Lab: Strings

[All codes given below are for Python 2.7.x, for Python 3 make suitable change]
For Python3.x: use () in print, and use input in place of raw_input

# Run following commands and observe the output:

1#

```
my_string = 'Hello'
print my_string
```

#output

```
Hello
```

2#

```
my_string = "Hello"
print my_string
```

#output

```
Hello
```

3#

```
my_string = '''Hello'''
print my_string
```

#output

```
Hello
```

# triple quotes string can extend multiple lines

4#

```
my_string = """Hello, welcome to
          the world of Python"""
print my_string
```

#output

```
Hello, welcome to
```

```
        the world of Python


#format function

default_order = "{}, {} and {}".format('ECE','MEC','CSE')
print '\n--- Default Order ---'
print default_order

#output
--- Default Order ---
ECE, MEC and CSE

# Order using positional argument

positional_order = "{1} in {0} is {2}".format('Guna','University','JUET')
print '\n--- Positional Order ---'
print positional_order
#output
--- Positional Order ---
University in Guna is JUET

# Order using keyword argument

keyword_order = "{r} has {j} and {u}".format(j='Jaypee',u='University',r='Raghogarh')
print '\n--- Keyword Order ---'
print keyword_order
#output
--- Keyword Order ---
Raghogarh has Jaypee and University


# input a string at run time

#use of input

my_string = input('Enter your string  : ' )
print 'the string {0} has length {1}'.format(my_string,len(my_string))

#output
```

```
Enter your string  : Jaypee
the string Jaypee has length 6
```

```
#output
Enter your string  : university
the string university has length 10
```

Report 1:
List all string functions in python, and write at least two examples of each.

Exercise:
Use built-in functions for followings:

A. Write a program to display a given string from backward.
B. Write a program to count number of words in string.
C. Write a program to concatenate one string contents to another.
D. Write a program to compare two strings they are exact equal or not.
E. Write a program to find a substring within a string. If found display its starting position.
F. Write a program to convert a string in uppercase.
G. Write a program to convert a string in lowercase.
H. Calculate number of occurrences of 'a' in a input string using recursion.

Write Python Script for followings (Avoid use of built-in function, if possible)

1. Create a function that writes the Fibonacci series up to n numbers.

2. Write a function that receives two numbers as an argument and display all prime numbers between these two numbers. Call this function from main ( ).

3. Define a function max() that takes two numbers as arguments and returns the largest of them. Use the if-then-else construct available in Python. (It is true that Python has the max() function built in, but writing it yourself is nevertheless a good exercise.

4. Define a function max_of_three() that takes three numbers as arguments and returns the largest of them.

5. Define a function that computes the length of a given string.

6. Write a script to input a string form the user and output the first non repeating character.

7. Write a function that takes a character (i.e. a string of length 1) and returns True if it is a vowel, False otherwise.

8. Write a function translate() that will translate a text into "rovarspraket" (Swedish for "robber's language"). That is, double every consonant and place an occurrence of "o" in between.

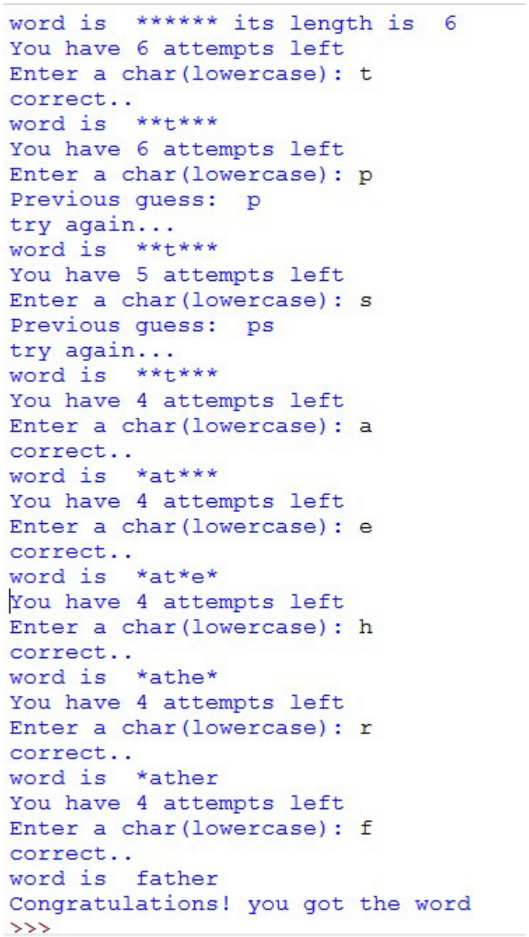
For example, translate("this is fun")
should return the string "tothohisos isos fofunon".

9. Define a function reverse() that computes the reversal of a string. For example, reverse ("I am testing") should return the string "gnitset ma I".

10. Define a function is_palindrome() that recognizes palindromes (i.e. words that look the same written backwards).
For example, is_palindrome("radar") should return True.

11. Write a function is_member() that takes a value (i.e. a number, string, etc) x and a list of values a, and Returns **True** if x is a member of a, **False** otherwise.
(Note that this is exactly what the in operator does, but for the sake of the exercise you should pretend Python did not have this operator.)

12. Write a python script to make word guessing game. The game runs as follows:



```
word is  ****** its length is  6
You have 6 attempts left
Enter a char(lowercase): t
correct..
word is  **t***
You have 6 attempts left
Enter a char(lowercase): p
Previous guess:  p
try again...
word is  **t***
You have 5 attempts left
Enter a char(lowercase): s
Previous guess:  ps
try again...
word is  **t***
You have 4 attempts left
Enter a char(lowercase): a
correct..
word is  *at***
You have 4 attempts left
Enter a char(lowercase): e
correct..
word is  *at*e*
You have 4 attempts left
Enter a char(lowercase): h
correct..
word is  *athe*
You have 4 attempts left
Enter a char(lowercase): r
correct..
word is  *ather
You have 4 attempts left
Enter a char(lowercase): f
correct..
word is  father
Congratulations! you got the word
>>>
```

13. Write a python script to take two values as string and convert it into a multiple lists which appears like matrix. (See sample input and output)

Sample string input: 3 5

Sample O/P: [0, 0, 0, 0, 0]
                [0, 1, 2, 3, 4]

[0, 2, 4, 6, 8]

Sample string input: 5 5

Sample O/P:

[0, 0, 0, 0, 0]

[0, 1, 2, 3, 4]

[0, 2, 4, 6, 8]

[0, 3, 6, 9, 12]

[0, 4, 8, 12, 16]

14. Write a python script to read a paragraph and print its words in sorted order

Sample input: jaypee university of engineering and technology raghogarh guna madhya pradesh

Sample Output:

and engineering guna jaypee madhya of pradesh raghogarh technology university

15. Write a python script to receive a tuple in input in single line input. Use **eval** command to convert string input to tuple.

Sample Input: (10, 12, 33, 45, 50,60)

Sample Output: tuple of length 6

Tuple is (10, 12, 33, 45, 50,60)

Sample Input: (10, 12,(33, 45), 50,60)

Sample Output: tuple of length 5

Tuple is (10, 12, (33, 45), 50,60)

16. Write a python script to receive a list in input in single line input. Use **eval** command to convert string input to list. (sample input out similar as above)

17. Write a python script to receive a tuple mentioned in Qu. 15 **without** using eval command.

Sample Input: (1, 2, 3, 4, 5)

Sample Output: tuple of length 5

(1, 2, 3, 4, 5)

18. Write a python script to receive a list mentioned in Qu. 16 **without** using eval command.

Sample Input: [1, 2, 3, 4, 5]

Sample Output: list of length 5

[1, 2, 3, 4, 5]

19. Write a python script to receive a dictionary in single line input **without** using eval command.

20. Write a python to show if there exists list, tuple in a given string input.

Sample Input: [1,2,3,4]

Sample Output: List

Sample Input: [1,2,(3,4),5]

Sample Output: List, tuple

Sample Input: (1, 2,[3,4],5)

Sample Output: tuple, list