Assignment – Hi-Lo Game

Introduction

In this assignment, you will develop a program that plays a Hi-Lo game . This program illustrates the use of flow control, random number generator, and functions (or methods) . The objective of the game is to guess a randomly generated secret number between 1 and 100 inclusive. The program will respond with **HI** if the guess is higher than the secret number and **LO** if the guess is lower than the secret number. The maximum number of guesses allowed is six. (If we allow up to seven, one can always guess the secret number. Do you know why?) The user can play as many games as he/she wants before the program terminates.

At the beginning, your program should ask the user to input a seed number, which is used for initializing the random number generator. If the seed number is negative, the number can be ignored and the computer time is used instead to initialize the generator. If the seed number is non-negative, the number is used for initialization.

Then your program should ask whether the user wants to start a game. A game would start if he/she inputs the character **Y** or **y**. Any other input would terminate the program. After playing one game, the program should ask the user again whether he/she wants to start another game. This process repeats until the user responds with any input other than **Y** and **y**.

Every time the game is played, the first task is to randomly generate a secret number between 1 and 100 inclusive. The second task is to repeatedly accept the user's guess and respond to him/her with a **HI** or **LO**. At the end of one game, you need to display either (1) a losing message if the user fails to guess the secret number after 6 tries, or (2) the number of tries otherwise.

Since your program generates random numbers, if the computer time is used as the seed of the random number generator, the program should produce different output in different runs, even if you enter the same input in every run.

Program Output

The following shows some sample program output. The **bold black** text is the system prompt; the **bold blue** text is user input; and the other text is the program output. You can try the provided sample program for other input values. Due to the randomness of the secret number, if the computer time is used as the random seed, your program output may be different from the sample output even for the same user input. However, *if the user inputs a positive random seed, your program output should still be exactly the same as the sample output*, i.e., same sentences, same letter case, same punctuations, same number of spaces, etc. Otherwise, it is considered as *wrong* output, even though your program's logic is correct.

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C:\>hilo
Enter a seed number (If less than 0, time will be used as seed): 10
Do you want to play a Hi-Lo game (Y or N)? n
 C:\>hilo
Enter a seed number (If less than 0, time will be used as seed): -32
Do you want to play a Hi-Lo game (Y or N)? Y
Next Guess (1-100): 64
Your guess is HI.
Next Guess (1-63): 77
Invalid Input: Must be between 1 and 63.
Next Guess (1-63): -2
Invalid Input: Must be between 1 and 63.
Next Guess (1-63): 1
Your guess is LO.
Next Guess (2-63): 22
Your guess is LO.
Next Guess (23-63): 42
You guessed it in 4 tries.
Do you want to play a Hi-Lo game (Y or N)? y
Next Guess (1-100): 51
Your guess is LO.
Next Guess (52-100): 76
Your guess is HI.
Next Guess (52-75): 76
Invalid Input: Must be between 52 and 75.
Next Guess (52-75): 64
Your guess is LO.
Next Guess (65-75): 70
Your guess is HI.
Next Guess (65-69): 67
Your guess is LO.
Next Guess (68-69): 69
Your guess is HI.
You lost. Secret No. was 68.
Do you want to play a Hi-Lo game (Y or N)? q

C:\>hilo
Enter a seed number (If less than 0, time will be used as seed): 10326
Do you want to play a Hi-Lo game (Y or N)? Y
Next Guess (1-100): 91
You guessed it in 1 tries.
Do you want to play a Hi-Lo game (Y or N)? X
 C:\>
```

以上是程序的基本功能，请在此基础上改进，具体要求如下：

1、在eclipse下运行。

2、保证程序的健壮性，如输入非数字，要提示输入错误等等。