**Programming Lab using Loops and IF Logic**

1. A bug collector collects bugs every day for five days. Write a program that keeps a running total of the number of bugs collected for 5 days. The loop should ask for the number of bugs collected each day and when the loop is finished, the program should display the total number of bugs collected.

**Code for bug collector program**

# Initialize variables for bugs and

# total number of bugs collected.

bugs = 0

total = 0

# Get number of bugs collected each day

for day in range(5):

bugs = int(input('Enter the number of bugs collected today: '))

total += bugs

# Display the total number of bugs collected.

print ('Total bugs collected: ', total)

1. Variation of bug collector program: modify the program to get user input for the number of days for which bugs were collected.
2. Running on a treadmill you burn 4.2 calories per minute. Write a program that uses a loop to display the number of calories burned after 10, 15, 20, 25 and 30 minutes
3. At one college, the tuition for a full-time student is 30,000 per year. It has been announced that the tuition will increase by 3% each year for the next 5 years. Write a program with a loop that displays the projected tuition amount for the next 5 years.

**Using IF Logic**

1. Write a program that asks the user to enter a person’s age. The program should display a message indicating whether the person is an infant, child, a teenager, or an adult using the following guidelines

* A person 1 year or less is an infant
* A person older than 1 year but less than 13 is a child
* A person at least 13 but less than 20, is a teenager
* A person at least 20 or older is an adult

**Using a While loop and IF logic**

1. Write a program that asks the user to enter the amount that he or she has budgeted for a month. A While loop should then prompt the user to enter each of his or her expenses for the month and keep a running total. When the loop finishes, the program should display the amount that the user is over or under budget.
2. Modify this program to keep track of how many times the user has entered the wrong number. If it is more than 3 times, print “This must have been complicated” at the end. Otherwise print “Good Job”

*# Plays the guessing game higher or lower*

*# This should actually be something that is semi random like the*

*# last digits of the time or something else, but that will have to*

*# wait till a later lab. (Extra Credit, modify it to be random*

*# after the Modules lab)*

number = 7

guess = -1

**print**("Guess the number!")

**while** guess != number:

guess = int(input("Is it... "))

**if** guess == number:

**print**("Hooray! You guessed it right!")

**elif** guess < number:

**print**("It's bigger...")

**elif** guess > number:

**print**("It's not so big.")