CMPT 120

Lecture 7 – Practice Exam 1

Why having a Practice Exam?

- Great chance for us …
  - To practise some more! Yay!
  - To hone our software development skills
  - To ascertain what we understand of the material so far and what is not yet clear
  - To become familiar with:
    - Types and format of questions asked in CMPT 120 exams
    - Writing code on paper (like in our exams)
  - To work in teams
  - And to ask all our questions!
- Our first in-class activity -> 1%
  - Write your answer to **Q. 10** on the provided sheet of paper and hand it in at the end of today's class.

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

Theory and Understanding

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

Consider the following Python code fragment and answer **Question 1** and **Question 2** below:

```
num = int(input("Enter an integer: "))
if (num < 10):
   print("The number is 1 digit long.")
else:
   if (num < 100):
      print("The number is 2 digit long.")
   else:
      print("The number has more than 2 digits.")
```

1. For which entered `int` values will the code fragment above print "`The number is 2 digit long.`"?

a. Any `int` value >= -9 and <= 9
b. Any `int` value <= -99
c. The `int` value 0
d. Any `int` value >= 10 and <= 99
e. None of the above

2. For which entered `int` values will the code fragment above produce a semantic error?

a. 56
b. -10
c. 0
d. 256
e. None of the above

Question 3

What does the following code fragment print?

```
print("!.?blah".strip("!.h"))
```

Question 4

Fill in the blank lines with the correct answer:

1. `"23" < "19"` evaluates to _____
2. `"100" < "19"` evaluates to _____

Make sure you understand how characters are compared.

Question 5

What does the following code fragment print?

```
pico = "pico"
paco = "paco"
poco = "poco"
if pico+paco in ["pico", "paco", "pico paco"]:
    print("It's there!")
else:
    print("Not it isn't!")
```

Question 6

Consider the following code fragment:

```
isHappy = False
response = input("How are you today? ").lower()
if response in ["good", "great", "awesome"]:
    isHappy = True
print(isHappy)
```

What would its complete output be if the user inputs **`I feel good`** when asked the question **`How are you today?`** ?

Question 7

- What string function should we use to replace all occurrences of “8” in a string with “9”?
- For example:

```
myString = "8kajsfg8jkge88,jbe8"
```

would become

```
myNewString = "9kajsfg9jkge99,jbe9"
```

- Note that the online textbook we are asked to read calls *string functions* *string methods*.

Question 8

- What could be wrong with this code?

```
if reply.lower().strip(" ") == "GOOD"
   print("Good!")
```

Question 9

- What does this code fragment output on the computer monitor screen?

```
movies = ["Superman", "Frozen", "X-Men"]
print("X-men" in movies)
```

Coding

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

Question 10

Problem Statement:

Write a Python program that asks the user for a string made of letters.

Let's assume that the user is well-behaved and does enter a string made of letters.

Your program must then print this string in four different ways:

1. Your program must print the string as the user entered it (i.e., simply echo the string)
2. Your program must print an "all upper case" version of the string
3. Your program must print an "all lower case" version of the string
4. Your program must print a "capitalized" version of the string where only its first letter is in upper case and the rest of the string is in lower case letters
5. Finally, your program must print the number of times "e" (or "E") is found in the original string

Requirements:

- Make sure your program satisfies the Good Programming Style (GPS) described on our course web site.

Question 11

Problem Statement:

Write a **Star Wars Bot** that decides if you can be on the Dark side or the Light side.

To be on the Dark side you need to like capes or the color red. Otherwise the bot will recommend you to the Light side.

Requirements:

- Your bot must be robust to upper/lowercase answers of yes and no.

Here are 5 sample runs:

```
I will decide if you can join the Dark Side.
Is red your favourite color? yes
Do you like capes? yes
Dark side it is!
```

```
I will decide if you can join the Dark Side.
Is red your favourite color? yes
Do you like capes? no
Dark side it is!
```

```
I will decide if you can join the Dark Side.
Is red your favourite color? NO
Do you like capes? YES
Dark side it is!
```

```
I will decide if you can join the Dark Side.
Is red your favourite color? no
Do you like capes? no
Light side, I see.
```

```
I will decide if you can join the Dark Side.
Is red your favourite color? asdf
Do you like capes? asdf
Light side, I see.
```

Solution to Practice Exam 1

- Will be posted on our Canvas web site after this lecture.
- Go over the solution to this Practice Exam 1 and make sure you understand everything.
- If not, ask questions during our office hours!

- Do not wait until the end of the semester to ask questions!
- Clarify what you do not understand now!