

# CMPT 120

Lecture 10 – Practice Exam 2

# In-Class Activity

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

- 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!

Try to answer the questions **1<sup>st</sup> without using your computer**, then confirm your answer using **Python IDLE shell**!

# Part 1 - Theory and Understanding

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1. a) What does `range(6)` produce?

b) What does `range(3, 8)` produce?

c) What does `range(-4, 9, 3)` produce?

d) What does `range(, 7, 2)` produce?

# Part 1 - Theory and Understanding

2. a) Write a Python statement which would produce the sequence **0, 2, 4, 6**
- b) Write a Python statement which would produce the sequence **9, 6, 3, 0, -3**

# Part 1 - Theory and Understanding

3. What is wrong with this Python code fragment?

```
# Chatbot asks How old are you?
age = input("How old are you? ")

# 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?

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

b) What does the following code fragment print?

```
name = "Ted Lasso"  
for letter in name:  
    print(letter.upper())
```

# Part 1 - Theory and Understanding

Consider the following Python code fragment and answer the following 2 questions:

```
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}.")
```

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 4<sup>th</sup> iteration of the `for` loop?

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



# Part 1 - Theory and Understanding

Consider the following Python code fragment and answer the following 2 questions located on the next slide:

```
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

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

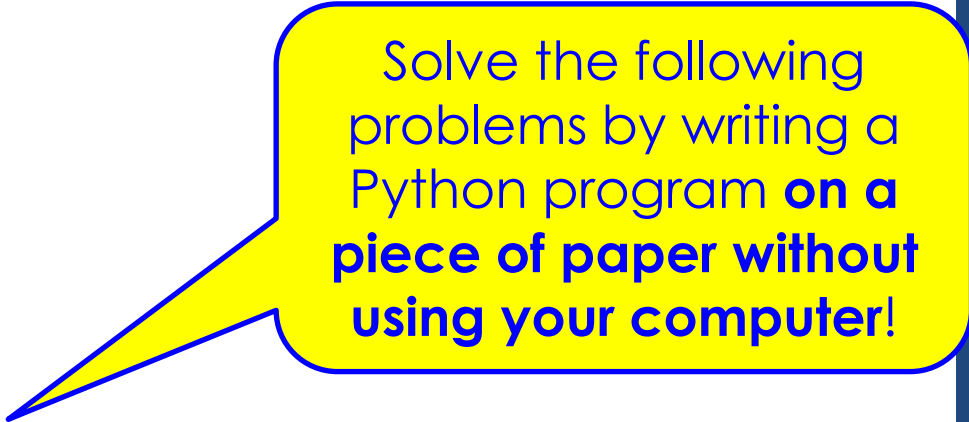
D. B

F

G

9

E. None of the above



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

# Part 2 - Coding

# 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!
```

# 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:

```
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
```