CS150 - Lab 02

Topics: string formatting

Problem – save as ***lastnameFirstInitial*_Lab2Change.py**
Write a program that simulates a vending machine. A customer selects an item for purchase and inserts money into the vending machine. The vending machine dispenses the purchased item and gives change. Assume that all item prices are multiples of 5 and that the customer will always insert enough money to make the purchase. The machine gives change in dollar coins, quarters, dimes, and nickels. Your task is to compute how many coins of each type to return.

HINT: Think about the process

1. What are the inputs?
    a. Money amount the customer inserts
    b. Price of the purchased item
2. What are the outputs?
    a. How many dollar coins, quarters, dimes, and nickels to be returned (right aligned)
3. Work out examples by hand to understand the process
    a. If you can't figure it out by hand, you most likely won't be able to write a program that automates the process
    b. Assume the customer wants to purchase an item that costs $2.25 and they insert a $5 bill. Change due is $2.75
        i. 2 dollar coins
        ii. 3 quarters
    c. The key is to work in pennies, not dollars. The change due the customer is 275 pennies. Dividing by 100 yields 2, the number of dollars. Dividing the remainder (75) by 25 yields 3, the number of quarters, etc.
4. Write pseudo code for computing the answers.
5. Turn the pseudo code into Python statements
6. See sample run for formatting of output. Use %- or str.format to align appropriately.

Sample Program Runs (user input shown in bold)

```
Enter value of money inserted: 5.00
Enter item price: 0.75
Change: $4.25
     Dollar coin(s):    4
     Quarter(s):        1
     Dime(s):           0
     Nickel(s):         0
```

```
Enter value of money inserted: 10.00
Enter item price: 2.35
Change: $7.65
     Dollar coin(s):    7
     Quarter(s):        2
     Dime(s):           1
     Nickel(s):         1
```

```
Enter value of money inserted: 20.00
Enter item price: 5.10
Change: $14.90
     Dollar coin(s):   14
     Quarter(s):        3
     Dime(s):           1
     Nickel(s):         1
```