

COSC 235 Spring 2008: Quiz #3

Please read each question carefully and be sure to give complete answers. Good luck!

1. (1 pt.) What is your name? _____

(2 pts. each/12 pts. total) Object-oriented Programming Matching Questions: Select the best answer for each. Answers *may* be used more than once.

- | | |
|-------------------|---|
| a. accessor(s) | 2. _____ The function <code>__init__()</code> . |
| b. attribute(s) | |
| c. class(es) | 3. _____ The functions used to change variables within an object. |
| d. constructor(s) | |
| e. encapsulation | 4. _____ The variables within a class definition that are associated with an object. |
| f. inheritance | |
| g. instance | 5. _____ Using the same function name for different operations, e.g., “+” for addition and concatenation. |
| h. method(s) | |
| i. mutators(s) | 6. _____ Allows one class to be defined in terms of another class using methods from the original class. |
| j. polymorphism | |
| k. self | 7. _____ Hiding information within a class so that it can only be accessed or changed through a well-defined interface. |
8. (3 pts.) Recall that the random library includes a function `random()` that generates random floating point numbers between 0 and 1. What do you need to do in a program to gain access to `random()`?
9. (12 pts.) Only using the function `random()` from the library `random`, give a command that will generate
- a) a random floating point number between 0.0 and 5.0.
 - b) a random floating point number between -10.0 and 5.0.
 - c) a random integer between 0 and 10 inclusive.
 - d) a random integer between -10 and 10 inclusive.

10. (14 pts.) Use

```
lst = [1, 0, 2, 0, 3, 0, 4, 0, 5, 5, 5, 6]
```

to answer the following. If the operation is not legal, explain why. Each part is independent of the other parts, i.e., assume the same initial value for `lst` for each part.

a) What is returned by this command?

```
lst.index(3)
```

b) What is the value of `lst` after executing this command?

```
lst.pop(1)
```

c) What is the value of `lst` after executing this command?

```
lst.remove(0)
```

d) What is the value of `lst` after executing this command?

```
lst.insert(5, 2)
```

e) Give a command that will return `True` if 6 is in the list and `False` otherwise. (Assume you don't know the answer.)

f) Give a command that determines how many items are in the list.

g) Give a command to change the list so that its contents are in ascending order.

11. (6 pts.) Define a dictionary `grades` to record the following information:

Key	Value
"yi"	1
"er"	2
"san"	3
"si"	4
"wu"	5

12. (8 pts.) Using the dictionary `info`, give commands to

- look up the value corresponding to the key "liu"
- empty the dictionary of all its entries
- get a list of all the keys in the dictionary
- check to see if the dictionary has an entry for the key "shi"

13. (9 pts.) Write a function `mySum()` that return the sum for one, two, or three numbers (without using the builtin `sum()` function). That is, you should be able to call `mySum(6)`, `mySum(3, 3)`, or `mySum(1, 2, 3)` and each time it will return 6

The code on the next page is an incomplete class definition for a class `account` that mimics a bank account. Answer the following questions on the next page using the code provided.

14. (2 pts.) In the appropriate space, add a *docstring* of your choosing to the class.
15. (6 pts.) In the appropriate space, complete the method `withdraw`. It should make sure there are adequate funds and check the password matches. If the transaction succeeds, it should return `True` after making any appropriate changes. If it fails, it should return `False`.
16. (6 pts.) In the appropriate space, complete the method `changePassword`. It should check the `oldpw` against the account's password and change the account's password to `newpw` only if there is a match. If the transaction succeeds, it should return `True`. If it fails, it should return `False`.
17. (8 pts) At the bottom of the page, write the function `transfer()` which moves money from one account to another. The function takes two accounts (source and destination), the amount of the transfer, and the password for the source account. If the transaction succeeds, it should return `True`. If it fails, it should return `False`. Please note, `transfer()` is a function that uses the class, not a part of the class.
18. (12 pts) On this page in the space provide, give code to demonstrate the code.
 - a) Create an instances of `account` called `joe` with an initial deposit of \$1000 and a password `123`.
 - b) Create an account called `jim` with an initial deposit of \$10 and a password `007`.
 - c) Deposit \$100 in Jim's account.
 - d) Display the balance in Jim's account.
 - e) Change Joe's password to `666`.
 - f) Transfer \$25 from Jim's account to Joe's account.

Attached is the code described on the previous page

```
class account:

    def __init__(self, initialDeposit, password):
        self.balance = initialDeposit
        self.__pw = password

    def balance(self, password):
        if password == self.__pw:
            print "Balance is $%.2f." % self.balance
        else:
            print "Transaction Failed"

    def deposit(self, amount): #no password is needed to deposit money
        self.balance = self.balance + amount

    def withdraw(self, amount, password):

        def changePassword(self, oldpw, newpw):

#called with source account, destination account, amount and password
#assumes amount is positive
def transfer(src, dst, amt, pw):
```

Pledged: _____