You will turn in 1 file for this assignment: a file containing your python code.  Your python code will be in a text file with the extension **.py** if you create it in Idle, you may need to rename it to **.txt** in order to submit it.

At the top of your source code file include this comment with your student name and student number filled in. Failure to include this statement can result in a penalty up to 100%.

**# I student\_name, student\_number, certify that this work is my own effort and that I have not allowed anyone else to copy from it.**

Late assignments will be penalized 25% for up to 1 day, 50% for up to 2 days, and 100% thereafter.

Question 1:

Implement the following flowchart into a module called “checkGuess” that accepts 2 integer parameters guess and secret.

Diagram

Description automatically generated

Question 2:

In the same file as your checkGuess module create a main routine that implements the following pseudocode.

**Note:**In order to generate a random number you can add “import random” as the first line in your Python file and then use the code random.randint( start, finish ) where start and finish are integers for the inclusive bounds of your range.  For example to get a number between 1 and 20 inclusive you would write **random.randint(1,20)**.  To calculate the length of a string you can use the len() function.  **len(“hello”)** will return 5.

GET username FROM keyboard  
SET score = 0  
CALCULATE a secret number using the formula length of username \* a random integer [1,5]  
SET guesses = 0  
SHOW “Hello ” username “ welcome to the guessing game.”  
  
LOOP  
                SET remaining = 3 - guesses  
                SHOW “You have “ remaining “ guesses left”  
                SHOW “What is your guess?”  
                GET guess FROM keyboard  
                SET guesses = guesses + 1  
                CALL checkGuess WITH secret number and guess  
                SET result TO return value of checkGuess call  
                IF result IS 0 THEN  
                                IF guesses IS 1 THEN  
                                                SHOW “Amazing! On your first guess!  
                                                SET score = score + 10  
                                ELSE  
                                                IF guesses IS 2  
                                                                SHOW “Excellent!  On your second guess!”  
                                                                SET score = score + 5  
                                                ELSE  
                                                                SHOW “Lucky! On your last guess!”  
                                                                SET score = score + 1  
                                                ENDIF  
                                ENDIF  
                                EXIT LOOP  
                ELSE  
                                IF result IS 1 THEN  
                                                SHOW “Your guess, “ guess “, was too low!  
                                ELSE  
                                                SHOW “Your guess, “ guess “, was too high!”  
                                ENDIF  
                ENDIF  
                IF guesses IS 3 THEN  
                               EXIT LOOP  
                ENDIF  
END LOOP  
  
SHOW “Thank you for playing, “ username “, your score was “ score “points.”

A sample program that prints a random number would be a file with these lines in it:

import random  
print( random.randint(1,10) )

| Assignment 3 |
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| Assignment 3 | | |
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| **Criteria** | **Ratings** | **Pts** |
| This criterion is linked to a Learning Outcome1. Function declaration  (name/params/syntax) | |  |  | | --- | --- | | **2 pts**  **Full Marks** | **0 pts**  **No Marks** | | 2 pts |
| This criterion is linked to a Learning Outcome1. Assumptions  2 of them | |  |  | | --- | --- | | **2 pts**  **Full Marks** | **0 pts**  **No Marks** | | 2 pts |
| This criterion is linked to a Learning Outcome1.Logic for result  3 conditions | |  |  |  |  | | --- | --- | --- | --- | | **9 pts**  **Full Marks** | **6 pts**  **2 only** | **3 pts**  **1 only** | **0 pts**  **No Marks** | | 9 pts |
| This criterion is linked to a Learning Outcome1.Return | |  |  | | --- | --- | | **1 pts**  **Full Marks** | **0 pts**  **No Marks** | | 1 pts |
| This criterion is linked to a Learning Outcome2.Random  import + equation | |  |  | | --- | --- | | **1 pts**  **Full Marks** | **0 pts**  **No Marks** | | 1 pts |
| This criterion is linked to a Learning Outcome2.Assumptions  Assume user enters an integer for guess | |  |  | | --- | --- | | **1 pts**  **Full Marks** | **0 pts**  **No Marks** | | 1 pts |
| This criterion is linked to a Learning Outcome2.Input  +correct prompt | |  |  | | --- | --- | | **2 pts**  **Full Marks** | **0 pts**  **No Marks** | | 2 pts |
| This criterion is linked to a Learning Outcome2.Initializations  score = 0 guesses = 0 | |  |  | | --- | --- | | **2 pts**  **Full Marks** | **0 pts**  **No Marks** | | 2 pts |
| This criterion is linked to a Learning Outcome2.User greeting | |  |  | | --- | --- | | **2 pts**  **Full Marks** | **0 pts**  **No Marks** | | 2 pts |
| This criterion is linked to a Learning Outcome2.Loop control | |  |  | | --- | --- | | **3 pts**  **Full Marks** | **0 pts**  **No Marks** | | 3 pts |
| This criterion is linked to a Learning Outcome2. Calculate + display remaining | |  |  | | --- | --- | | **3 pts**  **Full Marks** | **0 pts**  **No Marks** | | 3 pts |
| This criterion is linked to a Learning Outcome2.Prompt for guess & update guesses count | |  |  | | --- | --- | | **3 pts**  **Full Marks** | **0 pts**  **No Marks** | | 3 pts |
| This criterion is linked to a Learning Outcome2.Function call | |  |  | | --- | --- | | **2 pts**  **Full Marks** | **0 pts**  **No Marks** | | 2 pts |
| This criterion is linked to a Learning Outcome2.6 conditions | |  |  |  |  | | --- | --- | --- | --- | | **6 pts**  **Full Marks** | **4 pts**  **Missing 1 or 2** | **2 pts**  **Missing 3** | **0 pts**  **No Marks** | | 6 pts |
| This criterion is linked to a Learning Outcome2.Score update | |  |  | | --- | --- | | **3 pts**  **Full Marks** | **0 pts**  **No Marks** | | 3 pts |
| This criterion is linked to a Learning Outcome2.Correct guess output messages | |  |  | | --- | --- | | **3 pts**  **Full Marks** | **0 pts**  **No Marks** | | 3 pts |
| This criterion is linked to a Learning Outcome2.Wrong guesses output messages | |  |  | | --- | --- | | **4 pts**  **Full Marks** | **0 pts**  **No Marks** | | 4 pts |
| This criterion is linked to a Learning Outcome2.End of game output message | |  |  | | --- | --- | | **1 pts**  **Full Marks** | **0 pts**  **No Marks** | | 1 pts |
| Total Points: 50 | | |