Our in-class activity #2 is worth 1%.
This time around, you get ...
• 0.5% if you wrote a solution (partial or complete) to Q. 10
• 0.5% if your (partial or complete) solution does not repeat code
In-Class Activity

• Our in-class activity #2 -> 1%
  • Write your answer to Q. ___ on the provided sheet of paper
  • Write your lastname, firstname and student number on the provided sheet of paper
  • At the end of today’s class, hand in your sheet of paper in the appropriate pile:
    • Pile 1 -> if your lastname start with a letter that is between ‘A’ and ‘L’
      • Pile 1 is on your left-hand side of the classroom
    • Pile 2 -> if your lastname start with a letter that is between ‘M’ to letter ‘Z’
      • Pile 2 is on your right-hand side of the classroom
• IMPORTANT: For in-class activity #2, you must write at least a partial solution to get some marks. A header common block with some comments will not be sufficient!

Course grading scheme on our course website: Best 7 in-class exercises out of 10: 1% each, for a total of 7%
Part 1 - Theory and Understanding

Try to answer the questions 1st without using your computer, then confirm your answer using Python IDLE shell!
1. a) What does `range(6)` produce?
   
   `[0, 1, 2, 3, 4, 5]`

   b) What does `range(3,8)` produce?
   
   `[3, 4, 5, 6, 7]`

   c) What does `range(-4,9,3)` produce?
   
   `[-4, -1, 2, 5, 8]`

   d) What does `range(,7,2)` produce?
   
   `SyntaxError: invalid syntax`
Part 1 - Theory and Understanding

2. a) Write a Python statement which would produce the sequence \(0, 2, 4, 6\)

\[
\text{range}(0, 7, 2)
\]

b) Write a Python statement which would produce the sequence \(9, 6, 3, 0, -3\)

\[
\text{range}(9, -4, -3)
\]
3. What is wrong with this Python code fragment?

```python
# Chatbot asks How old are you?
age = input("How old are you? ")
    int( )
# If the user is old enough to drink ...
if age >= 19 :
    # Chatbot suggest an alcoholic drink.
    print("How about a beer?")
else :
    # Otherwise, a non-alcoholic drink.
    print("How about a Shirley Temple?")
```

Note the usefulness of the comments!
Part 1 - Theory and Understanding

4. a) What does the following code fragment print?

```python
for item in ["0", "1", "2"]:   
    print(item)
```

b) What does the following code fragment print?

```python
name = "Ted Lasso"
for letter in name:
    print(letter.upper())
```
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(f"digit is {digit}.")
print(f"And so far, mystery is {mystery}.")
print(f"Final mystery is {mystery}.")
```

<table>
<thead>
<tr>
<th>5. Once the Python code fragment above has executed, what is the content of the variable <code>mystery</code>?</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. 0 (zero)</td>
</tr>
<tr>
<td>B. [2, 4, 6, 8]</td>
</tr>
<tr>
<td>C. 5</td>
</tr>
<tr>
<td>D. 20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6. What is the content of the variable <code>digit</code> during the 4th iteration of the for loop?</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. 0 (zero)</td>
</tr>
<tr>
<td>B. [2, 4, 6, 8]</td>
</tr>
<tr>
<td>C. 5</td>
</tr>
<tr>
<td>D. 20</td>
</tr>
</tbody>
</table>
Consider the following Python code fragment and answer the following 2 questions located on the next slide:

```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)
```
7. What does the Python code fragment produce when all conditions are True?

A. B
   G
   4
B. B
   D
   E
   G
   3
C. A 1
   9
D. B
   F
   G
   9
E. None of the above

8. What does the Python code fragment produce when all conditions are False?

A. B
   G
   4
B. B
   D
   E
   G
   3
C. A 1
   9
D. B
   F
   G
   9
E. None of the above
Part 2 - Coding

Solve the following problems by writing a Python program on a piece of paper without using your computer!
Question 9

Problem Statement:
Write a New Years Bot that counts down from 10 to 1.

Requirements:
- It must use a for loop and each number should be on a new line.
- At the end of the countdown, it must output Happy new year!

Here is a sample output (or sample run):

```
10
9
8
7
6
5
4
3
2
1
Happy new year!
```
# Possible Answer to Q.9

```python
# New_Years_Bot.py
#
# Description: Write a New Years Bot that counts down from 10 to 1.
# Requirements: It must use a for loop and each number should be on a new line.
#               At the end of the countdown, it must output Happy new year!
#
# Anne Lavergne
# Date: Jan. 2024
#
# Needs module time for the sleep function
import time

# Start the countdown from 10 seconds down to 1 second
for count in range(10, 0, -1):
    # Print a countdown from 10 seconds down to 1 second
    print(count)
    # Wait a second!
    time.sleep(1)

# Print Happy new year!
print("Happy new year!")
```
Question 10

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.

Requirement:
• Do not repeat the same code over and over!

Here is a sample run:

```plaintext
How many different types of milk have you tried?
For example, have you tried ...
... almond milk? (y/n): n
... coconut milk? (y/n): y
... cow milk? (y/n): n
... goat milk? (y/n): y
... hemp milk? (y/n): y
... oat milk? (y/n): y
... rice milk? (y/n): n
... soy milk? (y/n): y
```
Possible Answer to Q.10

```python
# MilkSurveyBot.py

# Description: Milk Survey Bot that asks the user whether s/he has tried almond, coconut, cow, goat, hemp, oat, rice, and/or soy milk.

# Author: AL
# Date: Jan. 2024

# Create a list of all types of milk
milks = ["almond", "coconut", "cow", "goat", "hemp", "oat", "rice", "soy"]

# Print the question to the user
print("How many different types of milk have you tried?")
print("For example, have you tried ...")

# Display one type of milk at a time ...
for eachMilkType in milks:
    # ... and read the user's answer
    answer = input("... " + eachMilkType + " milk? (y/n): ")
```