Sheet 11 (File)

1) Write a Java program that does the following:

a. It generates a random integer number

b. Repeatedly asks the user to enter a number.

i. If the user enters the generated number, then a message saying “Congratulations” should be displayed.

ii. If the user enters another number then if the entered number is smaller than the generated number, then a message saying “Please, guess a larger number” should be displayed, otherwise a message saying “Please, guess a smaller number” should be displayed.

c. Finally, it requests the username and writes onto a text file “GuessReport.txt” the name of the user and the number of user attempts.

2) **Create a JAVA application having:**

A pure abstract class with name “***Analyzable***” having three methods named as “getAverage”, “getHighest”, and “getLowest”. (note: all methods with no input parameters).

a class named as “***Test***” inherits the above class and has:

* an integer array of size 100.
* a default Constructor which randomly initializes the above array with numbers within the range from 0 to 100.
* a Constructor which receives a positive integer number (𝑛) and randomly initializes the above array with numbers within the range from 0 to 𝑛.
* a void method with name “*Save”* which receives the name of a text file as an input parameter and store in this file the average, maximum, and minimum of the above array.

Then, write a program to test the above class and store the average, maximum, and minimum values of randomly generated numbers into a file with name “*Helwan\_Report.txt*”.