

Homework 01

Question 4

for MEG304301

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First Question

1. A certain CS professor gives 100-point exams that are graded on the following scale:

- 90-100: A
- 80-89: B
- 70-79: C
- 60-69: D
- <60: F

Write a program that accepts an exam score as input and uses a decision structure to calculate the corresponding grade.

Code

```
try:
    score = int( input() )
except ValueError:
    print("錯誤！ 原因：請輸入數字。")

if score:
    if score >= 90 and score <= 100:
        grade = 'A'
    elif score >= 80 and score <= 89:
        grade = 'B'
    elif score >= 70 and score <= 79:
        grade = 'C'
    elif score >= 60 and score <= 69:
        grade = 'D'
    elif score < 60:
        grade = 'F'
    else:
        grade = 'Unknow'

print( "你的成績 {} 為 {} 評級".format( score, grade ) )
```

Tests & Results

Input 74

[19]

19

20

print("你的成績 74 為 C 評級")

... 你的成績 74 為 C 評級

Input 98

[1]

20

✓ 1.3s

print("你的成績 98 為 A 評級")

... 你的成績 98 為 A 評級

Input 65

[2]

20

✓ 2.1s

print("你的成績 65 為 D 評級")

... 你的成績 65 為 D 評級

Second Question

2. A certain college classifies students according to credits earned. A student with less than 7 credits is a Freshman. At least 7 credits are required to be a Sophomore, 16 to be a Junior and 26 to be classified as a Senior. Write a program that calculates class standing from the number of credits earned.

Code

```
print("請輸入您的點數(credits)")
try:
    credits = int( input() )
except ValueError:
    print("錯誤！ 原因：請輸入數字")

if credits:
    if credits < 7:
        level = 'Freshman'
    elif credits >= 7 and credits < 16:
        level = 'Sophomore'
    elif credits >= 16 and credits < 26:
        level = 'Junior'
    elif credits >= 26:
        level = 'Senior'
    else:
        level = 'Unknow'
print( "你的點數(credits) {} 為 {}".format(credits, level) )
```

Tests & Result

Input 7

```
[3] 18 | print( "你的點數(credit
... 請輸入您的點數(credits)
    你的點數(credits) 7 為 Sophomore
```

Input 17

```
18 | print("你的點數(credits):")
```

[3] ✓ 1.2s

... 請輸入您的點數(credits)
你的點數(credits) 17 為 Junior

Input 30

```
18 | print("你的點數(credits):")
```

[4] ✓ 0.9s

... 請輸入您的點數(credits)
你的點數(credits) 30 為 Senior

Third Question

3. A babysitter charges \$2.5 an hour until 9:00PM when the rate drops to \$1.75 an hour (the children are in bed). Write a program that accepts a starting time and ending time (in hours and minutes) and calculates the total babysitting bill. You may assume that the starting and ending times are in a single 24-hour period.

Code

```
normal_price = 2.5
rate_drops_price = 1.75
rate_drops_time_hours = 21

try:
    print("請輸入開始時間(時)")
    start_hours = int(input())
    if start_hours > 24: raise ValueError()
    print("請輸入開始時間(分)")
    start_mins = int(input())
    if start_mins > 60: raise ValueError()
```

```

print("請輸入結束時間(時)")
end_hours = int( input() )
if end_hours > 24: raise ValueError()
print("請輸入結束時間(分)")
end_mins = int( input() )
if end_mins > 60: raise ValueError()

# 如果超出1分鐘，則進位1小時
if start_mins > 0: start_hours += 1
if end_mins > 0: end_hours += 1
if start_hours > 24 or end_hours > 24: raise ValueError()
except ValueError:
    print("錯誤！ 原因：請輸入正確格式")

bill = 0
bill += ( end_hours - start_hours ) * normal_price
if end_hours >= rate_drops_time_hours:
    bill -= ( end_hours - max( start_hours, rate_drops_time_hours ) + 1 ) * ( normal_price - rate_drops_price )
print(bill)

```

Tests & Results

Input 2:00 to 23:00

[5]



7.9s

```

... 請輸入開始時間(時)
      請輸入開始時間(分)
      請輸入結束時間(時)
      請輸入結束時間(分)
      50.25

```