

Kalyani Government Engineering College

Department of Computer Application
Python Programming Lab – MCAN191
Year: 2023-2024
Semester: 1st Semester
Assignment 4
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4.1 Write a program that accepts a string from user. Your program should count and display number of vowels in that string.

Code:

```
l="aeiouAEIOU"
d=dict()
x=input("Enter the string\n")

for c in x:
    if c in l:
        if c not in d:
            d[c]=1
        else:
            d[c]=d[c]+1

print("Number of vowels : ")
for key in d:
    print(key,"->",d[key])
```

Output:

```
Enter the string
madhusudan
Number of vowels :
a -> 2
u -> 2
```

4.2 Write a program that reads a string from keyboard and display: The number of uppercase letters in the string The number of lowercase letters in the string The number of digits in the string The number of whitespace characters in the string

Code:

```

x=input("Enter the string\n")
upper = lower = number = symbol = 0
for c in x:
    if c.isupper():
        upper+=1
    elif c.islower():
        lower+=1
    elif c.isnumeric():
        number+=1
    else:
        symbol+=1
print("Uppercase : ",upper,"\nLowercase : ",lower,"\nNumber : ",number,"
\nSymbol : ",symbol)

```

Output:

```

Enter the string
Madhusudan@123
Uppercase : 1
Lowercase : 9
Number : 3
Symbol : 1

```

4.3 Write a Python program that accepts a string from user. Your program should create and display a new string where the first and last characters have been exchanged. For example if the user enters the string 'HELLO' then new string would be 'OELLH'

Code:

```

x=input("Enter the string\n")
t=list(x)
j=""
t[0] , t[-1] = t[-1] , t[0]
j=j.join(t)
print("First and last characters have been exchanged ",j)

```

Output:

```

Enter the string
Madhusudan
First and last characters have been exchanged  nadhusudaM

```

4.4 Write a Python program that accepts a string from user. Your program should create a new string in reverse of first string and display it. For example if the user enters the string 'EXAM' then new string would be 'MAXE'.

Code:

```
x=input("Enter the string\n")

print("Reverse of string ",x[::-1])
```

Output:

```
Enter the string
exam
Reverse of string  maxe
```

4.5 Write a Python program that accepts a string from user. Your program should create a new string by shifting one position to left. For example if the user enters the string 'examination 2021' then new string would be 'xamination 2021e'

Code:

```
x=input("Enter the string\n")

t=list(x)

t.append(x[0])
t.pop(0)
print("New string shifting one position to left","".join(t))
```

Output:

```
Enter the string
madhu
New string shifting one position to left adhum
```

4.6 Write a program that asks the user to input his name and print its initials. Assuming that the user always types first name, middle name and last name and does not include any unnecessary spaces. For example, if the user enters Ajay Kumar Garg the program should display A. K.G. Note: Don't use split() method.

Code:

```
x = input("Enter the name\n")
m=""
m+=x[0]
m+=','
for i in range(len(x)):
    if x[i] == ' ':
        m+=x[i+1]
        m+=','
print(m.upper())
```

Output:

```
Enter the name
Ranjit Kumar Shaw
R.K.S.
```

4.7 A palindrome is a string that reads the same backward as forward. For example, the words dad, madam and radar are all palindromes. Write a programs that determines whether the string is a palindrome. Note: do not use reverse() method

Code:

```

x = input("Enter the string\n")
n=len(x)
flag = 0
for i in range(len(x)//2):
    if x[i] != x[n-i-1]:
        print("string is not palindrome")
        flag=0
        break
    else:
        flag =1

if flag :
    print("string is palindrome")

```

Output:

```

Enter the string
malayalam
string is palindrome

```

4.8 Write a program that display following output:

```

SHIFT
HIFTS
IFTSH
FTSHI
TSHIF
SHIFT

```

Code:

```

x = input("Enter the string\n")

t=""
for i in range(len(x)):
    c=x[i+1:]
    t=c+x[:i+1]
    print(t)

```

Output:

```

Enter the string
SHIFT
HIFTS
IFTSH
FTSHI
TSHIF
SHIFT

```

4.9 Write a program in python that accepts a string to setup a passwords. Your entered password must meet the following requirements:
The password must be at least eight characters long.
It must contain at least one uppercase letter.
It must contain at least one lowercase letter.
It must contain at least one numeric digit.
Your program should perform this validation.

Code:

```
def is_valid_password(password):  
  
    if len(password) < 8:  
        return False  
  
    if not any(char.isupper() for char in password):  
        return False  
  
    if not any(char.islower() for char in password):  
        return False  
  
    if not any(char.isdigit() for char in password):  
        return False  
  
    return True  
  
user_password = input("Enter your password: \n")  
  
if is_valid_password(user_password):  
    print("Password is valid.")  
else:  
    print("Password does not meet the requirements.")
```

Output:

```
Enter your password:  
Madhusudan@123  
Password is valid.
```