Quiz 5

To get credit for this quiz, use the Quiz tool at eee.uci.edu to enter your answers, within the Sunday-to-Tuesday quiz period.

Problem 1 (8 points)

Fill in the blanks in the function definition below to make it consistent with its header and docstring. Each blank should contain just one identifier, constant, or operator. [Recall that an identifier is just a name: a variable name, a parameter name, a field/attribute name, a function name, a method name.]

```
Dish = namedtuple('Dish', 'name price calories')
Restaurant = namedtuple('Restaurant', 'name cuisine phone menu')

def Restaurant_average_calories (R: Restaurant) -> float:
     ''' Return the average number of calories on the restaurant's menu.
         The menu is a list of Dish structures.
     '''
     return Menu_average_calories(_______________._______________)

def Menu_average_calories(M: 'list of Dish') -> float:
     ''' Return the average number of calories on the menu (a list of Dishes)
     '''
     if len(M) == 0:
         return 0
     else:
         sum = _______________
         for d in _______________ :
             _______________ += _______________.calories
         return _______________ / _______________(M)
```

Problem 2 (16 points)

Suppose we have a list of Student objects similar to those we've seen before:

```
Student = namedtuple('Student', 'ID name level major studylist')
# All are strings except studylist, which is a list of Courses.
# An example showing the form of the data:
s1 = Student('11223344', 'Anteater, Peter', 'FR', 'PSB', [ics31, wr39a, bio97, mgt1])
```

Each Student object contains a list of Course objects defined as follows:

```
Course = namedtuple('Course', 'dept num title instr units')
# All are strings except number of units
# An example showing the form of the data:
ics31 = Course('ICS', '31', 'Intro to Programming', 'Kay', 4)
```

(a) (6 points) Complete the definition of the function below according to the header and docstring shown.

```
# Note:  The annotation [Student] below means the same thing as 'list of Student'
def class_level_count(SB: [Student], class_level: str) -> int:
    '''  Return the number of students in the list SB whose class level matches the
         specified value.    '''
```

(b) (10 points) Complete the definition of the function below according to the header and docstring shown. You may define a second function if it helps you organize your solution.

```
def enrollments_for_instructor(SB: [Student], instructor_name: str) -> int:
    '''  Return the total number of students enrolled in courses taught by named
         instructor.  (If a student is enrolled in two courses taught by the same
         instructor, that student counts twice.)
    '''
```

Problem 3 (6 points)

Below are two code segments; each one generates an execution error whose message is shown. Fix the code as simply as possible to remove the error and produce the intended result.

(a) (3 points)

```
L = ['Huey', 'Dewey', 'Louie', 'Donald', 'Daisy']
for i in range(10):
    print(L[i])

Traceback (most recent call last):
  File "/ICS/31/Quizzes/Quiz Code/quiz5.py", line 3, in <module>
    print(L[i])
IndexError: list index out of range
```

(b) (3 points)

```
Restaurant = namedtuple('Restaurant', 'name cuisine phone dish price')
RESTAURANTS = list of Restaurant objects
def Restaurants_serving_cuisines (RL: [Restaurant], cuisines: [str]) -> [Restaurant]:
    ''' Return a list of Restaurants serving any of the cuisines specified.
    '''
    result = [ ]
    for r in RL:
        if r.cuisine in cuisines:
            result.append(r)
    return r

print("Names of Southeast Asian Restaurants:")
SEAsian_restaurants = Restaurants_serving_cuisines(RESTAURANTS,
                      ['Thai', 'Vietnamese', 'Laotian', 'Cambodian'])
for each_rest in SEAsian_restaurants:
    print(each_rest.name)

Traceback (most recent call last):
  File "/ICS/31/Quizzes/Quiz Code/quiz5.py", line 16, in <module>
    print(each_rest.name)
AttributeError: 'str' object has no attribute 'name'
```