

In-Class Question 13

Question)

In this question, you are given a huge dictionary called `courses`. The dictionary contains all HKUST courses in a structure as shown below:

```
courses = {
  "ACCT 1010": {
    "title": "Accounting, Business and Society",
    "unit": "3 Credit(s)",
    "prerequisite": "a passing letter grade in LANG 1401 ... "},
  "ACCT 1610": {
    "title": "Laws in Society and Business",
    "unit": "3 Credit(s)"},
  "ACCT 2010": {
    "title": "Principles of Accounting I",
    "unit": "3 Credit(s)"},
  "ACCT 2200": {
    "title": "Principles of Accounting II",
    "unit": "3 Credit(s)",
    "prerequisite": "(for non-BIBU students) ACCT 2010"},
  ... more courses not shown ...
}
```

Your objective in this question is to find the total number of credits you have obtained from the courses that you have enrolled so far.

Important notes:

- The course list is a dictionary in dictionary structure
- The course code is shown as 'COMP 1021', with a **space in the middle of 'COMP' and '1021'**, in the dictionary
- The credit information for a course is stored in the item **with the key 'unit' in the dictionary of each course**
- The number of credits is always the first character of the credit information of each course

What do you need to put in **SEE_QUESTION** in the following code so that the total number of credits you have obtained so far can be displayed correctly?

```
mycourses = ["COMP 1021", "MATH 1013", "PHYS 1112", "ELEC 1100"]
```

```
total_credits = 0
```

```
for course in mycourses:
```

```
    course_credit = SEE_QUESTION
```

```
    total_credits = total_credits + course_credit
```

```
print("The total number of credits =", total_credits)
```

Correct answer(s):

- `int(courses[course]["unit"][0])`

Explanation:

- For this question, it is about going into the multidimensional data structure and retrieve the correct information
- The `courses` variable is a 2D structure, where a dictionary contains items which are themselves dictionaries
- In the given for loop:

```
for course in mycourses:
```

each course has been retrieved from the list `mycourses`

- Using the course code inside the `course` variable, the information of each course can be obtained by using:

```
courses[course]
```

- The information of each course is by itself another dictionary, such as:

```
{"title": "Accounting, Business and Society",  
 "unit": "3 Credit(s)",  
 "prerequisite": "a passing letter grade in... "}
```

- That means, to obtain the credit information, you need to further get the relevant item, i.e. “unit”, from the dictionary using this code:

```
courses[course]["unit"]
```

- The above code returns the credit information that is needed for the total credit calculation
- However, the credit information is stored as a string like this:

```
"3 Credit(s)"
```

- As the question assumes the number of credits is always in the first character in the string, you can therefore use `[0]` to get the number and then convert it to an integer, i.e.:

```
int(courses[course]["unit"][0])
```