Quiz 2

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 (4 points)

For each of these sequences of statements, what does Python print?

(a)
```
p = [2, 4, 6, 8]
print(p[0] + p[2])
```

(b)
```
Restaurant = namedtuple('Restaurant', 'name cuisine phone dish price')
fancy = Restaurant('Taillevent', 'French', '01-11-22-33-44', 'Escargots', 55.00)
fast = Restaurant("McDonald's", 'Burgers', '334-4433', 'Big Mac', 3.95)
print(fast.name, 'serves', fast.cuisine)
print('True or False:', fancy.price > fast.price)
```

Problem 2 (6 points)

Assume you have the following definitions:

```
a = 5
Animal = namedtuple('Animal', 'name species age weight')
L = ['Tinker', 'Evers', 'Chance']
```

What is the data type of each of the following expressions? Choose from `int`, `float`, `bool`, `str`, `list` of _____ (specify), or `Animal`.

(a) `a * 10`

(b) `3.14159`

(c) `'rhinoceros'`

(d) `12 * (5 + 1)`

(e) `len('Hippopotamus')`

(f) `Animal('Roger', 'rhinoceros', 45, 1500)`

(g) `Animal('Roger', 'rhinoceros', 45, 1500).age`

(h) `[2, 4, 6, 8, 10]`

(i)
```
L
```

(j)
```
L[1]
```

(k)
```
[Animal('Roger', 'rhinoceros', 45, 1500),
 Animal('Harry', 'hippopotamus', 25, 1600),
 Animal('Eloise', 'elephant', 49, 4500)]
```

(l)
```
[Animal('Marvin', 'marmoset', 5, 6).weight,
 Animal('Sally', 'siamang', 25, 15).weight,
 Animal('Lenny', 'lemur', 8, 4).weight,
 Animal('Casper', 'capuchin', 7, 10).weight]
```

Problem 3 (12 points)

The Anteater Grocery Store represents each item in its inventory with:

- a string representing the item's name, e.g., 'Granny Smith Apples 1 lb.'
- a float representing the item's price, e.g., 2.50
- an int representing how many of this item are in stock, e.g., 85

(a) (2 points) Define a namedtuple called `Item` to represent grocery items as described above.

(b) (2 points) Write a statement that assigns to the variable `item1` an Item representing Campbell's Chicken Soup, selling for $1.25 per can, with 250 cans in stock.

(c) (2 points) Write a Python expression for the value of the store's inventory of `item1` (that is, how much money we'd take in if we sold all of that item we have in stock).

(d) (4 points) Suppose we have this list of items:

```
L = [Item('pears', 2.50, 20),
     Item('plums', 3.25, 40),
     Item('oranges', 3.00, 35),
     Item('peaches', 2.50, 40) ]
```

Write a Python expression representing the total value of the inventory of the first and last items on the list. For full credit, your expression should work for a list of any length greater than 1.

(e) (2 points) Fill in the blank with a Python statement that alphabetizes the list `L` of items (so that for the value of `L` in part (d), the print statement below would print `The first item is oranges`. (Your code should work to print the alphabetically first item in `L`, no matter what items `L` contains.)

```
_____________________________
print('The first item is', L[0].name)
```

Problem 4 (5 points)

For each of these sequences of statements, what does Python print?

(a)

```
def triple(n: int) -> int:
    '''  Return three times the parameter
    '''
    return n * 3

print('Four')
print(triple(5))
print('Score')
print(triple(2) + triple(10))
print(triple(3), triple(100))
print(triple(triple(4)))
```

(b)

```
def print_n_copies(n: int, s: str):
    ''' Print specified number of copies of string
    '''
    print(n * s)
    return

print('Heads')
print_n_copies(4, 'Flip')
print('Tails')
```

Problem 5 (4 points)

In this Python code:

```
def double(n: int) -> int:
   ''' Return twice the parameter value '''
   return 2 * n
print(double(13), "should be 26")
```

identify each of the following:

1. function name (in definition)
2. function definition
3. function call (of the function double)
4. argument to a call to double
5. definition of a parameter in double
6. use of a parameter in double
7. return type specification
8. docstring comment ("purpose statement")

(On a paper exam, you could circle portions of the code and draw arrows. Electronically, just copy the list and, after each item, copy the text that applies.)

Problem 6 (8 points)

(a) What are the advantages of dividing our code into functions?

(b) Why is it a good idea to avoid duplicate code in our programs?

Problem 7 (1 point)

Yes or no: You got a score of "check" (3) on a lab assignment. Your roommate, who has a different TA, got a score of "check-plus" (4) and as far as you can tell (by comparing notes *after* submitting your work) your submission was about the same as your roommate's. Should you be worried about your grade in the course because your TA seems to be a harder grader than your roommate's TA?