## Lab 4 – Debugging

The purpose of this lab is to practice debugging skills by fixing a broken program.

## Problem Description

You are given a program without any information on what it is supposed to do. It doesn't run. You need to determine what the program is supposed to do and fix it.

## What to Do

1. Fix the program so that it works correctly.

2. Provide appropriate comments throughout the code. Be sure to explain what the program is doing.

3. Refactor (edit) the code so that it is clear and readable.

## Useful information:

The if statement in Python allows for the execution of selective code. This means a programmer can decide to execute code (or not) based on some condition. Here is how it works:

```
if <expression>:    #if is a keyword and the ':' is required
     statement1
     statement2
     ...
```

The meaning is that if the expression evaluates to True, then the statements will execute. If the expression evaluations to False, the statements do not execute.

Note that the statements to be executed in the body of the if structure must be indented over to indicate they are part of the if structure.

An extension of the if is the if-elif-else structure:

```
if <expression1>:
     statement1
     statement2
     ...
elif <expression2>:
     statement1
     statement2
     ...
else:
     statement1
     statement2
     ...
```

The meaning is that if expression1 evaluates to False, expression2 will be evaluated. If expression2 is True, then do the elif clause. If neither expression is True, the else clause will execute. You can have as many elif clauses as you like and Python will evaluate them in order, and if an expression is True, it stops looking at the others and skips the rest of the structure.

## Submission

Submit your 'fixed' code, as a .py file, through Canvas by end of lab today (Sept. 12, 2024).