Mastery Check 2: Refactoring Taco Truck

Objective: I210 runs a taco truck and some changes need to be made to the existing code. The rationale for the changes are outlined in each section as well as the requested change.

Goal: You are refactoring a working program. You will make changes to enhance the program without breaking it. Please work through the changes in each section and optional bonus changes to update the taco truck program.

Tasks:

Part 1: Editing SETUP (15pts)

- Your supplier is having supply chain issues. Not all of the items were available on the last order.
  - Task: Remove one of the vegetarian options from the veggies list.
- You are trying new menu options. You've decided to add a few new picks to the menu.
  - Task: Add three additional meat options to the meats list.
- You've had feedback that your toppings aren't good. Customers have requested new options.
  - Task: Swap out each of the current toppings with new options.
- Not all customers like toppings on their tacos.
  - Task: Add a 4th option to the toppings list for no toppings.
- You'll probably notice that when you run the code, it gives you a list of all of the items included in your order. You'll need that later on so we went ahead and set it up for you. It is in the setup section, called items_ordered and we append the items to the list in each section.

Part 2: Refactoring Selection Process (15pts)

With the changes you made in Part 1, the number of options in your food lists no longer match the output in your menu choices, 'Choose 1 for …' code. You will need to modify the code to show all of the available options.

- I210 Taco Truck needs to be ready for any supply chain problems that pop up and new specials that are offered. The goal is to only have to change the food list items in the SETUP section and have the rest of the code update automatically. To achieve that, do not hard code the number of options to match your updated food lists, utilize loops and indexing to achieve your goal.
  - Have the output still look like it currently does with Choose 1 for item, Choose 2 for item, etc.
  - Remember, customers have a hard time with Choose 0. So please start the menu with Choose 1 even if that item corresponds to an index position of 0 on the list.
  - Task: Refactor/Change the code in the 'Choose 1 for …' sections for both the proteins and the toppings to be a for loop that iterates through the appropriate food list.

```
Welcome! To I210 Taco Truck! Let's get your order placed.
May I have a name for your order: Hank
Would you like a corn or flour tortilla? corn

Are you vegetarian? (Y / N): Y
        Choose 1 for chili-fried tofu
        Choose 2 for refried beans

Which protein would you like? 1
```

Part 3: Adding Guacamole (15pts)

Our spicy salsa partnership with a farmer at the local farmer's market has been such a hit that customer's have asked us to expand it and add guacamole. Instead of adding it to the toppings list, our partnership requires that we ask every taco order if they want guacamole – same as we do for their spicy salsa.

- Task: Add a section of code to ask every customer if they would like to add guacamole to their taco y/n
- Task: Add the guacamole decision to the order output so the cook knows whether or not to include it on the taco
- Task: append guacamole to the items_ordered list if they order it

```
Would you like guacamole on that? (Y / N): Y

Ok, that's one chili-fried tofu taco on a corn tortilla with shredded cheese, our spicy salsa, and guacamole.
Thank you for your order.
['corn tortilla', 'chili-fried tofu', 'shredded cheese', 'spicy salsa', 'guacamole']
```

Part 4: Including Comments (10pts)

When you step away from your code for a while and come back to it, it can be hard to remember why you wrote code a particular way. If you work with someone else on a coding project, it can be hard to tell their thought process behind why they are writing code in a particular way. If you inherit a coding project from someone else at work, it can be next to impossible to figure out what they were thinking when they wrote it. A very easy way to help with all of this is to use COMMENTS! Comments help us make notes to ourselves. Explain our thought process. Leave explanations to others who might be interpreting our code.

- Task: Go through this coding file and explain what is happening. Leave code telling what different variables are used for. Write code explaining different code blocks. Using comments when coding is a critical skill to develop.
- As you continue this coding project, be sure to include comments with the additional sections as well.

Part 5: Creating Survey Codes (15pts)

Your boss would like to get feedback from customers on their experience in order to improve business practices anywhere customers make note that improvements could be beneficial. You've been asked to generate the survey codes for customers and add them to the Thank You for placing an order statement at the end of each order.

- Output should look something like, "Help the I210 Taco Truck be the best it can be! Text Survey Code ###### to 210-210 to participate."
- You need to randomly generate a number between 100,000 and 999,999 for each order to generate a survey code
- Task: implement survey code text including the random six digit code to display after order

```
Thank you for your order.
Help the I210 Taco Truck be the best it can be!
Text Survey Code 824614 to 210-210 to participate.
['corn tortilla', 'chili-fried tofu', 'shredded cheese', 'spicy salsa', 'guacamole']
```

**Bonus Point Opportunity: Ensure that the random number is between 100,000 and 999,999 inclusive - meaning 999,999 is included as a possible random number (+2pts)

Part 6: Taking Additional Orders (15pts)

Based on feedback we've received, some customers want to order more than one taco. You need to refactor the code to allow for this. (think number guessing game, play again option)

- Once the first taco order is placed but before the customer is thanked for their order, the customer/user should be asked if they want to order another taco.
    - If the user says yes, the code should loop back up to what kind of taco shell, since the order is still for the same customer.

```
Ok, that's one chili-fried tofu taco on a corn tortilla with shredded cheese, our spicy salsa, and guacamole.
Would you like to order anything else (Y/N):Y
Would you like a corn or flour tortilla?
```

    - This should continue until the user says no. At which point, the user should be thanked for their order.

```
Ok, that's one chili-fried tofu taco on a corn tortilla with shredded cheese, our spicy salsa, and guacamole.
Would you like to order anything else (Y/N):N
Thank you for your order.
Help the I210 Taco Truck be the best it can be!
Text Survey Code 8826191 to 210-210 to participate.
['corn tortilla', 'chili-fried tofu', 'shredded cheese', 'spicy salsa', 'guacamole']
```

Part 7: Totaling Items Ordered (15pts)

In order for I210 Taco Truck to know which items are popular, which should be removed from the menu because they aren't ordered frequently, how much product is used and when to reorder, there is an ongoing list of all of the items that are ordered. Each time a product is part of an order, that item is added to a list of items ordered.

- After a customer receives their 'Thank you for your order' message, a separate output should be produced that shows the current item tally of the all of the items that have been ordered.
- First, you'll need to know how many of each item have been ordered (think about how you did something similar in the "Counting Coins" exercise we did in class during Lesson 9)
    - Loop through the list of items ordered
    - If an item is not included in the items tally dictionary, add it with an initial value of 1
    - If an item is included in the items tally dictionary, increase its count by 1
    - Add an output statement to display the items tally dictionary showing which items have been ordered and how many times

```
{'corn tortilla': 2, 'chili-fried tofu': 1, 'shredded cheese': 2, 'spicy salsa': 1, 'guacamole': 3,
 'spicy chicken': 1, 'queso': 1, 'flour tortilla': 1, 'refried beans': 1}
```

Continue reading for Extra Credit options…

Extra Credit Option 1: Tips (5pts)

Under the statement, "Thank you for placing your order", please ask if the user would like to leave a tip with a y/n

- If the user says Yes they would like to leave a tip, ask how much. Be sure to say Thank you for their generosity and support

```
Text Survey Code 538268 to 210-210 to participate.

Would you like to leave a tip (Y / N): Y
How much of a tip would you like to leave? 1.50
Thank you so much for your generosity and support!
```

- If the user says No they would prefer not to leave a tip, be sure to say Thank you and wish them a great day

```
Would you like to leave a tip (Y / N): N
Thank you. Have a great day.
```

Extra Credit Option 2: Additional Toppings (10pts)

Customer feedback has shown that customers would like to have the option of adding more than one topping to their taco.

- Add an option to the list of taco toppings for Multiple Toppings

```
Now choose a topping:
       Choose 1  for multiple toppings
```

- If the user selects Multiple Toppings as their choice, the code should react differently than with the other choices. Remember, though, you want to pull the toppings selected into the final order output statement so that the cook knows what to make
    - Option 1: The code could ask the user to type in their topping choices by name
    - Option 2: The code could allow the user to select one topping at a time asking each time if they want another topping
    - Option 3: The code could perform in another way altogether – use your imagination
- Remember, you want to pull the toppings selected into the final order output statement so that the prep cook knows what to create

Extra Credit Option 3: Pricing (10pts)

It takes a really long time for the taco truck worker to take the order, make the order, serve the order, tally the order total, and process the payment.

I210 Taco Truck is going to institute basic taco pricing to help with this. However, customer hate upcharges, so we want to be pretty clear cut about things.

Pricing specifics:

- All tacos start with a #$2.00 flat fee
- If the user selects a corn tortilla, the taco price goes up by $.50
    - If it is a flour tortilla, there is no upcharge
        - Be sure to update the statement to the user about which taco shell they want explaining the upcharge for corn tortillas so no one gets mad
- If the user selects a vegetarian taco, the taco price goes up by $1.50
- If the user selects a meat-based taco, the taco price goes up by $2.50
        - Be sure to update the vegetarian y/no display to explain a $1 upcharge for meat-based selections so no one gets mad
- There was quite the debate about adding charges for toppings, guacamole and spicy salsa.
    - It was decided that there should be no upcharge for taco toppings
        - That means that if a user selects 'no toppings', the taco price goes down by $0.25
    - If the user selects NO to spicy salsa or guacamole, the taco price should go down by $0.50
- Update the order statement that says what type of taco was ordered with the total price for that taco.

Other considerations:

- Can you have it print with two decimal points every time?
- Can you add up all of the items in one order for a final total?
- Can you add in the tip, if a tip is left?

Assessment / Grading:

100 point assignment

- 15 points for editing SETUP to remove items, add meats and change toppings
- 15 points for refactoring code for selection menu code
- 15 points for adding guacamole question and outputting choice in order
- 10 points for commenting / explaining code
- 15 points for including survey text and randomly generated 6digit codes
- 15 points for taking additional orders and looping until user is done
- 15 points for totaling the items that were included on the order

Maximum score available on the assignment is **110 points** out of a possible 100 points.