Part 1 - Theory and Understanding
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## 1. What would the variable `aSlice` contain once the following Python code fragment has executed?
```
city = "Cranbrook"
aSlice = city[:5]
```

- A. "Cranbr"
- B. "Cranb"
- C. "" (empty string)
- D. An error message
- E. None of the above.

## 2. What would the variable `found` contain once the following Python code fragment has executed?
```
city = "Cranbrook"
found = city.find("k")
```

- A. 8
- B. -1
- C. 9
- D. An error message
- E. None of the above.

## 3. What does the following Python code fragment produce?
```
numbers = list(range(10))
aSlice = numbers[:8:2]
print(aSlice)
```

- A. [] (i.e., an empty list)
- B. [0, 2, 4, 6, 8]
- C. [0, 2, 4, 6]
- D. An error message
- E. None of the above

## 4. What does the following Python code fragment produce?
```
grades = ['B', 'A', 'D']
print(grades[3])
```

- A. ['B', 'A', 'D']
- B. ['B', 'A']
- C. [] (i.e., an empty list)
- D. An error message
- E. None of the above
Consider the following Python code fragment and answer the following 2 questions:

```python
mystery = 0
someNumbers = [9, 8, 7, 6, 5, 4, 3, 2, 1]
for digit in someNumbers:
    if digit % 2 == 0:
        mystery += digit
    print("digit is {}.".format(digit))
print("And so far, mystery is %d." %mystery)
print("Final mystery is ", mystery)
```

5. Once the Python code fragment above has executed, what is the content of the variable `mystery`?

   - A. 0 (zero)
   - B. [2, 4, 6, 8]
   - C. 5
   - D. 20
   - E. None of the above

6. What is the content of the variable `digit` during the 4th iteration of the `for` loop?

   - A. 0 (zero)
   - B. [2, 4, 6, 8]
   - C. 5
   - D. 20
   - E. None of the above
Consider the following Python code fragment and answer the following 2 questions:

```python
aNumber = 9
if condition_1 :
    print("A", (aNumber % 4) )
else :
    print("B")
    if condition_2 :
        print("D")
        if condition_3 and not condition_4 :
            aNumber = 2
        else:
            aNumber = 3
        print("E")
    elif condition_5 :
        print("F")
    else:
        aNumber = 4
    print("G")
print(aNumber)
```
## Part 1 - Theory and Understanding

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<th>Question</th>
<th>True Conditions</th>
<th>False Conditions</th>
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<tr>
<td>7. What does the above Python code fragment produce when all conditions are True?</td>
<td>A. B G 4</td>
<td>A. B G 4</td>
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<tr>
<td></td>
<td>B. B D E G 3</td>
<td>B. B D E G 3</td>
</tr>
<tr>
<td></td>
<td>C. A 1 9</td>
<td>C. A 1 9</td>
</tr>
<tr>
<td></td>
<td>D. B F G 9</td>
<td>D. B F G 9</td>
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<td></td>
<td>E. None of the above</td>
<td>E. None of the above</td>
</tr>
<tr>
<td>8. What does the above Python code fragment produce when all conditions are False?</td>
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</table>
Part 2 – Coding
We will be going over the solutions in class on Monday, June 3 - Lecture 12
Problem Statement:
Write an **Predicting Chatbot** that asks your name and your age and lets you know how many characters your name has, how many ‘e’ and/or ‘E’ it contains, and predicts how old you will be in 13 years, as shown in the sample input/output below:

```
Please, enter your name: Evelynne
Please, enter your age: 36

Dear Evelynne:
Your name has 8 characters.
There are 3 letter(s) 'e' and/or 'E' in your name.
In 13 years, you will be 49 years old.
Bye!
```

You can assume the user will always enter the proper answers, i.e. a string for the name and an integer for the age.
Problem Statement:
Write a **Milk Survey Bot** that asks the user whether s/he has tried almond, coconut, cow, goat, hemp, oat, rice, and/or soy milk.

Your **Milk Survey Bot** must then print the number of different kinds of milk the user has tried.

Here is a sample run:

```bash
How many different types of milk have you tried?
For example, have you tried ...
... almond milk? (y/n): y
... coconut milk? (y/n): n
... cow milk? (y/n): y
... goat milk? (y/n): y
... hemp milk? (y/n): n
... oat milk? (y/n): y
... rice milk? (y/n): n
... soy milk? (y/n): y
Wow! You have tried 5 different kinds of milk (out of 8).
```
BONUS Part 1:
Write your Python code such that it does not include the actual number 8 in its last print statement `print("Wow! You ... (out of 8).")` Instead, your program figures this number by calling a function.

How many different types of milk have you tried?
For example, have you tried ...
... almond milk? (y/n): y
... coconut milk? (y/n): n
... cow milk? (y/n): y
... goat milk? (y/n): y
... hemp milk? (y/n): n
... oat milk? (y/n): y
... rice milk? (y/n): n
... soy milk? (y/n): y
Wow! You have tried 5 different kinds of milk (out of 8).
Question 10 (cont’d)

BONUS Part 2:
After your **Milk Survey Bot** has printed the number of different kinds of milk the user has tried, it then prints the names of the milks the user has tried.

**Hint:** This printing must be done after (outside) the loop.

Here is a sample run with the BONUS part:

```
How many different types of milk have you tried?
For example, have you tried ...
... almond milk? (y/n): y
... coconut milk? (y/n): n
... cow milk? (y/n): y
... goat milk? (y/n): y
... hemp milk? (y/n): n
... oat milk? (y/n): y
... rice milk? (y/n): n
... soy milk? (y/n): y
Wow! You have tried 5 different kinds of milk (out of 8).
BONUS PART - You tried:
almond
cow
goat
oat
soy
```