The Higher Lower Game

Higher Lower is a game where the computer generates a random integer between 0 and 99. The player will then guess which number the computer generated.

After each guess, the computer informs the player if the random number is higher or lower than the previous guess. When the player guesses the correct number, the game congratulates the player and presents how many guesses it took:

```
 .: THE HIGHER LOWER GAME :.
---------------------------
Welcome to The Higher Lower
Game. I  will  randomize  a
number between  0  and  99.
Can you guess it?
---------------------------
Your guess > 50
HIGHER!
Try again > 75
LOWER!
Try again > 60
---------------------------
60 is correct!
It took you 3 guesses.
Good job!
```

In this assignment, you will create this game using Python.

Common errors to avoid

The program is not behaving according to instructions
If you are unsure how the program should work. Check the simlet in Canvas.

The guess count is incorrect
Make sure that the program counts each guess correctly. Four "inputs" from the user is four guesses.

The random number changes incorrectly
The random number should only be generated once (at the start of the program). Make sure that it is not changed after that. Some students tend to generate a new random number between each guess, which is incorrect.

The generated number is hard coded (and not "random")
Do not "hard code" the random number to the source. Instead, generate it with `randint(a, b)` from the `random` module.

Mathlete

Create a program in which the user enters multiple numbers. There should be no limit to how many numbers can be submitted but the program should close whenever the user types in the string "exit".

Before exiting, the program will present information regarding the numbers entered by the user:

- In total, how many numbers where entered (cardinality)?
- What was the sum?
- What was the mean value?

If the user does not enter a valid number or "exit", an error message should be printed. After the error message is printed, the user should be able to enter more numbers.

```
.: MATHLETE v2.0 :.
-------------------
> 30
> forty
ERROR: Invalid number
> 40
> 60
> 70
> exit
-------------------
Cardinality: 4
Sum:         200
Mean value:  50.0
```

Common errors to avoid

The program is not behaving according to instructions
If you are unsure how the program should work. Check the simlet in Canvas.

The calculations are wrong
There is no excuse to not verify that your program calculates correctly. Do not know how to verify? Enter a bunch of numbers into your program. Enter the same numbers to the simlet. Make sure the results match.

Invalid implementation of error handling
Whenever the user types in an invalid number (which is not "exit"), an error message should be printed. After the error message is printed, the user should be able to enter more numbers. We recommend that you implement error handling with `try/except`.

An "invalid number" error message is printed when the users submit "exit"
When the user types "exit" the program should close. No error should be printed. There are different ways to fix this issue. The easiest is check if the user submitted "exit" (if so `break`) before doing the int-conversion.