02.06 Module Two Project

Name:

Directions

Now that you have an understanding of using functions and operations with numerical and non-numerical data, it's time to show your instructor and yourself what you can do with them! You will use the software development life cycle (SDLC) to create a working program of your choice that will perform calculations with user input. Your program can include any Python skills and functions you have learned up to this point.

This assignment has five steps.

Step One: Planning & Analysis

Read the options carefully and choose **ONE** as the basis of your project.

Option 1 – Wish List

Have your eye on a new gadget? A new game? Maybe some new clothes? Well, now's your chance to create a program that calculates the total cost of three items on your wish list, including tax and shipping.

Follow these steps to begin your planning:

1. Create a wish list by selecting at least three items you want.
2. Do your research. Find the online store(s) where you can purchase your wish list items, and record the price of each one.
3. Think about what user input is required for others to use your program.
4. Think about how you will write an equation to calculate the subtotal of your three items, the tax, and the total purchase cost with tax and shipping. **Note:** Use 6.5% tax and a $5.99 flat-rate shipping fee for your program.
5. The output must include the following: name of each item, item price, subtotal for items, total amount of tax, shipping fee, and total purchase cost with tax and shipping.

Use this table to organize your data:

Item	Price

Option 2 – Let's Eat

Everybody loves eating at restaurants! If you agree, take this opportunity to create a program that will calculate the total cost of a meal that includes an appetizer, entrée, drink, and dessert, with 6.5% tax and a 20% tip.

Follow these steps to begin your planning:

1. List your favorite appetizer, entrée, drink, and dessert.
2. Do your research. Find the menu for your favorite restaurant, and record the prices of your chosen menu items.
3. Think about what user input would be required for others to use your program.
4. Think about how you will write an equation to calculate the subtotal of your meal and the total cost of your meal, plus 6.5% tax and a 20% tip.
5. Your program must output the following: name of appetizer, entrée, drink, and dessert, including prices; subtotal for meal; total amount of tax; total amount of tip; and total cost of the meal with tax and tip.

Use this table to organize your data:

Menu Item	Price

Option 3 – Programmer's Adventure

If you want to journey the road less traveled and create your own program option, go for it! Keep in mind, the goal of your program must be to calculate *something*, using the operations and functions you have learned up to this point. Your program must output the following:

- item names and values
- results of the calculations

Possible Program Options:

- *Mini vacay* – Calculate the total cost of a two-day one-night vacation, including airfare, lodging, and two meals per day
- *Coupon Mania* – Calculate the total percentage of savings on three grocery items with coupons.
- *Stock Supreme* – Calculate the total profit or loss of a stock of your choice over five days for a person who owns 1,000 shares.

Step Two: Design

It's time to design your program by writing pseudocode. Your outline must include the following elements:

- Input statements
    - Ask the user for at least three numeric values.
    - Show proper use of the `int()` and `float()` functions.
- Calculations required to achieve correct output.
    - Use proper order of operations.
    - Use any appropriate math functions.
- Output statements
    - Create clear and well organized output to share the data and results of the calculations.
    - Show proper use of the `str()` function.

Insert your pseudocode here:

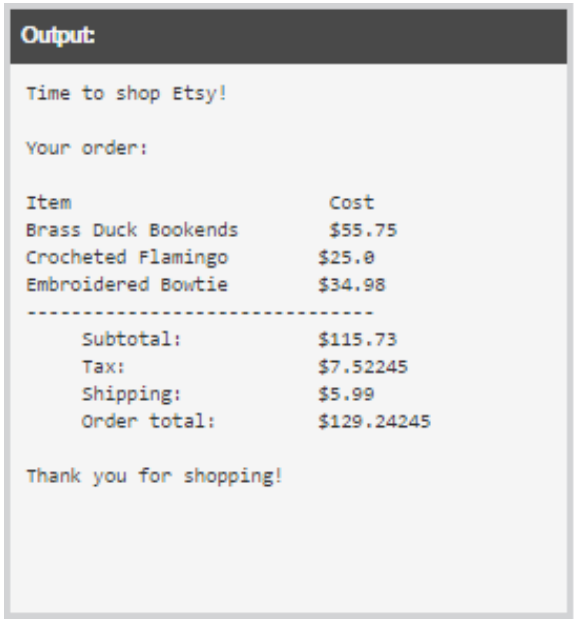
- **Set appetizer_price to the float of input of “Enter the price of the appetizer: ”**
- **Set entree_price to the float of input of “Enter the price of the entree: ”**
- **Set drink_price to the float of input of “Enter the price of the drink: ”**
- **Set dessert_price to the float of input of “Enter the price of the dessert: ”**
- **Set subtotal to appetizer_price + entree_price + drink_price + dessert_price**
- **Set tax to subtotal * 6.5%**
- **Set tip to subtotal * 20%**
- **Set total to subtotal + tip + tax**
- **Print "---- Receipt ----"**
- **Print "Appetizer: appetizer_price"**
- **Print "Entrée: entree_price"**
- **Print "Drink: drink_price"**
- **Print "Dessert: dessert_price"**
- **Print "Subtotal: subtotal"**
- **Print "Tax (6.5%): tax"**
- **Print "Tip (20%): tip"**
- **Print "Total: total"**

Step Three: Coding

Use the following guidelines to code your program:

1. To code the program, use the Python IDLE.
2. Using comments, type a heading that includes your name, today's date, and a short description of the program.
3. Follow the Python style conventions regarding indentation and the use of white space in your program.
4. Use meaningful names for all variables.

Example of expected output: The output for your program should resemble the following screenshot. Your specific results will vary, depending on the choices you make and the input provided.



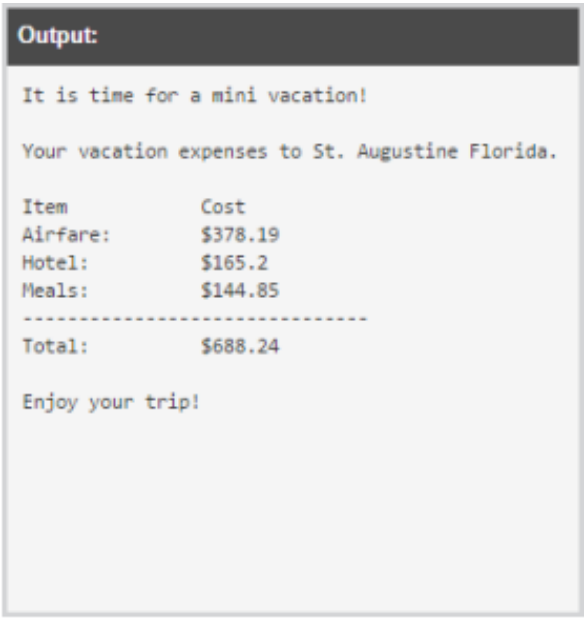
```
Output:

Time to shop Etsy!

Your order:

Item                        Cost
Brass Duck Bookends         $55.75
Crocheted Flamingo          $25.0
Embroidered Bowtie          $34.98
-------------------------------
     Subtotal:              $115.73
     Tax:                   $7.52245
     Shipping:              $5.99
     Order total:           $129.24245

Thank you for shopping!
```



```
Output:

It is time for a mini vacation!

Your vacation expenses to St. Augustine Florida.

Item            Cost
Airfare:        $378.19
Hotel:          $165.2
Meals:          $144.85
-------------------------------
Total:          $688.24

Enjoy your trip!
```

Insert a copy of your code from the IDLE here:

```
#Jonathan Meyer

#10/24/24

# Aprogram to get the price of a set of food along with a tip amount
subtotal and with tax rate



# Get user input for the prices of the items

appetizer_price = float(input("Enter the price of the appetizer: "))
```

```
entree_price = float(input("Enter the price of the entrée: "))

drink_price = float(input("Enter the price of the drink: "))

dessert_price = float(input("Enter the price of the dessert: "))


# Calculate the subtotal

subtotal = appetizer_price + entree_price + drink_price + dessert_price


# Calculate the tax and tip

tax = subtotal * 0.065  # 6.5% tax

tip = subtotal * 0.20   # 20% tip


# Calculate the total cost

total = subtotal + tax + tip


# Output the results

print("\n---- Receipt ----")

print(f"Appetizer: ${appetizer_price:.2f}")

print(f"Entrée: ${entree_price:.2f}")

print(f"Drink: ${drink_price:.2f}")

print(f"Dessert: ${dessert_price:.2f}")

print(f"Subtotal: ${subtotal:.2f}")

print(f"Tax (6.5%): ${tax:.2f}")

print(f"Tip (20%): ${tip:.2f}")

print(f"Total: ${total:.2f}")
```

Step Four: Testing

Run your code, and evaluate the output. Then, answer the following questions in the testing chart. Use two to three meaningful sentences to answer each question.

Testing Question	Response
What bugs did you identify in your code?	I didnt really run into and bugs while writing my program
How did you fix the bugs?	

Step Five: Maintenance

Passionate programmers strive to improve their code! In two to three meaningful sentences, answer the following questions in the maintenance chart to consider the next steps of your program.

Maintenance Question	Response
What design and functionality improvements could you make to your program?	Use less lines for faster execution.
How can you get feedback on ways to improve your program?	Ask people to fill out a survey or google forum
How can you expand your program into a new, better program in the future?	Make a whole menu with a search bar or a filter based on high to low price.
	If then input non values in the program.

What are potential bugs that users may possibly encounter if your program is expanded into a new program in the future?	