This assignment is based on Exercise 7.1 from your textbook.

**Part 1**

Encapsulate the following Python code from Section 7.5 in a function named my\_sqrt that takes a as a parameter, chooses a starting value for x, and returns an estimate of the square root of a.

while True:  
     y = (x + a/x) / 2.0  
     if y == x:  
          break  
     x = y

**Part 2**

Write a function named test\_sqrt that prints a table like the following using a while loop, where "diff" is the absolute value of the difference between my\_sqrt(a) and math.sqrt(a).

a = 1 | my\_sqrt(a) = 1 | math.sqrt(a) = 1.0 | diff = 0.0  
a = 2 | my\_sqrt(a) = 1.41421356237 | math.sqrt(a) = 1.41421356237 | diff = 2.22044604925e-16  
a = 3 | my\_sqrt(a) = 1.73205080757 | math.sqrt(a) = 1.73205080757 | diff = 0.0  
a = 4 | my\_sqrt(a) = 2.0 | math.sqrt(a) = 2.0 | diff = 0.0  
a = 5 | my\_sqrt(a) = 2.2360679775 | math.sqrt(a) = 2.2360679775 | diff = 0.0  
a = 6 | my\_sqrt(a) = 2.44948974278 | math.sqrt(a) = 2.44948974278 | diff = 0.0  
a = 7 | my\_sqrt(a) = 2.64575131106 | math.sqrt(a) = 2.64575131106 | diff = 0.0  
a = 8 | my\_sqrt(a) = 2.82842712475 | math.sqrt(a) = 2.82842712475 | diff = 4.4408920985e-16  
a = 9 | my\_sqrt(a) = 3.0 | math.sqrt(a) = 3.0 | diff = 0.0

Modify your program so that it outputs lines for a values from 1 to 25 instead of just 1 to 9.

You should submit a script file and a plain text output file (.txt) that contains the test output. Multiple file uploads are permitted.

Your submission will be assessed using the following Aspects.

1. Does the submission include a my\_sqrt function that takes a single argument and includes the while loop from the instructions?
2. Does the my\_sqrt function initialize x and return its final value?
3. Does the test\_sqrt function print a values from 1 to 25?
4. Does the test\_sqrt function print the values returned by my\_sqrt for each value of a?
5. Does the test\_sqrt function print correct values from math.sqrt for each value of a?
6. Does the test\_sqrt function print the absolute value of the differences between my\_sqrt and math.sqrt for each value of a?
7. Does the my\_sqrt function compute values that are almost identical to math.sqrt ("diff" less than 1e-14)?