**CMPR 114**

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Objectives:

* Using the while and for loops
* **There are 5 challenge exercises, each worth 20%**

Please submit this document for grading when completed… Please work in-groups.

This lab class exercise is based on Chapter 4 Loops.

**CONCEPT**: A repetition structure causes a statement or set of statements to execute repeatedly.

**Project #1** (here is a program that will ask to enter the sales with commission 3x, without a loop)

Text

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**CONCEPT**: A condition-controlled loop causes a statement or set of statements to repeat if a condition is true. In Python, you use the while statement to write a condition-controlled loop.

**Project #2** (Here is the same program but using the while loop)

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**Project #3** (using the while loop for temp)

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**Challenge Exercise #1:** create a program with a **while** loop, that will ask the user to enter 4 sets of temps under 102.5 and then get the sum and average of the four temps when the user enter a temp over 102.5

Data set test: enter 60, 70, 80 and 90

**#1 print screen the output with code below here.**

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**Project #4** (example of an infinite loop), a loop that never stops

Text, letter

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**Challenge Exercise #2:** create a program with a **while** loop, that will ask the user to enter the sales with commission four times, and on the 4th, time will sum the sales and commission.

**#2 print screen the output with code below here.**

**Text

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**Screen output**

**Shape, rectangle

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**CONCEPT**: A count-controlled loop iterates a specific number of times. In Python, you use the for statement to write a count-controlled loop.

**Project #5** (using the for loop to print 1-5)

A picture containing graphical user interface

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**Challenge Exercise #3:** continuing with project #5, print odd and even number to a maximum of 10

**#3 print screen the outputs with code below here.**

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**Project #6 (**Looping strings)

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**Challenge Exercise #4:** continuing from project #6, delete the names in the array and add your first and last name using a parallel for loops (use two for loops). The first for loop will loop through your last name, and the second for loop will print your first name. See example below.

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**#4 print screen the outputs with code below here.**

**Code**

A = ['Winken', 'Blinken', 'Nod']

print(A)

# Delete the names in the array

A.clear()

# Add first name and last name

firstname = str(input("\nEnter your first name: "))

lastname = str(input("Enter your last name: "))

# Using a parallel for loops. The first for loop will loop through last name and

# the second for loop will print first name. Example: Your full name is Sim Jason

print('Your full name is ', end ="")

for i in range(len(lastname)):

print(lastname[i], end ="")

print(end = " ")

for j in range(len(firstname)):

print(firstname[j], end="")

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**Project #7 (**Looping through a range of #’s)

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**Challenge Exercise #5:** Continuing with project #7, display the hello world message 10x

**#5 print screen the outputs with code below here.**

**Code**

# This program demonstrates how the range function can be used with a for loop.

# Print a message ten times (10x)

for x in range(10):

print('Hello world')

Graphical user interface, text

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**Project #8 (**Looping and getting the square root of a number)

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**Submit this document to Module 3 class exercise.**