Drink Order Program

by Sophia

WHAT'S COVERED

In this lesson, you will learn how to use conditional statements and their outcomes in Python. Specifically, this lesson covers:

1. Planning the Algorithm

The program that we'll build in this lesson will take in drink orders from users. Users will be able to choose different types of options based on the drink that they select. Let's take a look at the basic menu given to us by the company that has requested the program, as these are the choices that they offer.

Water
    Hot
    Cold
        Ice/No Ice
Coffee
    Decaffeinated or Not?
    Milk or Cream or None
    Sugar or None
Tea
    Green
    Black

In looking at these options, the user should first be prompted with the choice of water, coffee, or tea. Based on those selections, there are additional prompts that are unique to each one. As the user enters each option, a string should be built to indicate the entire order to be output at the end.

THINK ABOUT IT

Before we get into any coding, look at the selections again. Can you envision which questions we need to ask the user? Based on the user's input, what conditionals do you think we will need? What outputs are you expecting the user to see? Given the input, what should happen next?

All these questions help formulate the algorithm for this program.

TRY IT

Directions: We covered pseudocode in a previous lesson. Pseudocode comprises the English-like statements that describe the steps in a program or algorithm. Try writing down the steps you believe will be needed to make this program successful.

BIG IDEA

For the final project in Unit 4, you will identify a problem that you would like to address through a program. Now is a great time to start “flexing” your algorithm step-building muscles.

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2. Writing the Code

Given the structure of the drink selection items, we will have a series of conditional statements that we’ll need to use to build the output string. The first step is to think about the initial check of the types of drinks.

TRY IT

Directions: Let’s enter the following code that initially checks the drink types. As you enter the code, feel free to add any comments you wish to help you better understand what is happening. Note: we are using the escape character with the new line character “\n”. Remember that the escape character allows us to write a single line that will present as multiple lines in the output since the \n adds a new line after each use of \n.

```
drinkDetails=""
drink = input('What type of drink would you like to order?\nWater\nCoffee\nTea\nEnter your choice: ')
if drink == "Water":
  drinkDetails=drink
elif drink == "Coffee":
  drinkDetails=drink
elif drink == "Tea":
  drinkDetails=drink
else:
  print("Sorry, we did not have that drink available for you.")
print("Your drink selection: ",drinkDetails)
```

Directions: Great! Now let’s go ahead and run the code. Try running a few options.

```
What type of drink would you like to order?
Water
Coffee
Tea
Enter your choice: Water
Your drink selection:  Water
```

Now we’ll need to break down the options for each drink selection. We’ll start with the water selection. We’ll need to prompt the user to determine if they want to have hot or cold water.

TRY IT

Directions: Enter the following code inside the water conditional. Take note that in the water conditional, we are assigning the variable `drinkDetails` as Water. Then, after the input of Hot or Cold, we concatenate that response on the output string

using the concatenate char +. Remember, concatenation is the operation of joining or merging two or more strings together. And we are also using the += operator to add two values together and assign that final value to the variable.

```
drinkDetails=""
drink = input('What type of drink would you like to order?\nWater\nCoffee\nTea\nEnter your choice: ')
if drink == "Water":
    drinkDetails=drink
    temperature = input("Would you like your water? Hot or Cold: ")
    if temperature == "Hot":
        drinkDetails += ", " + temperature
    elif temperature == "Cold":
        drinkDetails += ", " + temperature
    else:
        drinkDetails += ", unknown temperature entered."
elif drink == "Coffee":
    drinkDetails=drink
elif drink == "Tea":
    drinkDetails=drink
else:
    print("Sorry, we did not have that drink available for you.")
print("Your drink selection: ",drinkDetails)
```

We can test both options of hot and cold water, as well as an incorrect option.

TRY IT

Directions: Go ahead and run the program, testing each option.

```
What type of drink would you like to order?
Water
Coffee
Tea
Enter your choice: Water
Would you like your water? Hot or Cold: Hot
Your drink selection:  Water, Hot

What type of drink would you like to order?
Water
Coffee
Tea
Enter your choice: Water
Would you like your water? Hot or Cold: Cold
Your drink selection:  Water, Cold

What type of drink would you like to order?
Water
Coffee
```

```
Tea
Enter your choice: Water
Would you like your water? Hot or Cold: Medium
Your drink selection:  Water, unknown temperature entered.
```

Did you get the same outputs? We tried Medium as the water temperature, and of course, received the unknown temperature output.

The next step would be if the user selected cold water, whether they would like ice.

TRY IT

Directions: Go ahead and add the code to determine if the user wants ice added to their cold water. Now we will concatenate that decision onto the `drinkDetails` variable.

```
drinkDetails=""
drink = input('What type of drink would you like to order?\nWater\nCoffee\nTea\nEnter your choice: ')
if drink == "Water":
    drinkDetails=drink
    temperature = input("Would you like your water? Hot or Cold: ")
    if temperature == "Hot":
        drinkDetails += ", " + temperature
    elif temperature == "Cold":
        drinkDetails += ", " + temperature
        ice = input("Would you like ice? Yes or No: ")
        if ice == "Yes":
            drinkDetails += ", Ice"
    else:
        drinkDetails += ", unknown temperature entered."
elif drink == "Coffee":
    drinkDetails=drink
elif drink == "Tea":
    drinkDetails=drink
else:
    print("Sorry, we did not have that drink available for you.")
print("Your drink selection: ",drinkDetails)
```

Directions: Go ahead and run the program again, testing each water option.

```
What type of drink would you like to order?
Water
Coffee
Tea
Enter your choice: Water
Would you like your water? Hot or Cold: Cold
Would you like ice? Yes or No: Yes
Your drink selection:  Water, Cold, Ice
```

Notice that we don't have to worry about the check if the selection is no ice, because we don't have to include that as part of the items to add. If we did want to include it, we can use the elif to check if the response is a No or not.

Since the tea selection is the easiest next option, we can now fill that part out for the selection of the green or black tea.

TRY IT

Directions: Now add the code to determine if the user wants green or black tea with a Tea drink choice decision.

```
drinkDetails=""
drink = input('What type of drink would you like to order?\nWater\nCoffee\nTea\nEnter your choice: ')
if drink == "Water":
    drinkDetails=drink
    temperature = input("Would you like your water? Hot or Cold: ")
    if temperature == "Hot":
        drinkDetails += ", " + temperature
    elif temperature == "Cold":
        drinkDetails += ", " + temperature
        ice = input("Would you like ice? Yes or No: ")
        if ice == "Yes":
            drinkDetails += ", Ice"
    else:
        drinkDetails += ", unknown temperature entered."
elif drink == "Coffee":
    drinkDetails=drink
elif drink == "Tea":
    drinkDetails=drink
    teaType = input("What type of tea would you like? Black or Green: ")
    if teaType == "Black":
        drinkDetails += ", " + teaType
    elif teaType == "Green":
        drinkDetails += ", " + teaType
else:
    print("Sorry, we did not have that drink available for you.")
print("Your drink selection: ",drinkDetails)
```

Directions: Go ahead and run the program again, testing the Tea drink options.

```
What type of drink would you like to order?
Water
Coffee
Tea
Enter your choice: Tea
What type of tea would you like? Black or Green: Green
Your drink selection:  Tea, Green
```

That was the only criteria that we had to set up for the tea. With the coffee option, we have three separate parts, but they are very similar to one another.

TRY IT

Directions: Finally, let's add the code for the sub-options for coffee.

```
drinkDetails=""
drink = input('What type of drink would you like to order?\nWater\nCoffee\nTea\nEnter your choice: ')
if drink == "Water":
    drinkDetails=drink
    temperature = input("Would you like your water? Hot or Cold: ")
    if temperature == "Hot":
        drinkDetails += ", " + temperature
    elif temperature == "Cold":
        drinkDetails += ", " + temperature
        ice = input("Would you like ice? Yes or No: ")
        if ice == "Yes":
            drinkDetails += ", Ice"
    else:
        drinkDetails += ", unknown temperature entered."
elif drink == "Coffee":
    drinkDetails=drink
    decaf = input("Would you like decaf? Yes or No: ")
    if decaf == "Yes":
        drinkDetails += ", Decaf"
    milkCream = input("Would you like Milk, Cream or None: ")
    if milkCream == "Milk":
        drinkDetails += ", Milk"
    elif milkCream == "Cream":
        drinkDetails += ", Cream"
    sugar = input("Would you like sugar? Yes or No: ")
    if sugar == "Yes":
        drinkDetails += ", Sugar"
elif drink == "Tea":
    drinkDetails=drink
    teaType = input("What type of tea would you like? Black or Green: ")
    if teaType == "Black":
        drinkDetails += ", " + teaType
    elif teaType == "Green":
        drinkDetails += ", " + teaType
else:
    print("Sorry, we did not have that drink available for you.")
print("Your drink selection: ",drinkDetails)
```

It's a good idea to test out each of the cases, but we'll just test one here.

```
What type of drink would you like to order?
Water
Coffee
Tea
Enter your choice: Coffee
```

```
Would you like decaf? Yes or No: Yes
Would you like Milk, Cream or None: Milk
Would you like sugar? Yes or No: Yes
Your drink selection:  Coffee, Decaf, Milk, Sugar
```

TRY IT

Directions: Go ahead and run the program and test out all the Coffee drink options.

Although this concludes the program that we have here, there are some underlying issues with this type of code. One of the issues is that the program becomes very difficult to read, as it gets larger and contains many branches. We'll look at cleaning this up when it comes to creating more complex functions later. Additionally, if an incorrect input is entered at any point, we're not prompting the user to enter in a value a second time (or even a third). To help with this, we'll make use of loops, which we will begin to talk about in the next unit.

TRY IT

Directions: This program is finished to this point and consists of more conditional statements than anything you've seen previously. This would be a good program to get a better understanding of the debugger tool. Try adding breakpoints at certain lines of code to "walk" yourself through the execution path. See what invalid input errors you get. Have fun!

To see the final version of this program visit **Sophia's Python code page**

SUMMARY

In this lesson, we were given a project request from a company to build a drink order program. We first looked at the drink order options and did some preliminary **algorithm planning**. Based on the drink options, we required a number of conditional statements to move through the options. We were able to **write the code** for a program that, when executed, would provide the user with some input choices and output of their final selection.

Best of luck in your learning!