NAME - JATAN SAHU STUDENT ID -202218061 Lab-06 Functions in Python

1. Accept one no and display its absolute value.

[ ]:
```
def absolute(num):
  n=abs(num)
  print("absolute value :", n)
num=float(input("Enter any number :"))
absolute(num)
```

```
Enter any number :-253.26
absolute value : 253.26
```

2. Get 2 no from user and display base^exp. (2^3=8)

[ ]:
```
def pow(b,e):
  n=b**e
  print("base^expo. :",n)

b=int(input("enter base number :"))
e=int(input("Enter exponential number :"))
pow(b,e)
```

```
enter base number :2
Enter exponential number :3
base^expo. : 8
```

3. Get a string from user and display length of that string.

[ ]:
```
def displaylen(string):
  print("Length of the the string is :",len(string))


string=input("Enter string :")
displaylen(string)
```

```
Enter string :Python
Length of the the string is : 6
```

4. Get two strings from user and compare weather both are same or not.

[ ]:
```
def compair(s1,s2):
  if(s1==s2):
    print("Both string are same ")
  else:
    print("Both string are not same")

s1=input("Enter string one :")
s2=input("Enter string two :")
compair(s1,s2)

s1=input("Enter string one :")
s2=input("Enter string two :")
compair(s1,s2)
```

```
Enter string one :python'
Enter string two :python'
Both string are same
Enter string one :python
Enter string two :java
Both string are not same
```

[ ]:

5. Get a string from user and display reverse of it.

[5]:
```
#using loop
def rev(string):
  lis2=[]
  lis=list(string)
  for i in lis[len(lis)::-1]:
    lis2.append(i)
  print("".join(lis2))


string=input("enter string ")
rev(string)
```

```
enter string python
nohtyp
```

[ ]:
```
def rev(string):
  txt=string[::-1]
  print(txt)
string=input("Enter string :")
rev(string)
```

```
Enter string :python
nohtyp
```

6. Get two strings from user and merge it into first string.

[ ]:
```
def merge(s1,s2):
  s=s1 + s2

  print(s)
s1=input("enter 1st string :")
s2=input("Enter 2nd string :")
merge(s1,s2)
```

```
enter 1st string :python
Enter 2nd string :java
pythonjava
```

7. Get a string from user and display it in lower case.

[ ]:
```
def dislower(strn):
  print(strn.lower())
strn=input("Enter string :")
```

```
dislower(strn)
```

```
Enter string :PYthon
python
```

8. Get a string from user and display it in upper case.

[ ]:
```
def disupper(strn):
  print(strn.upper())
strn=input("Enter string :")
dislower(strn)
```

```
Enter string :python
PYTHON
```

9. Create a user define function named sum which accept 2 arguments (of integer type) and return the sum of them.

[ ]:
```
def sum(a,b):
  a=int(input("Enter 1st integer :"))

  b=int(input("Enter 2nd integer :"))
  c=a+b

  return print("sum :",c)

sum(a,b)
```

```
Enter 1st integer :5
Enter 2nd integer :8
sum : 13
```

10. Create a user define function named avg which pass array as argument (of integer type) and return its average value.

[ ]:
```
def avg(n):
  sum=0
  for i in n:
    sum+=i
  print("average ",sum/len(n))
n=list(map(int,input().split(" ")))
avg(n)
```

```
1 2 3 4 5
average  3.0
```

11. Create a user define function named evenodd which accept one argument (of integer type) and return if the number is even or odd.

[ ]:
```
def evenod(n):

  if n%2==0:
    print("EVEN")
  else:
    print("ODD")
```

```
n=int(input("Enter any  NATURAL number :"))

evenod(n)
```

```
Enter any  NATURAL number :5
ODD
```

12. Create a user define function named fact which accept one argument (of integer type) andreturn the factorial of given number.

[ ]:
```
def fact(n):
   fac=1
   for i in range(1,n+1):
     fac=fac*i
   print("Factorial :",fac)

n=int(input("Enter any  NATURAL number :"))
fact(n)
```

```
Enter any  NATURAL number :5
Factorial : 120
```

13. Create a user define function named prime which accept one argument (of integer type) and display that the no is prime or not. (no need to return value)

[6]:
```
def prime(n):
  flag=False
  for i in range(2,n):
    if n%i==0:
      flag=True
  if flag==True:
    print("Number is not prime ")
  else:
    print("Number is  prime")

n=int(input("Enter any  NATURAL number :"))
prime(n)
n=int(input("Enter any  NATURAL number :"))
prime(n)
```

```
Enter any  NATURAL number :5
Number is  prime
Enter any  NATURAL number :6
Number is not prime
```

14. Create a user define function named triangle which accept one argument (of integer type) and display a triangle like. (If you have given 4 as argument) 1 1 2 1 2 3 1 2 3 4

[ ]:
```
def triangle(n):
  for i in range(1,n+1):
    for j in range(1,i+1):
      print(j,end=" ")
    print()
```

```
n=int(input("Enter argument :"))
triangle(n)
```

```
Enter argument :4
1
1 2
1 2 3
1 2 3 4
```

15. Create a user define function named power which accept two arguments (of integer type) (i) base (ii) expon and display the base^expon value.

[ ]:
```
def power(b,e):
  print("b^e ",b**e)
b=int(input("Enter base value :"))
e=int(input("Enter expon value :"))
power(b,e)
```

```
Enter base value :5
Enter expon value :2
b^e  25
```

16. Create a user define function named Sroot which accept one argument (of integer type) and display the square root of that no.

[ ]:
```
def sroot(n):
  import math
  sqr=math.sqrt(n)
  print("Square root of n :",sqr)
n=int(input("Enter argument :"))
sroot(n)
```

```
Enter argument :16
Square root of n : 4.0
```

17. Create a user define function named ASCII which accept one argument (of character type) and display ASCII value of that character.

[ ]:
```
def ASCII(c):
  print("ASCII value of entered number is :",ord(c))
c=(input("Enter any character :"))
ASCII(c)
c=(input("Enter any character :"))
ASCII(c)
```

```
Enter any character :A
ASCII value of entered number is : 65
Enter any character :a
ASCII value of entered number is : 97
```

18. Create a user define function named CHR which accept one argument (of integer type) and display character of that ASCII value.

[ ]:
```
def CHR(n):
  print("ASCII value of entered character is  :",chr(c))
c=int(input("Enter number :"))
CHR(n)
c=int(input("Enter number :"))
CHR(n)
```

```
Enter number :65
ASCII value of entered character is  : A
Enter number :97
ASCII value of entered character is  : a
```

19. Write a function to count the simple interest.

[ ]:
```
def SI(p,r,t):
  i=(p*r*t)/100
  print("Simple interest :", float(i))
p=float(input("Enter principle amount :"))
r=float(input("Enter rate %:"))
t=float(input("Enter time period in years :"))
SI(p,r,t)
```

```
Enter principle amount :1000
Enter rate %:30
Enter time period in years :2
Simple interest : 600.0
```

20. Write a function that count compound interest.

[ ]:
```
def CI(p,r,t):
  i= ((p*((100+r)/100)**t)-p)
  print((i))
p=float(input("Enter principle amount :"))
r=float(input("Enter rate %:"))
t=int(input("Enter time period in years :"))
CI(p,r,t)
```

```
Enter principle amount :100
Enter rate %:10
Enter time period in years :2
21.000000000000014
```

21. Write a function to generate the square of any given number

[ ]:
```
def square(n):
  print("square of any given number is :",n**2)
n=int(input("Enter number :"))
square(n)
n=int(input("Enter number :"))
square(n)
```

```
Enter number :5
square of any given number is : 25
```

```
Enter number :16
square of any given number is : 256
```

22. Write a function to count mean for discrete data.

```
[ ]: def mean(lis):
       # lis=(map(int,input().split("")))
       sum=0
       for i in lis:
         sum+=i
       avg=sum/len(lis)
       print("mean :",avg)
     lis=list((map(int,input().split())))
     print(lis)
     mean(lis)
```

```
1 2 3 4
[1, 2, 3, 4]
mean : 2.5
```

23. Write a function to find out maximum from of n no of values.

```
[ ]: def ma(n):
       lis=[]
       for i in range(n):
         r=int(input("Enter values:"))
         lis.append(r)
       print("list :",lis)
       m=lis.sort()
       print("Maximum value is :",lis[-1])
     n=int(input("enter how many values you want to enter :"))
     ma(n)
```

```
enter how many values you want to enter :5
Enter values:5
Enter values:69
Enter values:45
Enter values:75
Enter values:12
list : [5, 69, 45, 75, 12]
Maximum value is : 75
```

24. Write a function to arrange integer values in ascending order in a list

```
[ ]: def ma(n):
       lis=[]
       for i in range(n):
         r=int(input("Enter values:"))
         lis.append(r)
       print("list :",lis)
       m=lis.sort()
       print("SORTED LIST IS :",lis)
     n=int(input("enter how many values you want to enter :"))
     ma(n)
```

```
enter how many values you want to enter :5
Enter values:12
Enter values:23
Enter values:50
Enter values:14
Enter values:8
list : [12, 23, 50, 14, 8]
SORTED LIST IS : [8, 12, 14, 23, 50]
```

25. Write a program that take input names of 10 students. Arrange them in ascending order.

[ ]:
```
def asc(n):
  lis=[]
  for i in range(n):
    r=input("enter name :")
    lis.append(r)
  print("LIST OF NAMES :",lis)
  lis.sort()
  print("SORTED LIST IS :",lis)
n=int(input("enter how many names you want to enter :"))
asc(n)
```

```
enter how many names you want to enter :10
enter name :jatan
enter name :yukta
enter name :satan
enter name :om
enter name :isha
enter name :jay
enter name :simran
enter name :karan
enter name :dhruv
enter name :sahil
LIST OF NAMES : ['jatan', 'yukta', 'satan', 'om', 'isha', 'jay', 'simran', 'karan',
'dhruv', 'sahil']
SORTED LIST IS : ['dhruv', 'isha', 'jatan', 'jay', 'karan', 'om', 'sahil', 'satan',
'simran', 'yukta']
```

26. Write a program that take input paragraph of 10 lines. Count total no of word and total no of characters (Excluding blank spaces).

[2]:
```
def para(str):
  l=[]
  l=str.split(".")
  print(l)
  c1=c2=0
  for i in l:
    l1=i.split(" ")
    c1+=len(l1)
    c=list(l1)
    for i in c:
      if i!=' ':
        c2+=len(i)
```

```
  print("Total words:",c1)
  print("Total characters ",c2)


str=input("Enter a string:")
para(str)
```

```
Enter a string:Diwali is a Hindu festival. It is known as the festival of lights. It
marks the victory of good over evil. Ram returned home this day. He defeated demon
Ravana. People were happy for his return. They celebrated by lighting diyas. We worship
Laxmi and Ganesha on Diwali. We eat sweets and burst crackers. We should always fight
evil.
['Diwali is a Hindu festival', ' It is known as the festival of lights', ' It marks the
victory of good over evil', ' Ram returned home this day', ' He defeated demon Ravana', '
People were happy for his return', ' They celebrated by lighting diyas', ' We worship
Laxmi and Ganesha on Diwali', ' We eat sweets and burst crackers', ' We should always
fight evil', '']
Total words: 69
Total characters  264
```

27. Write a function to check whether the entered string is satisfying the password criteria or not.

Password criteria:

1. Atleast one uppercase, lowercase and digit should be there
2. Not less than 8 characters and not more than 20 characters
3. Password should not start with any special characters or digits
4. Allowable special character: @,&,$

[ ]:
```
def checkpass(c):
  cdigit=0
  cupper=0
  clower=0
  cspe=0
  lis=list(c)
  if lis[0]!='@' or lis[0]!='&' or lis[0]!='$':
    if len(lis)>=8 and len(lis)<=20:

      for i in lis:
        if i!=' ':
          if i.isalnum():
              if i.isupper():
                cupper+=1
              elif i.islower():
                clower+=1
              elif i.isdigit():
                cdigit+=1
          elif i=='@' or i=='&' or i=='$':
              cspe+=1
          else:
```

```
            print("Enter valid password(special character ) :")
        else:
          print("Enter password without space ")
    else:
     print("invalid-pw Not less than 8 characters n not more than 20 char")
  else:
   print("invalid-Pw should not start with any special characters or digits")
  if cupper>=1 and clower>=1 and cdigit>=1 and lis[0]!='@' and lis[0]!='&' and lis[0]!
 ↪='$' :
    print("password is valid")
  else:
    print("Check error")
c=input("Enter password :")
checkpass(c)
c=input("Enter password :")
checkpass(c)
c=input("Enter password :")
checkpass(c)
c=input("Enter password :")
checkpass(c)
```

```
Enter password :Aahaan2@
password is valid
Enter password :aahaan2@
Check error
Enter password :Ahan2@
invalid-pw Not less than 8 characters n not more than 20 char
Check error
Enter password :@Aahaan2@
Check error
```

[ ]: