**Alexander College – CPSC 100**



**Python**

**Estimated Time for Completion: 6 hours**

By completing the information below, the student indicates that the work was done only by this student without help from outside sources not approved by the instructor to maximize student learning.

If the student has any questions, contact the instructor: [k.cheung@alexandercollege.ca](mailto:k.cheung@alexandercollege.ca). Start early to ensure your work is submitted on time.

Student Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Student Number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Learning Goals:**

* Write simple programs in Python.

1. (8 marks) Write a program that asks for the length and width of a rectangle (then you enter your last 3 digits of your student number for length and the last 4 digits of your student number for width). The program determines the area of the rectangle using the information provided and displays it to the user in a nice sentence (“If the length is X and the width is y, the area of the rectangle is Z”).

* Take a screenshot of the output.

Program:

Screenshot:

2. (8 marks) Write a program then asks how many minutes to convert to seconds (then you enter the last 4 digits of your student number). The program determines how many seconds this is and displays it to the user in a nice sentence (“2 minutes is 120 seconds”).

* Take a screenshot of the output.

Program:

Take a screenshot:

3. (8 marks) Write a program that asks the user to enter his\her first name. Then, it asks the user to enter their last name.

* If the first name is the same as your first name, display “Your first name is the same as mine!”.
* If the last name is the same as your last name, display “Your last name is the same as mine!”.
* If both the first and last name matches yours, instead display “Your name is the same as my name!”.

Run the program three times showing all three different situations and take screenshots.

Program:

Screenshots:

4. (8 marks) Write a program that asks the user to enter a natural number (then enter the last 3 digits of your student number). The program determines the factorial displays it to the user in a nice sentence (“The factorial of 4 is 24”).

Factorial:

n! = n \* (n-1) \* … \* 1

4! = 4\*3\*2\*1 = 24

3! = 3\*2\*1 = 6

2! = 2\*1 = 2

1! = 1

0! = 1

Program:

Screenshots:

**Conclusion**

1. (1 mark) Summarize what you did in the lab.

2. (1 mark) What did you learn in the lab that surprised you?

3. (1 mark) What challenged you in the lab? How did you meet that challenge?

4. (1 mark) How much time did you spend on the lab? What would you do differently if you would do this lab again?