Assignment 3 [Branching and Looping]

1. Guess a number game

The computer picks a random number from 1 to 5, the player tries to guess. The player may have the flexibility to enter the number in an expression format.

2. Kids Multiplication Table

Write a multiplication game program for kids. The program should give the player ten randomly generated multiplication questions to do. After each, the program should tell them whether they got it right or wrong and what the correct answer is.

Sample Output:

```
Question 1: 3 x 4 = 12
Right!
Question 2: 8 x 6 = 44
Wrong.  The answer is 48.
...
...
Question 10: 7 x 7 = 49
Right.
```

3. Check a list contains even number or not

numbers = [11,33,55,39,55,75,37,21,23,41,13]

4. Read N and generate the Fibonacci sequence upto N.

5. Use a for loop to print a box like the one below. Allow the user to specify how wide and how high the box should be. [Hint: print('*'*10) prints ten asterisks.]

```
**********
**********
**********
**********
```

6. Use loop to print a box like the one below. Allow the user to specify how wide and how high the box should be.

```
**********
*        *
*        *
**********
```

7. Use for loops to print a diamond like the one below. Allow the user to specify how high the diamond should be.

8. Write a program that lets the user play Rock-Paper-Scissors against the computer. There should be five rounds, and after those five rounds, your program should print out who won and lost or that there is a tie.

9. Playing with Magic Words

Here a word 'S' of length 'n' is said to be magic word if it satisfies the following conditions:

All letters of S are lowercase letters of the English alphabets.

S_i, the character in the i^{th} position, is lexicographically smaller than S_{n-1-i} for all even i from 0 to n/2

S_i is lexicographically greater than S_{n-1-i} for all odd i from 0 to n/2

For example, the word "difference" is a magic word, while "similar" is not.

Given a word, write python code to check whether the word is magic or not.