we are recommending alternatives. ***".
endif.

```

\ *****

Compulsory_8 diagnosis:

```

if
  PEjssc lt 3
  and StudYear = 8
then
  reassert TIMING = "Compulsory".
endif.

```

Compulsory_9 diagnosis:

```

if      PEjssc lt 3
      and StudYear = 9
then    reassert TIMING = "Compulsory".
endif.

```

Important_9 diagnosis:

```

if      PEjssc lt 2
      and StudYear = 9
then    reassert TIMING = "Important and Compulsory".
endif.

```

Urgent_10 diagnosis:

```

if      StudYear = 10
      and PEjssc lt 3
then    reassert TIMING = "Urgent and Compulsory".
endif.

```

Urgent diagnosis:

```

if      PEjssc lt 1
then    reassert TIMING = "Urgent and Compulsory".
endif.

```

Extension diagnosis:

```

if      PEjssc = 3
      and PECmplt lt 5
then    reassert TIMING = "Extension".
endif.

```

Specialisation diagnosis:

```

if      PECmplt ge 5
then    reassert TIMING = "Specialisation".
endif.

```

\ *****

%
demons:

Stage2 diagnosis:

```

when  DoneUnits = PE110 & PE125 & PE140
then  STAGE = Stage two<1.00>.
endwhen.

```

AllPhysEdDone Demon:

```

when  PECmplt = 10
then  RECOMMEND = No_PE.
      NOTES1 = "*** You have completed every PhysEd unit".
      NOTES2 = " see Mr Dias about Senior Course options.".
      Initial Interests = Recreation.
      INTERESTS = Recreation.
      FEELINGS = Really keen.
endwhen.

```

\ *****

```

%
actions:

\ In addition to the normal PE and Health units
\ there are multi-level units which need to be recognised

PEcmplt = 0.

assertclass GRADES = RECSP, TEAMSP, No PhysEd.

MultiUnits = No Multilevel PE.

read "KES-STU-DATA-RE", DoneUnits.
  if DoneUnits = RECSP
  then
    reassert MultiUnits = RECSP.
  endif.
  erase DoneUnits.

read "KES-STU-DATA-TE", DoneUnits.
  if DoneUnits = TEAMSP
  then
    if MultiUnits = RECSP
    then
      reassert MultiUnits = MultiUnits & TEAMSP.
    else
      reassert MultiUnits = TEAMSP.
    endif.
  endif.
  erase DoneUnits.

  eraseclass GRADES.

read "KES-STU-DATA-PE", StudSName, StudFName, StudYear, CurrTerm,
GRADES(RESULTS), GRADES, DoneUnits.

if MultiUnits = RECSP
  then reassert DoneUnits = DoneUnits & RECSP.
  endif.
if MultiUnits = TEAMSP
  then reassert DoneUnits = DoneUnits & TEAMSP.
  endif.

```

```

\ *****

\      Interpretation of raw data from student CBASS records.

      if DoneUnits = No PhysEd
      then reassert PEcmplt = PEcmplt - 1.
      endif.

forall G:GRADES do
  reassert PEcmplt = PEcmplt + 1.
  while G>RESULTS = N do
    erase G>RESULTS.
    message BANNER.
message "Our recommendations take into account your previous units and grades".
message "We already know your past results, but not this term's".
message "Please enter the grade you reasonably expect for PE this term".
    askfor G>RESULTS.
  endwhile.
endforall.

PEjssc = 0.
  if DoneUnits = PE110
  then reassert PEjssc = PEjssc + 1.
  endif.
  if DoneUnits = PE125
  then reassert PEjssc = PEjssc + 1.
  endif.
  if DoneUnits = PE140
  then reassert PEjssc = PEjssc + 1.
  endif.

\ *****

obtain RECOMMEND.

\ *****

\      Screen output.

message BANNER.
message combine ("Phys Ed and Health recommendation summary - ", StudFName).

message "Units thus far ", DoneUnits.

if MultiUnits # No Multilevel PE then message MultiUnits. endif.

\message combine ("PE Health cmplt ",PEcmplt).
\message combine ("PEjssc ", PEjssc).
\message combine ("Stage ",STAGE).
\message combine ("PEcore ", PEcore ).
\message combine ("Hcore ", Hcore ).

```

```

message NOTES1.
if NOTES2 # " " then message NOTES2.
                        message NOTES3, " ". endif.

if PEcmplt lt 10
then
message combine ("We recommend that you consider ", RECOMMEND).
message " ".
message combine ("This recommendation is for ",TIMING," unit/s.").
endif.

\ *****
\      File output.

write "RcmdPE", TIMING, RECOMMEND.

\ *****

\      Termination

if INFO = Justify      then justify RECOMMEND.
                        message HOLD.
                        stop.
                        endif.
if INFO = Again        then nextcase.
                        endif.
if INFO = Continue     then stop.
                        endif.

%
```


\ NEXT-SCIENCE.

constants:

BANNER:

```

"*****",
" ".

```

HOLD:

```

"           Please press c to continue".

```

%

types:

units:mlt

```

(SC1I, SC1R, SC1E, SC1ER, SC2E, SC3E, SC1B, SC1BR, SC2B, SC3AA, SC3B,
SC3AE, SC4B, SC1C, SC1CR, SC2C, SC3C, SC4C, SC1P, SC1PR, SC2P, SC3P,
SC4P, SC2H, No Science, No_SC).

```

%

attributes:

StudSName:str [default: " "].

StudFName:str [default: " "].

StudYear:int.

CurrTerm:int.

NOTES1:str.

NOTES2:str.

NOTES3:str.

TIMING:str.

NoteGeology:truth.

NoteBiology:truth.

NoteChemistry:truth.

NotePhysics:truth.

jssc7:truth.

jsscS3:truth.

CoreUnit:truth.

DoneUnits:units.

RECOMMEND:units.

SCIENCEjssc:int [default:0].

SCIENCEcmplt:int [default: 0].

Initial Interests:sgl

(Geology

```

  {question:" Geology and minerals"}

```

```

  {explain: "These units are ."},

```

Biology

```

  {question:" Biology and environmental studies"}

```

```

  {explain: "These units are ."},

```

Chemistry

```

  {question:" Chemistry"}

```

```

  {explain: "These units are ."},

```

Physics

```

    {question:" Physics"}
    {explain: "These units are ."}}
{question: "Which of these Science groups would you prefer next term?"," " }
{explain: "Our recommendations take in account your preferences as well as your
grades in the pre-requisite units."}.

```

INTERESTS:sgl

(Geology, Biology, Chemistry, Physics).

ScienceFEELINGS:sgl

(Really keen, Enjoy it, Its okay, Prefer not, Definitely not)

```

{question: "What are you feelings towards doing Science next term?"," " }
{explain: "We only recommend Science extension units to those students who wish to
study more Science!"}.

```

STAGE:mlt

(Stage one, Stage two, Stage three, Stage four).

INFO:sgl

(Justify

{question: "Explain the recommendation."},

Again

{question: "Enter new information about your preferences."},

Continue

{question: "Continue with the next subject area."})

{question: "What would you like to do now?"," " }.

%

classes:

GRADES:

attributes:

RESULTS:sgl (A, B, C, D, E, W, N).

WeightedResults:sgl (Satisfactory, Unsatisfactory).

%

endclass.

%

rules:

\ *****

\ setting flags

Setup output:

if true

then

NOTES1 = " ".

NOTES2 = " ".

NOTES3 = " ".

TIMING = " ".

jssc7 = true.

jsscS3 = true.

endif.

Preliminary_Stage1 diagnosis:

```

if
GRADES:SC1I>WeightedResults = Satisfactory
or GRADES:SC1R>WeightedResults = Satisfactory
then
STAGE = Stage one.
endif.

```

compulsory_7_units flag:

```

if
DoneUnits # SC1I & SC1E & SC2E & SC1B & SC2B & SC1C & SC1P
then
reassert jssc7 = false.
endif.

```

compulsory_stage3 flag:

```

if
DoneUnits # SC3E | SC3AA | SC3B | SC3AE | SC3C | SC3P
then
reassert jsscS3 = false.
endif.

```

core_units_required flag:

```

if
jssc7 = true
and SCIENCEcmplt lt 10
or SCIENCEjssc = 9
then
CoreUnit = true.
endif.

```

core_Earth_completed diagnosis:

```

if
DoneUnits = SC2E
and Initial Interests = Geology
and jssc7 = false

```

then

```

reassert NOTES1= "*** You have not completed all your compulsory science units".
reassert NOTES2= " and thus need to put Geology on hold".
reassert NOTES3= " Please select another science group!".
reassert TIMING = "Important and Compulsory".
endif.

```

core_Biology_completed diagnosis:

```

if
DoneUnits = SC2B
and Initial Interests = Biology
and jssc7 = false

```

then

```

reassert NOTES1= "*** You have not completed all your compulsory science units".
reassert NOTES2= " and thus need to put Biology on hold".
reassert NOTES3= " Please select another science group!".
reassert TIMING = "Important and Compulsory".
endif.

```

```

core_Chemistry_completed diagnosis:
  if
    GRADES:SC1C>WeightedResults = Satisfactory
    or GRADES:SC1CR>WeightedResults = Satisfactory
    and Initial Interests = Chemistry
    and jssc7 = false
  then
    reassert NOTES1= "*** You have not completed all your compulsory science units".
    reassert NOTES2= " and thus need to put Chemistry on hold".
    reassert NOTES3= " Please select another science group!".
    reassert TIMING = "Important and Compulsory".
  endif.

```

```

core_Physics_completed diagnosis:
  if
    GRADES:SC1P>WeightedResults = Satisfactory
    or GRADES:SC1PR>WeightedResults = Satisfactory
    and Initial Interests = Physics
    and jssc7 = false
  then
    reassert NOTES1= "*** You have not completed all your compulsory science units".
    reassert NOTES2= " and thus need to put Physics on hold".
    reassert NOTES3= " Please select another science group!".
    reassert TIMING = "Important and Compulsory".
  endif.

```

\ *****

```

Science_PreferNot response:
  if
    SCIENCEjssc = 9
    and ScienceFEELINGS = Prefer not
  then
    RECOMMEND = No_SC <0.50>.
  endif.

```

```

Science_DefinitelyNot response:
  if
    SCIENCEjssc = 9
    and ScienceFEELINGS = Definitely not
  then
    RECOMMEND = No_SC <1.00>.
  endif.

```

```

Geology_keen response:
  if
    STAGE = Stage one
    and ScienceFEELINGS = Really keen
    and Initial Interests = Geology
  then
    INTERESTS = Geology <1.00>.
  endif.

```

Geology_Enjoy response:

```

if
  STAGE = Stage one
  and ScienceFEELINGS = Enjoy it
  and Initial Interests = Geology
then
  INTERESTS = Geology <0.75>.
endif.

```

Geology_OK response:

```

if
  STAGE = Stage one
  and ScienceFEELINGS = Its okay
  and Initial Interests = Geology
then
  INTERESTS = Geology <0.30>.
endif.

```

Biology_keen response:

```

if
  STAGE = Stage one
  and ScienceFEELINGS = Really keen
  and Initial Interests = Biology
then
  INTERESTS = Biology <1.00>.
endif.

```

Biology_Enjoy response:

```

if
  STAGE = Stage one
  and ScienceFEELINGS = Enjoy it
  and Initial Interests = Biology
then
  INTERESTS = Biology <0.75>.
endif.

```

Biology_OK response:

```

if
  STAGE = Stage one
  and ScienceFEELINGS = Its okay
  and Initial Interests = Biology
then
  INTERESTS = Biology <0.30>.
endif.

```

Chemistry_keen response:

```

if
  STAGE = Stage one
  and ScienceFEELINGS = Really keen
  and Initial Interests = Chemistry
then
  INTERESTS = Chemistry <1.00>.
endif.

```

Chemistry_Enjoy response:

```

if
  STAGE = Stage one
  and ScienceFEELINGS = Enjoy it
  and Initial Interests = Chemistry
then
  INTERESTS = Chemistry <0.75>.
endif.

```

Chemistry_OK response:

```

if
  STAGE = Stage one
  and ScienceFEELINGS = Its okay
  and Initial Interests = Chemistry
then
  INTERESTS = Chemistry <0.30>.
endif.

```

Physics_keen response:

```

if
  STAGE = Stage one
  and ScienceFEELINGS = Really keen
  and Initial Interests = Physics
then
  INTERESTS = Physics <1.00>.
endif.

```

Physics_Enjoy response:

```

if
  STAGE = Stage one
  and ScienceFEELINGS = Enjoy it
  and Initial Interests = Physics
then
  INTERESTS = Physics <0.75>.
endif.

```

Physics_OK response:

```

if
  STAGE = Stage one
  and ScienceFEELINGS = Its okay
  and Initial Interests = Physics
then
  INTERESTS = Physics <0.30>.
endif.

```

\ *****

\ Preliminary Stage

SC1I diagnosis:

\ If a student has not done SC1I or SC1R
 \ then recommend the compulsory introduction units.

```

if
  DoneUnits # SC1I | SC1R
then
  RECOMMEND = SC1I.
endif.

```

SC1R diagnosis:

\ If a student did not pass the introduction unit SC1I
 \ then recommend the Stage One extension unit SC1R.

```

if
  GRADES:SC1I>WeightedResults = Unsatisfactory
  and DoneUnits # SC1R
then
  RECOMMEND = SC1R.
endif.

```

\ *****

\ Earth Science units

S1E diagnosis:

```

\ If a student has completed either of the introductory units
\ and is interested in Geology
\ and has not done Stage One Geology
\ then recommend this compulsory unit.
    if
        DoneUnits = SC1I | SC1R
        and Initial Interests = Geology
        and DoneUnits # SC1E
    then
        RECOMMEND = SC1E.
    endif.

```

S1ER diagnosis:

```

\ If a student has not passed the Stage One Geology unit
\ then it is recommended they do enrol in the extension unit.
    if
\        DoneUnits = SC1I
        GRADES:SC1E>WeightedResults = Unsatisfactory
\        and INTERESTS = Geology
        and DoneUnits # SC2E
        and DoneUnits # SC1ER
    then
        RECOMMEND = SC1ER.
    endif.

```

S2E diagnosis:

```

\ If a student has not completed the Stage Two Geology unit
\ and has selected Geology
\ and has either passed SC1E or done SC1ER
\ then recommend the compulsory unit SC2E.
    if
        DoneUnits # SC2E
        and Initial Interests = Geology
        and GRADES:SC1E>WeightedResults = Satisfactory
        or DoneUnits = SC1ER
    then
        RECOMMEND = SC2E.
    endif.

```

S3E diagnosis:

```

\ If a student has completed the seven compulsory units
\ and has satisfactory results in Stage Two Geology
\ and has selected Geology
\ then recommend Stage Three Geology.
    if
        jssc7
        and GRADES:SC2E>WeightedResults = Satisfactory
        and INTERESTS = Geology
        and DoneUnits # SC3E
    then
        RECOMMEND = SC3E.
    endif.

```

\ *****

\ Biology units

S1B diagnosis:

```

\ If a student has completed either of the introductory units
\ and is interested in Biology
\ and has not done Stage One Biology
\ then recommend this compulsory unit.
  if
    DoneUnits = SC1I | SC1R
    and Initial Interests = Biology
    and DoneUnits # SC1B
  then
    RECOMMEND = SC1B.
  endif.

```

S2H diagnosis:

```

\ If a student has still to finish the core requirements
\ and has selected Biology
\ and has not completed the Stage Two Horticulture unit
\ then recommend the optional unit SC2H.
  if
    CoreUnit
    and Initial Interests = Biology
    and DoneUnits # SC2H
  then
    RECOMMEND = SC2H.
  endif.

```

S1BR diagnosis:

```

\ If a student has not passed the Stage One Biology unit
\ then it is recommended they do enrol in the extension unit.
  if
    DoneUnits = SC1B
    GRADES:SC1B>WeightedResults = Unsatisfactory
    and DoneUnits # SC2B
    and DoneUnits # SC1BR
    and Initial Interests = Biology
  then
    RECOMMEND = SC1BR.
  endif.

```

S2B diagnosis:

```

\ If a student has not completed the Stage Two Biology unit
\ and has selected Biology
\ and has either passed SC1B or done SC1BR
\ then recommend the compulsory unit SC2B.
  if
    DoneUnits # SC2B
    and Initial Interests = Biology
    and GRADES:SC1B>WeightedResults = Satisfactory
    or DoneUnits = SC1BR
  then
    RECOMMEND = SC2B.
  endif.

```


S3B diagnosis:

```

\ If a student has completed the seven compulsory units
\ and has satisfactory results in Stage Two Biology and Chemistry
\ and has selected Biology
\ then recommend Stage Three Extension Biology SC3B.
  if
    jssc7
  \   and DoneUnits = SC2B & SC2C
    and GRADES:SC2B>WeightedResults = Satisfactory
    and GRADES:SC2C>WeightedResults = Satisfactory
    and INTERESTS = Biology
    and DoneUnits # SC3B
  then
    RECOMMEND = SC3B.
  endif.

```

S3AE diagnosis:

```

\ If a student has completed the seven compulsory units
\ and has satisfactory results in Stage Two Biology
\ and has selected Biology
\ then recommend Stage Three Environmental Awareness SC3AE.
  if
    jssc7
    and GRADES:SC2B>WeightedResults = Satisfactory
    and INTERESTS = Biology
    and DoneUnits # SC3AE
  then
    RECOMMEND = SC3AE.
  endif.

```

S3AA diagnosis:

```

\ If a student has completed the seven compulsory units
\ and has satisfactory results in Stage Two Biology
\ and has selected Biology
\ then recommend Stage Three Animal Anatomy and Physiology SC3AA.
  if
    jssc7
    and GRADES:SC2B>WeightedResults = Satisfactory
    and INTERESTS = Biology
    and DoneUnits # SC3AA
  then
    RECOMMEND = SC3AA.
  endif.

```

S4B diagnosis:

```

\ If a student has been successful in Stage Three Biology SC3B
\ and has selected Biology
\ then recommend Stage Four Link Biology SC4B.
  if
  \   DoneUnits = SC3B
    GRADES:SC3B>WeightedResults = Satisfactory
    and INTERESTS = Biology
    and DoneUnits # SC4B
  then
    RECOMMEND = SC4B.
  endif.

```

\ *****

\ Chemistry units

S1C diagnosis:

\ If a student has completed either of the introductory units

\ and is interested in Chemistry

\ and has not done Stage One Chemistry

\ then recommend this compulsory unit.

if

DoneUnits = SC1I | SC1R

and Initial Interests = Chemistry

and DoneUnits # SC1C

then

RECOMMEND = SC1C.

endif.

S1CR diagnosis:

\ If a student has not passed the Stage One Chemistry unit

\ then it is recommended they do enrol in the extension unit.

if

\ DoneUnits = SC1C

GRADES:SC1C>WeightedResults = Unsatisfactory

\ and Initial Interests = Chemistry

and DoneUnits # SC2C

and DoneUnits # SC1CR

then

RECOMMEND = SC1CR.

endif.

S2C diagnosis:

\ If a student has still to finish the core requirements

\ and has not completed the Stage Two Chemistry unit

\ and has selected Chemistry

\ and has either passed SC1C or done SC1CR

\ then recommend the optional unit SC2B.

if

CoreUnit

and DoneUnits # SC2C

and INTERESTS = Chemistry

and GRADES:SC1C>WeightedResults = Satisfactory

or DoneUnits = SC1CR

then

RECOMMEND = SC2C.

endif.

S3C diagnosis:

\ If a student has completed the seven compulsory units

\ and has satisfactory results in Stage Two Chemistry

\ and has selected Chemistry

\ then recommend Stage Three Extension Chemistry SC3C.

if

\ DoneUnits = SC2C

GRADES:SC2C>WeightedResults = Satisfactory

and INTERESTS = Chemistry

and DoneUnits # SC3C

then

RECOMMEND = SC3C.

endif.

S4C diagnosis:

```

\ If a student has been successful in Stage Three Chemistry
\ and has selected Chemistry
\ then recommend Stage Four Link Chemistry SC4C.
  if
\   DoneUnits = SC3C
    GRADES:SC3C>WeightedResults = Satisfactory
    and INTERESTS = Chemistry
    and DoneUnits # SC4C
  then
    RECOMMEND = SC4C.
  endif.

```

```

\ *****

```

\ Physics units

S1P diagnosis:

```

\ If a student has completed either of the introductory units
\ and is interested in Physics
\ and has not done Stage One Physics
\ then recommend this compulsory unit.
  if
    DoneUnits = SC1I | SC1R
    and Initial Interests = Physics
    and DoneUnits # SC1P
  then
    RECOMMEND = SC1P.
  endif.

```

S1PR diagnosis:

```

\ If a student has not passed the Stage One Physics unit
\ then it is recommended they do enrol in the extension unit.
  if
\   DoneUnits = SC1P
    GRADES:SC1P>WeightedResults = Unsatisfactory
\   and Initial Interests = Physics
    and DoneUnits # SC2P
    and DoneUnits # SC1PR
  then
    RECOMMEND = SC1PR.
  endif.

```

S2P diagnosis:

```

\ If a student has still to finish the core requirements
\ and has not completed the Stage Two Physics unit
\ and has selected Physics
\ and has either passed SC1P or done SC1PR
\ then recommend the optional unit SC2P.
  if
    CoreUnit
\   and DoneUnits = SC1P | SC1PR
    and DoneUnits # SC2P
    and INTERESTS = Physics
    and GRADES:SC1P>WeightedResults = Satisfactory
    or GRADES:SC1PR>WeightedResults = Satisfactory
  then
    RECOMMEND = SC2P.
  endif.

```

S3P diagnosis:

```

\ If a student has completed the seven compulsory units
\ and has satisfactory results in Stage Two Physics
\ and has selected Physics
\ then recommend Stage Three Physics SC3P.
  if
\   DoneUnits = SC2P
    GRADES:SC2P>WeightedResults = Satisfactory
    and INTERESTS = Physics
    and DoneUnits # SC3P
  then
    RECOMMEND = SC3P.
  endif.

```

S4P diagnosis:

```

\ If a student has been successful in Stage Three Physics
\ and has selected Physics
\ then recommend Stage Four Link Physics SC4P.
  if
\   DoneUnits = SC3P
    GRADES:SC3P>WeightedResults = Satisfactory
    and INTERESTS = Physics
    and DoneUnits # SC4P
  then
    RECOMMEND = SC4P.
  endif.

```

```

\ *****
\ genre termination

```

S3Et diagnosis:

```

  if
    DoneUnits = SC3E
    and INTERESTS = Geology
  then
    reassert NOTES1 = "*** You wanted to do more Geology units".
    reassert NOTES2 = " but you have completed all these units".
    reassert NOTES3 = " Please use option 2 below for alternatives. ***".
  endif.

```

S4Bt diagnosis:

```

  if
    DoneUnits = SC4B
    and INTERESTS = Biology
  then
    reassert NOTES1 = "*** You wanted to do more Biology or Environmental
units".
    reassert NOTES2 = " but you have completed all these units".
    reassert NOTES3 = " Please use option 2 below for alternatives. ***".
  endif.

```

S4Ct diagnosis:

```

  if
    DoneUnits = SC4C
    and INTERESTS = Chemistry
  then
    reassert NOTES1 = "*** You wanted to do more Chemistry".
    reassert NOTES2 = " but you have completed all these units".
    reassert NOTES3 = " Please use option 2 below for alternatives. ***".
  endif.

```

S4Pt diagnosis:

```

if
  DoneUnits = SC4P
  and INTERESTS = Physics
then
  reassert NOTES1 = "** You wanted to do more Physics".
  reassert NOTES2 = " but you have completed all these units".
  reassert NOTES3 = " Please use option 2 below for alternatives. **".
endif.

```

\ *****
 \ timing diagnosis

Cjssc9 diagnosis:

```

if
  SCIENCEjssc lt 9
  and jssc7 = true
then
  reassert TIMING = "Important and Compulsory".
endif.

```

UrgentPriority diagnosis:

```

if
  RECOMMEND = SC1I | SC1R | SC1E | SC1B | SC1C | SC1P
then
  reassert TIMING = "Urgent and Compulsory".
endif.

```

Important diagnosis:

```

if
  RECOMMEND = SC2E | SC2B
then
  reassert TIMING = "Important and Compulsory".
endif.

```

Remedial diagnosis:

```

if
  RECOMMEND = SC1ER | SC1BR | SC1CR | SC1PR
then
  reassert TIMING = "Important and Compulsory".
endif.

```

CjsscS3 diagnosis:

```

if
  jsscS3 = false
  and RECOMMEND = SC3E | SC3AA | SC3B | SC3AE | SC3C | SC3P
then
  reassert TIMING = "Compulsory".
endif.

```

Extension diagnosis:

```

if
  SCIENCEjssc = 9
then
  reassert TIMING = "Extension".
endif.

```

Specialisation diagnosis:

```

if
  SCIENCEcmplt ge 12
then
  reassert TIMING = "Specialisation".
endif.

```

Year_8 timing:

```

if
  StudYear = 8
then
  reassert TIMING = "Urgent and Compulsory".
endif.

```

Year_10 timing:

```

if
  StudYear = 10
  and SCIENCEjssc lt 9
then
  reassert TIMING = "Urgent and Compulsory".
endif.

```

\ *****

%

demons:

core9 Demon:

```

when
  jssc7 = true
  and jsscS3 = true
  and SCIENCEcmplt ge 9
then
  reassert SCIENCEjssc = 9.
endwhen.

```

\Stage1 Demon:

```

\ when
\ DoneUnits # SC101
\ then
\ RECOMMEND = SC101.
\ endwhen.

```

\Stage2 Demon:

```

\ when
\ GRADES:SC1I>WeightedResults = Satisfactory
\ or GRADES:SC1R>WeightedResults = Satisfactory
\ then
\ STAGE = Stage one.
\ endwhen.

```

\Stage3 Demon:

```

\ when
\ DoneUnits = SC202 & SC203 & SC205
\ then
\ STAGE = Stage three.
\ endwhen.

```

\ *****

```

%
actions:

read "KES-STU-DATA-SC", StudSName, StudFName, StudYear, CurrTerm,
GRADES, GRADES(RESULTS), DoneUnits.

\ *****

\      Interpretation of raw data from student CBASS records.

forall G:GRADES do
  while G>RESULTS = N do
    erase G>RESULTS.
    message BANNER.
message "Our recommendations take into account your previous units and grades".
message "We already know your past results, but not this term's".
message "Please enter the grade you reasonably expect for Science this term".
    askfor G>RESULTS.
  endwhile.
  if    G>RESULTS = A
  then  G>WeightedResults = Satisfactory <1.00>.
        endif.
  if    G>RESULTS = B
  then  G>WeightedResults = Satisfactory <1.00>.
        endif.
  if    G>RESULTS = C
  then  G>WeightedResults = Satisfactory <1.00>.
        endif.
  if    G>RESULTS = D
  then  G>WeightedResults = Satisfactory <0.05>.
        endif.
  if    G>RESULTS = E
  then  G>WeightedResults = Unsatisfactory <0.50>.
        endif.
  if    G>RESULTS = W
  then  G>WeightedResults = Satisfactory <0.01>.
        endif.
endforall.

\ Count units satisfactorily completed at Stages two three and four

SCIENCEcmplt = 0.
  if DoneUnits = No Science
  then reassert SCIENCEcmplt = SCIENCEcmplt - 1.
  endif.

  forall G:GRADES do
    if    G> WeightedResults = Satisfactory | Unsatisfactory
    then  reassert SCIENCEcmplt = SCIENCEcmplt + 1.
    endif.
  endforall.

\ *****

```

obtain RECOMMEND.

\ *****

\ Screen output.

message BANNER.
 message combine (" Science recommendation summary - ", StudFName).
 message "Units thus far ", DoneUnits, " ".

\message combine ("jssc7 ", jssc7, " SCIENCEjssc ", SCIENCEjssc).

if NOTES1 # " "
 then message NOTES1.
 message NOTES2.
 message NOTES3, " ". endif.

message combine ("We recommend that you consider ", RECOMMEND).
 message " "
 message combine ("This recommendation considers ",TIMING," unit/s.").

\ *****

\ File output.

write "RcmdSC", TIMING, RECOMMEND.

\ *****

\ Termination

if INFO = Justify	then justify RECOMMEND.		
		message HOLD.	
		stop.	endif.
if INFO = Again	then nextcase.		endif.
if INFO = Continue	then stop.		endif.

%

\ NEXT-SOCED.

constants:

BANNER:

```
"*****",
"
```

HOLD:

```
"           Please press c to continue".
```

%

types:

units:mlt

```
(SA110, SA120, SA210, SA220, SA230, SA231, SA240, SA241, SA300, SA310,
SA311, SA320, SA321, SA330, SA331, SA340, SA341, SA410, SA411, SA420,
SA421, SA430, SA431, SA440, SA441, saWPP, saMNY, saLAW, No SocEd,
No_SA).
```

%

attributes:

StudSName:str [default: " "].

StudFName:str [default: " "].

StudYear:int.

CurrTerm:int.

NOTES1:str.

NOTES2:str.

NOTES3:str.

TIMING:str.

NoteGeography:truth.

NoteHistory:truth.

NoteConflict:truth.

NoteAsian:truth.

Stage4Entry:truth.

DoneUnits:units.

RECOMMEND:units.

SOCEDjssc:int.

SOCEDcmplt:int.

Stage3Results:int.

Initial Interests:sgl

(Geography

```
{question:" Geography and Environmental studies"}
```

```
{explain: "These units are ."},
```

History

```
{question:" History studies"}
```

```
{explain: "These units are ."},
```

Conflict

```
{question:" Legal Studies and Economics"}
```

```
{explain: "These units are ."},
```

Asian

```
{question:" Asian studies" }
  {explain: "These units are ."}}
{question: "Which of these SocEd groups would you prefer next term?"," " }
{explain: "Our recommendations take in account your preferences as well as your
grades in the pre-requisite units."}.
```

INTERESTS:sgl

(Geography, History, Conflict, Asian).

SocEdFEELINGS:sgl

(Really keen, Enjoy it, Its okay, Prefer not, Definitely not)

```
{question: "What are you feelings towards doing SocEd next term?"," " }
{explain: "We only recommend SocEd extension units to those students who wish to
study more SocEd!"}.
```

STAGE:sgl

(Stage one, Stage two, Stage three, Stage four).

INFO:sgl

(Justify

```
{question: "Explain the recommendation."},
```

Again

```
{question: "Enter new information about your preferences."},
```

Continue

```
{question: "Continue with the next subject area."})
```

```
{question: "What would you like to do now?"," " }.
```

%

classes:

GRADES:

attributes:

RESULTS:sgl (A, B, C, D, E, W, N).

WeightedResults:sgl (Satisfactory, Unsatisfactory).

%

endclass.

%

rules:

Setup diagnosis:

if true

```
then  NOTES1 = " ".
      NOTES2 = " ".
      NOTES3 = " ".
      SOCEDjssc = 0.
      STAGE = Stage one.
      TIMING = " ".
endif.
```

```

Sjssc9 flag:
  if DoneUnits = SA300
    and SOCEDcmplt ge 9
  then
    reassert SOCEDjssc = 9.
  endif.

\Stage1 diagnosis:
\  if DoneUnits # SA110 & SA120
\  then reassert STAGE = Stage one.
\  endif.

Stage2 diagnosis:
  if DoneUnits = SA110 & SA120
    and SOCEDcmplt lt 6
  then reassert STAGE = Stage two.
  endif.

Stage3 diagnosis:
  if SOCEDcmplt ge 6
    and Stage4Entry = false
  then reassert STAGE = Stage three.
  endif.

\Stage4 diagnosis:
\if DoneUnits = SA300
\and DoneUnits = SA310 | SA311 | SA320 | SA321 | SA330 | SA331 | SA340 | SA341
\then reassert STAGE = Stage four.
\  endif.

\ *****
\ Stage One

S110 diagnosis:
\ If a student has not done the compulsory unit SA110
\ then recommend this unit.
  if
\  STAGE = Stage one
  DoneUnits # SA110
  then
    RECOMMEND = SA110.
  endif.

S120 diagnosis:
\ If a student has not done the compulsory unit SA120
\ then recommend this unit.
  if
\  STAGE = Stage one
  DoneUnits # SA120
  then
    RECOMMEND = SA120.
  endif.

\ *****

```

\ Stage Two

S210 diagnosis:

\ If a student has not completed four Stage Two units
\ then recommend this unit.

```

if
  STAGE = Stage two
  and DoneUnits # SA210
then
  RECOMMEND = SA210.
endif.

```

S220 diagnosis:

\ If a student has not completed four Stage Two units
\ then recommend this unit.

```

if
  STAGE = Stage two
  and DoneUnits # SA220
then
  RECOMMEND = SA220.
endif.

```

S230 diagnosis:

\ If a student has not completed four Stage Two units
\ then recommend this unit.

```

if
  STAGE = Stage two
  and DoneUnits # SA230
then
  RECOMMEND = SA230.
endif.

```

S231 diagnosis:

\ If a student has not completed four Stage Two units
\ then recommend this unit.

```

if
  STAGE = Stage two
  and DoneUnits # SA231
then
  RECOMMEND = SA231.
endif.

```

S240 diagnosis:

\ If a student has not completed four Stage Two units
\ then recommend this unit.

```

if
  STAGE = Stage two
  and DoneUnits # SA240
then
  RECOMMEND = SA240.  endif.

```

S241 diagnosis:

\ If a student has not completed four Stage Two units
\ then recommend this unit.

```

if
  STAGE = Stage two
  and DoneUnits # SA241
then
  RECOMMEND = SA241.  endif.

```

\ *****

\ Stage Three

S310 diagnosis:

\ If a student is at Stage Three

\ and has selected Geography

\ then recommend this unit.

\ but

if

STAGE = Stage three

\ SOCEDcmplt ge 6

and Stage4Entry = false

and Initial Interests = Geography

and DoneUnits # SA310

then

RECOMMEND = SA310.

endif.

S311 diagnosis:

\ If a student is at Stage Three

\ then recommend this unit.

if

STAGE = Stage three

\ SOCEDcmplt ge 6

and Stage4Entry = false

and DoneUnits # SA311

then

RECOMMEND = SA311.

endif.

S320 diagnosis:

\ If a student is at Stage Three

\ and has selected History or Geography

\ then recommend this unit.

if

STAGE = Stage three

\ SOCEDcmplt ge 6

and Stage4Entry = false

and Initial Interests = History | Geography

and DoneUnits # SA320

then

RECOMMEND = SA320.

endif.

S321 diagnosis:

\ If a student is at Stage Three

\ and has selected History

\ then recommend this unit.

if

STAGE = Stage three

\ SOCEDcmplt ge 6

and Stage4Entry = false

and Initial Interests = History

and DoneUnits # SA321

then

RECOMMEND = SA321.

endif.

S330 diagnosis:
 \ If a student is at Stage Three
 \ and has selected Conflict Resolution
 \ then recommend this unit.
 if
 STAGE = Stage three
 \ SOCEDcmplt ge 6
 and Stage4Entry = false
 and Initial Interests = Conflict
 and DoneUnits # SA330
 then
 RECOMMEND = SA330.
 endif.

S331 diagnosis:
 \ If a student is at Stage Three
 \ then recommend this unit.
 if
 STAGE = Stage three
 \ SOCEDcmplt ge 6
 and Stage4Entry = false
 and DoneUnits # SA331
 then
 RECOMMEND = SA331.
 endif.

S340 diagnosis:
 \ If a student is at Stage Three
 \ then recommend this unit.
 if
 STAGE = Stage three
 \ SOCEDcmplt ge 6
 and Stage4Entry = false
 and DoneUnits # SA340
 then
 RECOMMEND = SA340.
 endif.

S341 diagnosis:
 \ If a student is at Stage Three
 \ then recommend this unit.
 if
 STAGE = Stage three
 \ SOCEDcmplt ge 6
 and Stage4Entry = false
 and DoneUnits # SA341
 then
 RECOMMEND = SA341.
 endif.

\ *****

SocEdPreferNot diagnosis:

```

if
SOCEDjssc = 9
and SocEdFEELINGS = Prefer not
then
RECOMMEND = No_SA <0.50>.
endif.

```

SocEdDefinitelyNot diagnosis:

```

if
SOCEDjssc = 9
and SocEdFEELINGS = Definitely not
then
RECOMMEND = No_SA <1.00>.
endif.

```

Geographykeen diagnosis:

```

if
Stage4Entry
and SocEdFEELINGS = Really keen
and Initial Interests = Geography
then
INTERESTS = Geography <1.00>.
endif.

```

GeographyEnjoy diagnosis:

```

if
Stage4Entry
and SocEdFEELINGS = Enjoy it
and Initial Interests = Geography
then
INTERESTS = Geography <0.75>.
endif.

```

GeographyOK diagnosis:

```

if
Stage4Entry
and SocEdFEELINGS = Its okay
and Initial Interests = Geography
then
INTERESTS = Geography <0.10>.
endif.

```

Historykeen diagnosis:

```

if
Stage4Entry
and SocEdFEELINGS = Really keen
and Initial Interests = History
then
INTERESTS = History <1.00>.
endif.

```

HistoryEnjoy diagnosis:

```

if
Stage4Entry
and SocEdFEELINGS = Enjoy it
and Initial Interests = History
then
INTERESTS = History <0.75>.
endif.

```

HistoryOK diagnosis:

```

if
  Stage4Entry
  and SocEdFEELINGS = Its okay
  and Initial Interests = History
then
  INTERESTS = History <0.10>.
endif.

```

Conflictkeen diagnosis:

```

if
  Stage4Entry
  and SocEdFEELINGS = Really keen
  and Initial Interests = Conflict
then
  INTERESTS = Conflict <1.00>.
endif.

```

ConflictEnjoy diagnosis:

```

if
  Stage4Entry
  and SocEdFEELINGS = Enjoy it
  and Initial Interests = Conflict
then
  INTERESTS = Conflict <0.75>.
endif.

```

ConflictOK diagnosis:

```

if
  Stage4Entry
  and SocEdFEELINGS = Its okay
  and Initial Interests = Conflict
then
  INTERESTS = Conflict <0.10>.
endif.

```

Asiankeen diagnosis:

```

if
  Stage4Entry
  and SocEdFEELINGS = Really keen
  and Initial Interests = Asian
then
  INTERESTS = Asian <1.00>.
endif.

```

AsianEnjoy diagnosis:

```

if
  Stage4Entry
  and SocEdFEELINGS = Enjoy it
  and Initial Interests = Asian
then
  INTERESTS = Asian <0.75>.
endif.

```

AsianOK diagnosis:

```

if
  Stage4Entry
  and SocEdFEELINGS = Its okay
  and Initial Interests = Asian
then
  INTERESTS = Asian <0.10>.
endif.

```

\ *****

\ Year Ten Business Education Units

BusEd diagnosis:

```

\ If a student has completed the compulsory unit SA300
\ and is in year ten
\ then recommend the Business Education units
\ Work Preparation, Money in Society, Law in Society.
  if          DoneUnits = SA300
  and        StudYear = 10
  then      RECOMMEND = saWPP | saMNY | saLAW.
  endif.

```

\ *****

\ Stage Four

S410 diagnosis:

```

\ If a student has good passes in two Stage Three units
\ and has selected Geography
\ then recommend this unit which has not yet been done.
  if
\   STAGE = Stage four
   Stage4Entry = true
   and INTERESTS = Geography
   and DoneUnits # SA410
  then
   RECOMMEND = SA410.
  endif.

```

S411 diagnosis:

```

\ If a student has good passes in two Stage Three units
\ and has selected Geography
\ then recommend this unit which has not yet been done.
  if
\   STAGE = Stage four
   Stage4Entry = true
   and INTERESTS = Geography
   and DoneUnits # SA411
  then
   RECOMMEND = SA411.
  endif.

```

S420 diagnosis:

```

\ If a student has good passes in two Stage Three units
\ and has selected History
\ then recommend this unit which has not yet been done.
  if
\   STAGE = Stage four
   Stage4Entry = true
   and INTERESTS = History
   and DoneUnits # SA420
  then
   RECOMMEND = SA420.
  endif.

```

S421 diagnosis:

```
\ If a student has good passes in two Stage Three units
\ and has selected History
\ then recommend this unit which has not yet been done.
  if
\   STAGE = Stage four
   Stage4Entry = true
   and INTERESTS = History
   and DoneUnits # SA421
   then
     RECOMMEND = SA421.
   endif.
```

S430 diagnosis:

```
\ If a student has good passes in two Stage Three units
\ and has selected Conflict analysis
\ then recommend this unit which has not yet been done.
  if
\   STAGE = Stage four
   Stage4Entry = true
   and INTERESTS = Conflict
   and DoneUnits # SA430
   then
     RECOMMEND = SA430.
   endif.
```

S431 diagnosis:

```
\ If a student has good passes in two Stage Three units
\ and has selected Conflict analysis
\ then recommend this unit which has not yet been done.
  if
\   STAGE = Stage four
   Stage4Entry = true
   and INTERESTS = Conflict
   and DoneUnits # SA431
   then
     RECOMMEND = SA431.
   endif.
```

S440 diagnosis:

```
\ If a student has good passes in two Stage Three units
\ and has selected Asian studies
\ then recommend this unit which has not yet been done.
  if
\   STAGE = Stage four
   Stage4Entry = true
   and INTERESTS = Asian
   and DoneUnits # SA440
   then
     RECOMMEND = SA440.
   endif.
```

S441 diagnosis:

```
\ If a student has good passes in two Stage Three units
\ and has selected Asian studies
\ then recommend this unit which has not yet been done.
  if
\   STAGE = Stage four
    Stage4Entry = true
    and INTERESTS = Asian
    and DoneUnits # SA441
    then
      RECOMMEND = SA441.
    endif.
```

```
\ *****
\ genre termination
```

all_Geography:

```
if   DoneUnits = SA410 & SA411
    and INTERESTS = Geography
then
reassert NOTES1 = "*** You wanted to do more Geography or Environment units".
reassert NOTES2 = " but you have completed all these units".
reassert NOTES3 = " Please use option 2 below for alternatives. ***".
endif.
```

all_History:

```
if   DoneUnits = SA420 & SA421
    and INTERESTS = History
then
reassert NOTES1 = "*** You wanted to do more History Studies".
reassert NOTES2 = " but you have completed all these units".
reassert NOTES3 = " Please use option 2 below for alternatives. ***".
endif.
```

all_Conflict:

```
if   DoneUnits = SA430 & SA431
    and INTERESTS = Conflict
then
reassert NOTES1 = "*** You wanted to do more Conflict".
reassert NOTES2 = " but you have completed all these units".
reassert NOTES3 = " Please use option 2 below for alternatives. ***".
endif.
```

all_Asian:

```
if   DoneUnits = SA440 & SA441
    and INTERESTS = Asian
then
reassert NOTES1 = "*** You wanted to do more Asian".
reassert NOTES2 = " but you have completed all these units".
reassert NOTES3 = " so we are recommending alternatives. ***".
endif.
```

```

UrgentPriority diagnosis:
  if
    STAGE = Stage one | Stage two
    or RECOMMEND = SA300
  then
    reassert TIMING = "Urgent and Compulsory".
  endif.
Extension diagnosis:
  if
    SOCEDjssc = 9
  then
    reassert TIMING = "Extension".
  endif.
Specialisation diagnosis:
  if
    SOCEDcmplt ge 12
  then
    reassert TIMING = "Specialisation".
  endif.
Sjssc9 diagnosis:
  if
    SOCEDjssc # 9
    and SOCEDcmplt ge 6
  then
    reassert TIMING = "Important and Compulsory".
  endif.
Year_10 timing:
  if
    StudYear = 10
    and SOCEDjssc # 9
  then
    reassert TIMING = "Urgent and Compulsory".
  endif.

%
demons:

S300 Demon:
\   You have completed four Stage Two units
\   and thus you may start on Stage Three units.
\   But the compulsory unit SA300 (IRR) is only available
\   in first or second term for Year Ten students.
  when
    StudYear = 10
    and DoneUnits # SA300
    and CurrTerm = 1
    or CurrTerm = 2
  then
    RECOMMEND = SA300.
  endwhen.

```

```

%
```

actions:

read "KES-STU-DATA-SA", StudSName, StudFName, StudYear, CurrTerm,
GRADES, GRADES(RESULTS), DoneUnits.

\ *****

\ Interpretation of raw data from student CBASS records.

```
forall G:GRADES do
  while G>RESULTS = N do
    erase G>RESULTS.
    message BANNER.
  message "Our recommendations take into account your previous units and grades".
  message "We already know your past results, but not this term's".
  message "Please enter the grade you reasonably expect for Social education this term".
  askfor G>RESULTS.
  endwhile.
  if G>RESULTS = A
  then G>WeightedResults = Satisfactory <1.00>.
  endif.
  if G>RESULTS = B
  then G>WeightedResults = Satisfactory <1.00>.
  endif.
  if G>RESULTS = C
  then G>WeightedResults = Satisfactory <1.00>.
  endif.
  if G>RESULTS = D
  then G>WeightedResults = Satisfactory <0.05>.
  endif.
  if G>RESULTS = E
  then G>WeightedResults = Unsatisfactory <0.50>.
  endif.
  if G>RESULTS = W
  then G>WeightedResults = Satisfactory <0.05>.
  endif.
endforall.
```

\ Count units satisfactorily completed

```
SOCEDcmplt = 0.
if DoneUnits = No SocEd
then reassert SOCEDcmplt = SOCEDcmplt - 1.
endif.

forall G:GRADES do
  if G> WeightedResults = Satisfactory | Unsatisfactory
  then reassert SOCEDcmplt = SOCEDcmplt + 1.
  endif.
endforall.
```

```
Stage3Results = 0.
Stage4Entry = false.
```

```

if    DoneUnits = SA300
then  and GRADES:SA300 >RESULTS = A | B
      reassert Stage3Results = Stage3Results + 1.
      endif.

if    DoneUnits = SA310
then  and GRADES:SA310 >RESULTS = A | B
      reassert Stage3Results = Stage3Results + 1.
      endif.

if    DoneUnits = SA311
then  and GRADES:SA311 >RESULTS = A | B
      reassert Stage3Results = Stage3Results + 1.
      endif.

if    DoneUnits = SA320
then  and GRADES:SA320 >RESULTS = A | B
      reassert Stage3Results = Stage3Results + 1.
      endif.

if    DoneUnits = SA321
then  and GRADES:SA321 >RESULTS = A | B
      reassert Stage3Results = Stage3Results + 1.
      endif.

if    DoneUnits = SA330
then  and GRADES:SA330 >RESULTS = A | B
      reassert Stage3Results = Stage3Results + 1.
      endif.

if    DoneUnits = SA331
then  and GRADES:SA331 >RESULTS = A | B
      reassert Stage3Results = Stage3Results + 1.
      endif.

if    DoneUnits = SA340
then  and GRADES:SA340 >RESULTS = A | B
      reassert Stage3Results = Stage3Results + 1.
      endif.

if    DoneUnits = SA341
then  and GRADES:SA341 >RESULTS = A | B
      reassert Stage3Results = Stage3Results + 1.
      endif.

if    Stage3Results ge 2
then  reassert Stage4Entry = true.
      endif.

```

\ *****

obtain RECOMMEND.

```

\ *****
\      Screen output.

message BANNER.
message combine ("  Social Education recommendation summary - ", StudFName).
message "Units thus far ", DoneUnits, " ".

\message combine ("cmplt ",SOCEDcmplt, " jssc ", SOCEDjssc).
\message combine ("STAGE ", STAGE," Stage3Results ", Stage3Results,"
\Stage4Entry ", Stage4Entry).

if NOTES1 # " "
then  message NOTES1.
      message NOTES2.
      message NOTES3, " ". endif.

message combine ("We recommend that you consider ", RECOMMEND).

message combine ("This recommendation considers ",TIMING," unit/s.").

\ *****
\      File output.

write "RcmdSA", TIMING, RECOMMEND.

\ *****
\      Termination

if INFO = Justify      then justify RECOMMEND.
                        message HOLD.
                        stop.
                        endif.
if INFO = Again       then nextcase.
                        endif.
if INFO = Continue    then stop.
                        endif.

%
```

\ NEXT-TECHSTUDIES.

constants:

BANNER:

```

"*****",
" ".

```

HOLD:

```

"           Please press c to continue".

```

%

types:

units:mlt

```

(TS110, TS130, TS210, TS211, TS220, TS221, TS222, TS230, TS240, TS310,
TS311, TS321, TS320, TS330, TS340, TSSC1, TSSC2, No Technical Studies,
No_TS).

```

%

attributes:

StudSName:str [default: " "].

StudFName:str [default: " "].

StudYear:int.

CurrTerm:int.

NOTES1:str.

NOTES2:str.

NOTES3:str.

TIMING:str.

STAGE:mlt

```

(Stage one, Stage two, Stage three, Stage four).

```

DoneUnits:units.

TECHSTUDIESjssc:int [default:0].

TECHSTUDIEScmplt:int [default: 0].

RECOMMEND:units.

Initial Interests:sgl

(Woodwork

```

    {question:" Woodwork"},

```

Metalwork

```

    {question:" Metalwork"},

```

Jewellery

```

    {question:" Jewellery"},

```

Drawing

```

    {question:" Mechanical Drawing"},

```

Photography

```

    {question:" Photography"})

```

```

{question: "Which of these Technical Studies units would you prefer next term?"," " }

```

```

{explain: "Our recommendations take in account your preferences as well as your
grades in the pre-requisite units."}.

```

INTERESTS:sgl

```

(Woodwork, Metalwork, Jewellery, Drawing, Photography).

```



```

FEELINGS:sgl
(Really keen, Enjoy it, Its okay, Prefer not, Definitely not)
{question: "What are you feelings towards doing Technical Studies next term?"," "}
{explain: "We only recommend extension units to those students who wish to study
more Technical Studies!"}.

```

```

INFO:sgl
(Justify
  {question: "Explain the recommendation."},
Again
  {question: "Enter new information about your preferences."},
Continue
  {question: "Continue with the next subject area."})
{question: "What would you like to do now?"," "}.

```

```

%
classes:

```

```

GRADES:
attributes:
RESULTS:sgl (A, B, C, D, E, W, N).
WeightedResults:sgl (Satisfactory, Unsatisfactory).
%
endclass.

```

```

%
rules:

```

```

Setup diagnosis:
  if true
  then  NOTES1 = " ".
        NOTES2 = " ".
        NOTES3 = " ".
        TIMING = " ".
  endif.

```

```

\ *****

```

```

Technical Studies_PreferNot response:
  if
  TECHSTUDIESjssc = 2
  and FEELINGS = Prefer not
  then
  RECOMMEND = No_TS <0.50>.
  endif.

```

```

Technical Studies_DefinitelyNot response:
  if
  TECHSTUDIESjssc = 2
  and FEELINGS = Definitely not
  then
  RECOMMEND = No_TS <1.00>.
  endif.

```

Woodwork_keen response:

```
if
  FEELINGS = Really keen
  and Initial Interests = Woodwork
then
  INTERESTS = Woodwork <1.00>.
endif.
```

Woodwork_enjoy response:

```
if
  FEELINGS = Enjoy it
  and Initial Interests = Woodwork
then
  INTERESTS = Woodwork <0.75>.
endif.
```

Woodwork_OK response:

```
if
  FEELINGS = Its okay
  and Initial Interests = Woodwork
then
  INTERESTS = Woodwork <0.30>.
endif.
```

Metalwork_keen response:

```
if
  FEELINGS = Really keen
  and Initial Interests = Metalwork
then
  INTERESTS = Metalwork <1.00>.
endif.
```

Metalwork_Enjoy response:

```
if
  FEELINGS = Enjoy it
  and Initial Interests = Metalwork
then
  INTERESTS = Metalwork <0.75>.
endif.
```

Metalwork_OK response:

```
if
  FEELINGS = Its okay
  and Initial Interests = Metalwork
then
  INTERESTS = Metalwork <0.30>.
endif.
```

Jewellery_keen response:

```
if
  FEELINGS = Really keen
  and Initial Interests = Jewellery
then
  INTERESTS = Jewellery <1.00>.
endif.
```

Jewellery_Enjoy response:

```
if
  FEELINGS = Enjoy it
  and Initial Interests = Jewellery
then
  INTERESTS = Jewellery <0.75>.
endif.
```

Jewellery_OK response:

```
if
  FEELINGS = Its okay
  and Initial Interests = Jewellery
then
  INTERESTS = Jewellery <0.30>.
endif.
```

Drawing_keen response:

```
if
  FEELINGS = Really keen
  and Initial Interests = Drawing
then
  INTERESTS = Drawing <1.00>.
endif.
```

Drawing_Enjoy response:

```
if
  FEELINGS = Enjoy it
  and Initial Interests = Drawing
then
  INTERESTS = Drawing <0.75>.
endif.
```

Drawing_OK response:

```
if
  FEELINGS = Its okay
  and Initial Interests = Drawing
then
  INTERESTS = Drawing <0.30>.
endif.
```

Photography_keen response:

```
if
  FEELINGS = Really keen
  and Initial Interests = Photography
then
  INTERESTS = Photography <1.00>.
endif.
```

Photography_Enjoy response:

```
if
  FEELINGS = Enjoy it
  and Initial Interests = Photography
then
  INTERESTS = Photography <0.75>.
endif.
```

Photography_OK response:

```
if
  FEELINGS = Its okay
  and Initial Interests = Photography
then
  INTERESTS = Photography <0.30>.
endif.
```

```

\ *****
\   Stage One Compulsory units

T110 diagnosis:
\ If a student has not done Tools and Materials TS110
\ then recommend this compulsory unit.
    if
    DoneUnits # TS110
    then
    RECOMMEND = TS110.
    endif.

T130 diagnosis:
\ If a student has not done Graphics and Design TS130
\ then recommend this compulsory unit.
    if
    DoneUnits # TS130
    then
    RECOMMEND = TS130.
    endif.

\ *****
\   Stage Two optional units

T210 diagnosis:
\ If a student is at Stage two
\ and has selected Woodwork
\ and has not done Creative Woodwork
\ then recommend TS210
    if
    STAGE = Stage two
    and INTERESTS = Woodwork
    and DoneUnits # TS210
    then
    RECOMMEND = TS210.
    endif.

T211 diagnosis:
\ If a student is at Stage two
\ and has selected Woodwork
\ and has not done Woodwork 1
\ then recommend TS211
    if
    STAGE = Stage two
    and INTERESTS = Woodwork
    and DoneUnits # TS211
    then
    RECOMMEND = TS211.
    endif.

```

```
T220 diagnosis:
\ If a student is at Stage two
\ and has selected Metalwork
\ and has not done Metalwork 1
\ then recommend TS220
    if
        STAGE = Stage two
        and INTERESTS = Metalwork
        and DoneUnits # TS220
    then
        RECOMMEND = TS220.
    endif.

T221 diagnosis:
\ If a student is at Stage two
\ and has selected Metalwork
\ and has not done Metalwork 2
\ then recommend TS221
    if
        DoneUnits = TS220
        and INTERESTS = Metalwork
        and DoneUnits # TS221
    then
        RECOMMEND = TS221.
    endif.

T222 diagnosis:
\ If a student is at Stage two
\ and has selected Jewellery
\ and has not done Jewellery 1
\ then recommend TS222
    if
        STAGE = Stage two
        and INTERESTS = Jewellery
        and DoneUnits # TS222
    then
        RECOMMEND = TS222.
    endif.

T230 diagnosis:
\ If a student is at Stage two
\ and has selected Drawing
\ and has not done Mechanical Drawing 1
\ then recommend TS230
    if
        STAGE = Stage two
        and INTERESTS = Drawing
        and DoneUnits # TS230
    then
        RECOMMEND = TS230.
    endif.
```

T240 diagnosis:

```
\ If a student is at Stage two
\ and has selected Photography
\ and has not done Photography 1
\ then recommend TS240
    if
    STAGE = Stage two
    and INTERESTS = Photography
    and DoneUnits # TS240
    then
    RECOMMEND = TS240.
    endif.
```

```
\ *****
\      Stage three optional units
```

T310 diagnosis:

```
\ If a student has completed Creative Woodwork 1 (TS210)
\ and has selected Woodwork
\ and has not done Creative Woodwork 2
\ then recommend TS310
    if
    DoneUnits = TS210
    and INTERESTS = Woodwork
    and DoneUnits # TS310
    then
    RECOMMEND = TS310.
    endif.
```

T311 diagnosis:

```
\ If a student has completed Woodwork 1 (TS211)
\ and has selected Woodwork
\ and has not done Woodwork 2
\ then recommend TS311
    if
    DoneUnits = TS211
    and INTERESTS = Woodwork
    and DoneUnits # TS311
    then
    RECOMMEND = TS311.
    endif.
```

T320 diagnosis:

```
\ If a student has completed Metalwork 2 (TS221)
\ and has selected Metalwork
\ and has not done Metalwork 3
\ then recommend TS320
    if
    DoneUnits = TS221
    and INTERESTS = Metalwork
    and DoneUnits # TS320
    then
    RECOMMEND = TS320.
    endif.
```

T321 diagnosis:

```
\ If a student has completed Metalwork 3 (TS320)
\ and has selected Metalwork
\ and has not done Metalwork 4
\ then recommend TS321
  if
    DoneUnits = TS320
    and INTERESTS = Metalwork
    and DoneUnits # TS321
  then
    RECOMMEND = TS321.
  endif.
```

T330 diagnosis:

```
\ If a student has completed Mechanical Drawing 1 (TS230)
\ and has selected Drawing
\ and has not done Mechanical Drawing 2
\ then recommend TS330
  if
    DoneUnits = TS230
    and INTERESTS = Drawing
    and DoneUnits # TS330
  then
    RECOMMEND = TS330.
  endif.
```

T340 diagnosis:

```
\ If a student has completed Photography 1 (TS240)
\ and has selected Drawing
\ and has not done Photography 2
\ then recommend TS340
  if
    DoneUnits = TS240
    and INTERESTS = Photography
    and DoneUnits # TS340
  then
    RECOMMEND = TS340.
  endif.
```

```
\ *****
\      genre termination
```

end_wood:

```
  if
    DoneUnits = TS310 & TS311
    and INTERESTS = Woodwork
  then
    RECOMMEND = No_TS <0.50>.
    reassert NOTES1 = "*** You wanted to do more Woodwork".
    reassert NOTES2 = " but you have completed all available units".
    reassert NOTES3 = " Please use option 2 below for alternatives. ***".
  endif.
```

```

end_metal:
  if
    DoneUnits = TS321
    and INTERESTS = Metalwork
  then
    RECOMMEND = No_TS <0.50>.
    reassert NOTES1 = "*** You wanted to do more Metalwork".
    reassert NOTES2 = " but you have completed all available units".
    reassert NOTES3 = " Please use option 2 below for alternatives. ***".
  endif.

```

```

end_jewellery:
  if
    DoneUnits = TS222
    and INTERESTS = Jewellery
  then
    RECOMMEND = No_TS <0.50>.
    reassert NOTES1 = "*** You wanted to do more Jewellery".
    reassert NOTES2 = " but you have completed all available units".
    reassert NOTES3 = " Please use option 2 below for alternatives. ***".
  endif.

```

```

end_drawing:
  if
    DoneUnits = TS330
    and INTERESTS = Drawing
  then
    RECOMMEND = No_TS <0.50>.
    reassert NOTES1 = "*** You wanted to do more Technical Drawing".
    reassert NOTES2 = " but you have completed all available units".
    reassert NOTES3 = " Please use option 2 below for alternatives. ***".
  endif.

```

```

end_photography:
  if
    DoneUnits = TS340
    and INTERESTS = Photography
  then
    RECOMMEND = No_TS <0.50>.
    reassert NOTES1 = "*** You wanted to do more Photography".
    reassert NOTES2 = " but you have completed all available units".
    reassert NOTES3 = " Please use option 2 below for alternatives. ***".
  endif.

```

```

\ *****
\      Timing messages

```

```

First_8 diagnosis:
  if      TECHSTUDIESjssc lt 1
    and StudYear = 8
  then  reassert TIMING = "Compulsory".
  endif.

```



```

First_9 diagnosis:
  if    TECHSTUDIESjssc lt 1
    and StudYear = 9
  then  reassert TIMING = "Urgent and Compulsory".
endif.

First_10 diagnosis:
  if    TECHSTUDIESjssc lt 1
    and StudYear = 10
  then  reassert TIMING = "Urgent and Compulsory".
endif.

Second_8 diagnosis:
  if    TECHSTUDIESjssc = 1
    and StudYear = 8
  then  reassert TIMING = "Compulsory".
endif.

Second_9 diagnosis:
  if    TECHSTUDIESjssc = 1
    and StudYear = 9
  then  reassert TIMING = "Compulsory".
endif.

Second_10 diagnosis:
  if    TECHSTUDIESjssc = 1
    and StudYear = 10
  then  reassert TIMING = "Urgent and Compulsory".
endif.

Extension diagnosis:
  if    TECHSTUDIEScmplt ge 2
  then  reassert TIMING = "Extension".
endif.

Specialisation diagnosis:
  if    TECHSTUDIEScmplt ge 4
  then  reassert TIMING = "Specialisation".
endif.

%
demons:

Stage1 diagnosis:
  when DoneUnits # TS110 & TS130
  then  erase STAGE.
        STAGE = Stage one.
endwhen.

Stage2 diagnosis:
  when DoneUnits = TS110 & TS130
  then  erase STAGE.
        STAGE = Stage two.
endwhen.

```

```

%
actions:

read "KES-STU-DATA-TS", StudSName, StudFName, StudYear, CurrTerm,
GRADES, GRADES(RERESULTS), DoneUnits.

\ *****

\      Interpretation of raw data from student CBASS records.

forall G:GRADES do
  while G>RESULTS = N do
    erase G>RESULTS.
    message BANNER.
message "Our recommendations take into account your previous units and grades".
message "We already know your past results, but not this term's".
message "Please enter the grade you reasonably expect for Tech Studies this term".
    askfor G>RESULTS.
  endwhile.
    if    G>RESULTS = A
    then  G>WeightedResults = Satisfactory <1.00>.
        endif.
    if    G>RESULTS = B
    then  G>WeightedResults = Satisfactory <0.85>.
        endif.
    if    G>RESULTS = C
    then  G>WeightedResults = Satisfactory <0.50>.
        endif.
    if    G>RESULTS = D
    then  G>WeightedResults = Unsatisfactory <0.25>.
        endif.
    if    G>RESULTS = E
    then  G>WeightedResults = Unsatisfactory <1.00>.
        endif.
    if    G>RESULTS = W
    then  G>WeightedResults = Satisfactory <0.05>.
        endif.
endforall.

\ Count units completed

TECHSTUDIEScmplt = 0.
  if DoneUnits = No Technical Studies
  then reassert TECHSTUDIEScmplt = TECHSTUDIEScmplt - 1.
  endif.

  forall G:GRADES do
    if    G> WeightedResults = Satisfactory | Unsatisfactory
    then  reassert TECHSTUDIEScmplt = TECHSTUDIEScmplt + 1.
        endif.
  endforall.

```

```
TECHSTUDIESjssc = 0.
```

```
  if    DoneUnits = TS110
  then  reassert TECHSTUDIESjssc = TECHSTUDIESjssc + 1.
        endif.
```

```
  if    DoneUnits = TS130
  then  reassert TECHSTUDIESjssc = TECHSTUDIESjssc + 1.
        endif.
```

```
\ *****
```

```
obtain RECOMMEND.
```

```
\ *****
```

```
\      Screen output.
```

```
message BANNER.
message combine ("  Technical Studies recommendation summary - ", StudFName).
message "Units thus far ", DoneUnits, " ".
```

```
if NOTES1 # " "
then  message NOTES1.
      message NOTES2.
      message NOTES3, " ". endif.
```

```
message combine ("We recommend that you apply for ", RECOMMEND).
message " ".
message combine ("This recommendation is for ", TIMING," unit/s.").
```

```
\ *****
```

```
\      File output.
```

```
write "RcmdTS", TIMING, RECOMMEND.
```

```
\ *****
```

```
\      Termination
```

```
if INFO = Justify    then justify RECOMMEND.
                    message HOLD.
                    stop.
                    endif.
if INFO = Again      then nextcase.
                    endif.
if INFO = Continue   then stop.
                    endif.
```

```
%
```