小考#12

- 某科系甄選學生的需求條件如下，請推薦符合需求的學生代號及計算推薦人數：
  - 評價較好(Good)的學校，在校成績只要稍微高一點(somewhat High)就可以
  - 評價一般(Average)的學校，在校成績必須要高(High)才可以
  - 評價不好(not Good)的學校，在校成績必須非常高(very High)才可以
  - 學測的數學級分，必須要高(High)才可以
  - 學測的自然級分，只要稍微高一點(somewhat High)就可以
- 此科系各項成績需求的模糊值如右，事實的定義和資料如下：

```
(deftemplate level
  1 7
  (
    (Good (1 1) (5 0))
    (Average (1 0) (4 1) (7 0))
  )
)

(deftemplate rank
  1 99 Percent
  (
    (High (10 1) (70 0))
  )
)

(deftemplate grade
  1 15
  (
    (High (7 0) (13 0.8) (15 1))
  )
)
```

請推理出符合科系需求的所有學生ID，設定篩選符合程度須至少0.5，結果為

```
FuzzyCLIPS> (set-alpha-value 0.5)
FuzzyCLIPS> (reset)
FuzzyCLIPS> (run)
Recommend Student ?
Recommend Student ?
Recommend Student ?
Recommend Student ?
Recommend Student ?
Total: 5
```

設定篩選符合程度須至少0.8，結果為

```
FuzzyCLIPS> (set-alpha-value 0.8)
FuzzyCLIPS> (reset)
FuzzyCLIPS> (run)
Recommend Student ?
Total: 1
```

```
(deftemplate school
  (slot ID)
  (slot evaluation (type FUZZY-VALUE level))
)
(deftemplate student
  (slot ID)
  (slot school-ID)
  (slot GPA-rank (type FUZZY-VALUE rank))
  (slot math (type FUZZY-VALUE grade))
  (slot nature (type FUZZY-VALUE grade))
)
(deffacts initial
  (total 0)
  (school (ID 1) (evaluation (2 0) (2 1) (2 0)))
  (school (ID 2) (evaluation (4 0) (4 1) (4 0)))
  (school (ID 3) (evaluation (6 0) (6 1) (6 0)))
  (student (ID 1) (school-ID 1) (GPA-rank (58 0) (58 1) (58 0)) (math (14 0) (14 1) (14 0)) (nature (13 0) (13 1) (13 0)))
  (student (ID 2) (school-ID 1) (GPA-rank (51 0) (51 1) (51 0)) (math (11 0) (11 1) (11 0)) (nature (9 0) (9 1) (9 0)))
  (student (ID 3) (school-ID 1) (GPA-rank (40 0) (40 1) (40 0)) (math (13 0) (13 1) (13 0)) (nature (11 0) (11 1) (11 0)))
  (student (ID 4) (school-ID 2) (GPA-rank (47 0) (47 1) (47 0)) (math (11 0) (11 1) (11 0)) (nature (12 0) (12 1) (12 0)))
  (student (ID 5) (school-ID 2) (GPA-rank (39 0) (39 1) (39 0)) (math (12 0) (12 1) (12 0)) (nature (10 0) (10 1) (10 0)))
  (student (ID 6) (school-ID 2) (GPA-rank (20 0) (20 1) (20 0)) (math (13 0) (13 1) (13 0)) (nature (12 0) (12 1) (12 0)))
  (student (ID 7) (school-ID 3) (GPA-rank (12 0) (12 1) (12 0)) (math (15 0) (15 1) (15 0)) (nature (8 0) (8 1) (8 0)))
  (student (ID 8) (school-ID 3) (GPA-rank (21 0) (21 1) (21 0)) (math (12 0) (12 1) (12 0)) (nature (10 0) (10 1) (10 0)))
  (student (ID 9) (school-ID 3) (GPA-rank (33 0) (33 1) (33 0)) (math (12 0) (12 1) (12 0)) (nature (11 0) (11 1) (11 0)))
```

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