**Discussion 1**

The following Pseudocode read in 10 students’ scores and calculate the average.

Initialize student\_counter to zero

While student\_counter is less than or equal to ten

Input the next score

Add the score into the total

EndWhile

Set the class average to the total divided by ten

There are some errors in the above Pseudocode. Please indicate where the errors are and how to correct them.

**Discussion 2**

Fill in the blanks to complete the following Pseudocode to read in 10 students’ scores and calculate the number of passes and failures.

Initialize passes to zero

Initialize failures to zero

Initialize student\_counter to one

While student\_counter is less than or equal to ten

Input the next score

add one to student\_counter

EndWhile

**Discussion 3**

Write the FizzBuzz algorithm using pseudocode.

FizzBuzz is a standard interview problem. The Problem state:

* Write a code that prints each number from 1 to 20 on a new line.
* Print “Fizz” if the number is the multiple of 3.
* Print “Buzz” if the number is multiple of 5
* For number which is multiple of both 3 and 5 print “FizzBuzz”

The ***sample run*** is as follows:

1

2

Fizz

4

Buzz

Fizz

7

8

Fizz

Buzz

11

Fizz

13

14

FizzBuzz

16

17

Fizz

19

Buzz

**Discussion 4**

For each of the following, discuss what the outcome will be if they are executed by a Python interpreter (e.g.IDLE3) in the sequence shown.

**c = 10**

**7 = a**

**a = d**

**a = c + 1**

**a + c = c**

**3 + a**

**7up = 10**

**import = 1003**

**b = math.pi \* c**

**int = 500**

**a \*\* 3**

**a,b,c = c,1,a**

**b,c,a = a,b**

**c = b = a = 7**

**print( A )**

**print( "b\*b + a\*a = c\*c" )**

**print( ‘A’ )**

**print( "c" = 1 )**

**Discussion 5**

Write a program that asks the user for the number of boys and that of girls in a class. The program should calculate and display the percentage of boys and girls in the class. A sample run is as follows:

**Enter the number of boys: 65**

**Enter the number of girls: 77**

**Boys: 46%**

**Girls: 54%**

1. Design the algorithm and use flowchart to present.
2. Write the Python program. *(optional)*

**Discussion 6**

Imagine you are a travel agency staff member. You have a list of attractions your tourists must visit, and you know roughly how long it takes to travel between each place. You want to plan a route that starts at the hotel, visits each attraction once, and returns to the hotel — while keeping travel time as short as possible.

A screenshot of a computer

Description automatically generated

Propose a solution to the above problem and describe it using pseudocode. You do **NOT** need to find the absolute best route — a good enough route that is logical and easy to follow will do. There is **NO** need to consider data structure details; assume that the distance matrix has already been created.