#Q. Write a program to dispaly \*'s in Right angled triangled form

\*

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\* \* \* \* \* \* \*

n = int(input("Enter number of rows:"))

for i in range(1,n+1):

for j in range(1,i+1):

print("\*",end=" ")

print()

#Alternative way:

n = int(input("Enter number of rows:"))

for i in range(1,n+1):

print("\* " \* i)

===========================

Q. Write a program to display \*'s in pyramid style(also known as equivalent triangle)

1) \*

2) \* \*

3) \* \* \*

4) \* \* \* \*

5) \* \* \* \* \*

6) \* \* \* \* \* \*

7) \* \* \* \* \* \* \*

8)

9) n = int(input("Enter number of rows:"))

10) for i in range(1,n+1):

11) print(" " \* (n-i),end="")

12) print("\* "\*i)

======================================

# To print odd numbers in the range 0 to 9

1) for i in range(10):

2) if i%2==0:

3) continue

4) print(i)

=================================

Q. Write a program to access each character of string in forward and backward direction

by using while loop?

1) s="Learning Python is very easy !!!"

2) n=len(s)

3) i=0

4) print("Forward direction")

5) while i<n:

6) print(s[i],end=' ')

7) i +=1

8) print("Backward direction")

9) i=-1

10) while i>=-n:

11) print(s[i],end=' ')

12) i=i-1

Alternative ways:

1) s="Learning Python is very easy !!!"

2) print("Forward direction")

3) for i in s:

4) print(i,end=' ')

5)

6) print("Forward direction")

7) for i in s[::]:

8) print(i,end=' ')

9)

10) print("Backward direction")

11) for i in s[::-1]:

12) print(i,end=' ')

======================================

Q. Program to display all positions of substring in a given main string

1) s=input("Enter main string:")

2) subs=input("Enter sub string:")

3) flag=False

4) pos=-1

5) n=len(s)

6) while True:

7) pos=s.find(subs,pos+1,n)

8) if pos==-1:

9) break

10) print("Found at position",pos)

11) flag=True

12) if flag==False:

13) print("Not Found")

Output:

D:\python\_classes>py test.py

Enter main string:abbababababacdefg

Enter sub string:a

Found at position 0

Found at position 3

Found at position 5

Found at position 7

Found at position 9

Found at position 11

D:\python\_classes>py test.py

Enter main string:abbababababacdefg

Enter sub string:bb

Found at position 1

=========================================

Counting substring in the given String:

1) s="abcabcabcabcadda"

2) print(s.count('a'))

3) print(s.count('ab'))

========================================

Q1. Write a program to reverse the given String

input: durga

output:agrud

1

st Way:

s=input("Enter Some String:")

print(s[::-1])

2

nd Way:

s=input("Enter Some String:")

print(''.join(reversed(s)))

3

rd Way:

s=input("Enter Some String:")

i=len(s)-1

target=''

while i>=0:

target=target+s[i]

i=i-1

print(target)

======================================

Q2. Program to reverse order of words.

1) input: Learning Python is very Easy

2) output: Easy Very is Python Learning

3)

4) s=input("Enter Some String:")

5) l=s.split()

6) l1=[]

7) i=len(l)-1

8) while i>=0:

9) l1.append(l[i])

10) i=i-1

11) output=' '.join(l1)

12) print(output)

Output:

Enter Some String:Learning Python is very easy!!

easy!!! very is Python Learning

=====================

Q3. Program to reverse internal content of each word.

input: Durga Software Solutions

output:agruD erawtfoS snoituloS

1) s=input("Enter Some String:")

2) l=s.split()

3) l1=[]

4) i=0

5) while i<len(l):

6) l1.append(l[i][::-1])

7) i=i+1

8) output=' '.join(l1)

9) print(output)

==============================

Q4. Write a program to print characters at odd position and even position for the given

String?

1

st Way:

s=input("Enter Some String:")

print("Characters at Even Position:",s[0::2])

print("Characters at Odd Position:",s[1::2])

2

nd Way:

1) s=input("Enter Some String:")

2) i=0

3) print("Characters at Even Position:")

4) while i< len(s):

5) print(s[i],end=',')

6) i=i+2

7) print()

8) print("Characters at Odd Position:")

9) i=1

10) while i< len(s):

11) print(s[i],end=',')

12) i=i+2

=================================================

Q5. Program to merge characters of 2 strings into a single string by taking characters

alternatively.

s1="ravi"

s2="reja"

output: rtaevjia

1) s1=input("Enter First String:")

2) s2=input("Enter Second String:")

3) output=''

4) i,j=0,0

5) while i<len(s1) or j<len(s2):

6) if i<len(s1):

7) output=output+s1[i]

8) i+=1

9) if j<len(s2):

10) output=output+s2[j]

11) j+=1

12) print(output)

Output:

Enter First String:durga

Enter Second String:ravisoft

druarvgiasoft

===========================

Q6. Write a program to sort the characters of the string and first alphabet symbols

followed by numeric values

input: B4A1D3

Output: ABD134

1) s=input("Enter Some String:")

2) s1=s2=output=''

3) for x in s:

4) if x.isalpha():

5) s1=s1+x

6) else:

7) s2=s2+x

8) for x in sorted(s1):

9) output=output+x

10) for x in sorted(s2):

11) output=output+x

12) print(output)

===============================

Q7. Write a program for the following requirement

input: a4b3c2

output: aaaabbbcc

1) s=input("Enter Some String:")

2) output=''

3) for x in s:

4) if x.isalpha():

5) output=output+x

6) previous=x

7) else:

8) output=output+previous\*(int(x)-1)

9) print(output)

============================

Q8. Write a program to perform the following activity

input: a4k3b2

output:aeknbd

1) s=input("Enter Some String:")

2) output=''

3) for x in s:

4) if x.isalpha():

5) output=output+x

6) previous=x

7) else:

8) output=output+chr(ord(previous)+int(x))

9) print(output)

====================================================

Q9. Write a program to remove duplicate characters from the given input string?

input: ABCDABBCDABBBCCCDDEEEF

output: ABCDEF

1) s=input("Enter Some String:")

2) l=[]

3) for x in s:

4) if x not in l:

5) l.append(x)

6) output=''.join(l)

================================================

Q10. Write a program to find the number of occurrences of each character present in the

given String?

input: ABCABCABBCDE

output: A-3,B-4,C-3,D-1,E-1

1) s=input("Enter the Some String:")

2) d={}

3) for x in s:

4) if x in d.keys():

5) d[x]=d[x]+1

6) else:

7) d[x]=1

8) for k,v in d.items():

9) print("{} = {} Times".format(k,v))

=====================================================

==================================

Traversing the elements of List:

1. By using while loop:

1) n=[0,1,2,3,4,5,6,7,8,9,10]

2) i=0

3) while i<len(n):

4) print(n[i])

5) i=i+1

----------

By using for loop:

1) n=[0,1,2,3,4,5,6,7,8,9,10]

2) for n1 in n:

3) print(n1)

===============================

To display only even numbers:

1) n=[0,1,2,3,4,5,6,7,8,9,10]

2) for n1 in n:

3) if n1%2==0:

4) print(n1)

=======================

To add all elements to list upto 100 which are divisible by 10

1) list=[]

2) for i in range(101):

3) if i%10==0:

4) list.append(i)

5) print(list)

6)

7)

8) D:\Python\_classes>py test.py

9) [0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100]

=============================================

1) n=[20,5,15,10,0]

2) n.sort()

3) print(n) #[0,5,10,15,20]

4)

5) s=["Dog","Banana","Cat","Apple"]

6) s.sort()

7) print(s) #['Apple','Banana','Cat','Dog']

============================================

List Comprehensions:

1) s=[ x\*x for x in range(1,11)]

2) print(s)

3) v=[2\*\*x for x in range(1,6)]

4) print(v)

5) m=[x for x in s if x%2==0]

6) print(m)

7)

8) Output

9) D:\Python\_classes>py test.py

10) [1, 4, 9, 16, 25, 36, 49, 64, 81, 100]

11) [2, 4, 8, 16, 32]

12) [4, 16, 36, 64, 100]

==========================

1) words=["Balaiah","Nag","Venkatesh","Chiranjeevi"]

2) l=[w[0] for w in words]

3) print(l)

4)

5) Output['B', 'N', 'V', 'C']

Eg:

1) num1=[10,20,30,40]

2) num2=[30,40,50,60]

3) num3=[ i for i in num1 if i not in num2]

4) print(num3) [10,20]

5)

6) common elements present in num1 and num2

7) num4=[i for i in num1 if i in num2]

8) print(num4) [30, 40]

Eg:

1) words="the quick brown fox jumps over the lazy dog".split()

2) print(words)

3) l=[[w.upper(),len(w)] for w in words]

4) print(l)

5)

6) Output

7) ['the', 'quick', 'brown', 'fox', 'jumps', 'over', 'the', 'lazy', 'dog']

8) [['THE', 3], ['QUICK', 5], ['BROWN',

=================================================

Q. Write a program to display unique vowels present in the given word?

1) vowels=['a','e','i','o','u']

2) word=input("Enter the word to search for vowels: ")

3) found=[]

4) for letter in word:

5) if letter in vowels:

6) if letter not in found:

7) found.append(letter)

8) print(found)

9) print("The number of different vowels present in",word,"is",len(found))

10)

11)

12) D:\Python\_classes>py test.py

13) Enter the word to search for vowels: durgasoftwaresolutions

14) ['u', 'a', 'o', 'e', 'i']

15) The number of different vowels present in durgasoftwaresolutions is 5

================================

Q.Write a program to eliminate duplicates present in the list?

Approach-1:

1. l=eval(input("Enter List of values: "))

2. s=set(l)

3. print(s)

4.

5. Output

6. D:\Python\_classes>py test.py

7. Enter List of values: [10,20,30,10,20,40]

8. {40, 10, 20, 30}

Approach-2:

1. l=eval(input("Enter List of values: "))

2. l1=[]

3. for x in l:

4. if x not in l1:

5. l1.append(x)

6. print(l1)

7.

8. Output

9. D:\Python\_classes>py test.py

10. Enter List of value [10,20,30,10,20,40]

11. [10, 20, 30, 40]

============================================

Q. Write a program to enter name and percentage marks in a dictionary and

display information on the screen

1) rec={}

2) n=int(input("Enter number of students: "))

3) i=1

4) while i <=n:

5) name=input("Enter Student Name: ")

6) marks=input("Enter % of Marks of Student: ")

7) rec[name]=marks

8) i=i+1

9) print("Name of Student","\t","% of marks")

10) for x in rec:

11) print("\t",x,"\t\t",rec[x])

12)

13) Output

14) D:\Python\_classes>py test.py

15) Enter number of students: 3

16) Enter Student Name: durga

17) Enter % of Marks of Student: 60%

18) Enter Student Name: ravi

19) Enter % of Marks of Student: 70%

20) Enter Student Name: shiva

21) Enter % of Marks of Student: 80%

22) Name of Student % of marks

23) durga 60%

24) ravi 70 %

25) shiva 80%

========================

Q. Write a program to take dictionary from the keyboard and print the sum

of values?

1. d=eval(input("Enter dictionary:"))

2. s=sum(d.values())

3. print("Sum= ",s)

4.

5. Output

6. D:\Python\_classes>py test.py

7. Enter dictionary:{'A':100,'B':200,'C':300}

8. Sum= 600

Q. Write a program to find number of occurrences of each letter present in

the given string?

1. word=input("Enter any word: ")

2. d={}

3. for x in word:

4. d[x]=d.get(x,0)+1

5. for k,v in d.items():

6. print(k,"occurred ",v," times")

7.

8. Output

9. D:\Python\_classes>py test.py

10. Enter any word: mississippi

11. m occurred 1 times

12. i occurred 4 times

13. s occurred 4 times

14. p occurred 2 times

=======================================

Q. Write a program to find number of occurrences of each vowel present in

the given string?

1. word=input("Enter any word: ")

2. vowels={'a','e','i','o','u'}

3. d={}

4. for x in word:

5. if x in vowels:

6. d[x]=d.get(x,0)+1

7. for k,v in sorted(d.items()):

8. print(k,"occurred ",v," times")

9.

10. Output

11. D:\Python\_classes>py test.py

12. Enter any word: doganimaldoganimal

13. a occurred 4 times

14. i occurred 2 times

15. o occurred 2 times

==============================

Q. Write a program to accept student name and marks from the keyboard

and creates a dictionary. Also display student marks by taking student name

as input?

1) n=int(input("Enter the number of students: "))

2) d={}

3) for i in range(n):

4) name=input("Enter Student Name: ")

5) marks=input("Enter Student Marks: ")

6) d[name]=marks

7) while True:

8) name=input("Enter Student Name to get Marks: ")

9) marks=d.get(name,-1)

10) if marks== -1:

11) print("Student Not Found")

12) else:

13) print("The Marks of",name,"are",marks)

14) option=input("Do you want to find another student marks[Yes|No]")

15) if option=="No":

16) break

17) print("Thanks for using our application")

18)

19) Output

20) D:\Python\_classes>py test.py

21) Enter the number of students: 5

22) Enter Student Name: sunny

23) Enter Student Marks: 90

===========================

Dictionary Comprehension:

Comprehension concept applicable for dictionaries also.

1. squares={x:x\*x for x in range(1,6)}

2. print(squares)

3. doubles={x:2\*x for x in range(1,6)}

4. print(doubles)

5.

6. Output

7. {1: 1, 2: 4, 3: 9, 4: 16, 5: 25}

8. {1: 2, 2: 4, 3: 6, 4: 8, 5: 10}

=============================

Q. Write a function to find factorial of given number?

1) def fact(num):

2) result=1

3) while num>=1:

4) result=result\*num

5) num=num-1

6) return result

7) for i in range(1,5):

8) print("The Factorial of",i,"is :",fact(i))

9)

10) Output

11) D:\Python\_classes>py test.py

12) The Factorial of 1 is : 1

13) The Factorial of 2 is : 2

14) The Factorial of 3 is : 6

15) The Factorial of 4 is : 24

Alternative

1) def factorial(n):

2) if n==0:

3) result=1

4) else:

5) result=n\*factorial(n-1)

6) return result

7) print("Factorial of 4 is :",factorial(4))

8) print("Factorial of 5 is :",factorial(5))

9)

10) Output

11) Factorial of 4 is : 24

12) Factorial of 5 is : 120

=================================

Q. Write a program to create a lambda function to find square of given

number?

1) s=lambda n:n\*n

2) print("The Square of 4 is :",s(4))

3) print("The Square of 5 is :",s(5))

4)

5) Output

6) The Square of 4 is : 16

7) The Square of 5 is : 25

Q. Lambda function to find sum of 2 given numbers

1) s=lambda a,b:a+b

2) print("The Sum of 10,20 is:",s(10,20))

3) print("The Sum of 100,200 is:",s(100,200))

4)

5) Output

6) The Sum of 10,20 is: 30

7) The Sum of 100,200 is: 300

Q. Lambda Function to find biggest of given values.

1) s=lambda a,b:a if a>b else b

2) print("The Biggest of 10,20 is:",s(10,20))

3) print("The Biggest of 100,200 is:",s(100,200))

4)

5) Output

6) The Biggest of 10,20 is: 20

7) The Biggest of 100,200 is: 200

=================================

Q. Program to filter only even numbers from the list by using filter()

function?

without lambda Function:

1) def isEven(x):

2) if x%2==0:

3) return True

4) else:

5) return False

6) l=[0,5,10,15,20,25,30]

7) l1=list(filter(isEven,l))

8) print(l1) #[0,10,20,30]

with lambda Function:

1) l=[0,5,10,15,20,25,30]

2) l1=list(filter(lambda x:x%2==0,l))

3) print(l1) #[0,10,20,30]

4) l2=list(filter(lambda x:x%2!=0,l))

5) print(l2) #[5,15,25]

---

Eg: Without lambda

1) l=[1,2,3,4,5]

2) def doubleIt(x):

3) return 2\*x

4) l1=list(map(doubleIt,l))

5) print(l1) #[2, 4, 6, 8, 10]

with lambda

1) l=[1,2,3,4,5]

2) l1=list(map(lambda x:2\*x,l))

3) print(l1) #[2, 4, 6, 8, 10]

Eg 2: To find square of given numbers

1. l=[1,2,3,4,5]

2. l1=list(map(lambda x:x\*x,l))

3. print(l1) #[1, 4, 9, 16, 25]

========================

File Handling

1) f=open("abcd.txt",'w')

2) list=["sunny\n","bunny\n","vinny\n","chinny"]

3) f.writelines(list)

4) print("List of lines written to the file successfully")

5) f.close()

Eg 1: To read total data from the file

1) f=open("abc.txt",'r')

2) data=f.read()

3) print(data)

4) f.close()

5)

6) Output

7) sunny

8) bunny

9) chinny

10) vinny

Eg 2: To read only first 10 characters:

1) f=open("abc.txt",'r')

2) data=f.read(10)

3) print(data)

4) f.close()

Eg 3: To read data line by line:

1) f=open("abc.txt",'r')

2) line1=f.readline()

3) print(line1,end='')

4) line2=f.readline()

5) print(line2,end='')

6) line3=f.readline()

7) print(line3,end='')

8) f.close()

9)

10) Output

11) sunny

12) bunny

13) chinny

Eg 4: To read all lines into list:

1) f=open("abc.txt",'r')

2) lines=f.readlines()

3) for line in lines:

4) print(line,end='')

5) f.close()

6)

7) Output

8) sunny

9) bunny

10) chinny

11) vinny

Eg 5:

1) f=open("abc.txt","r")

2) print(f.read(3))

3) print(f.readline())

4) print(f.read(4))

5) print("Remaining data")

6) print(f.read())

====================================

Q. Program to print the number of lines,words and characters present in the

given file?

1) import os,sys

2) fname=input("Enter File Name: ")

3) if os.path.isfile(fname):

4) print("File exists:",fname)

5) f=open(fname,"r")

6) else:

7) print("File does not exist:",fname)

8) sys.exit(0)

9) lcount=wcount=ccount=0

10) for line in f:

11) lcount=lcount+1

12) ccount=ccount+len(line)

13) words=line.split()

14) wcount=wcount+len(words)

15) print("The number of Lines:",lcount)

16) print("The number of Words:",wcount)

17) print("The number of Characters:",ccount)

18)

19) Output

20) D:\Python\_classes>py test.py

21) Enter File Name: durga.txt

22) File does not exist: durga.txt

23)

24) D:\Python\_classes>py test.py

25) Enter File Name: abc.txt

26) File exists: abc.txt

27) The number of Lines: 6

28) The number of Words: 24

29) The number of Characters: 149

abc.txt:

All Students are GEMS!!!

All Students are GEMS!!!

All Students are GEMS!!!

All Students are GEMS!!!

All Students are GEMS!!!

All Students are GEMS!!!

====================================================

Writing data to csv file:

1) import csv

2) with open("emp.csv","w",newline='') as f:

3) w=csv.writer(f) # returns csv writer object

4) w.writerow(["ENO","ENAME","ESAL","EADDR"])

5) n=int(input("Enter Number of Employees:"))

6) for i in range(n):

7) eno=input("Enter Employee No:")

8) ename=input("Enter Employee Name:")

9) esal=input("Enter Employee Salary:")

10) eaddr=input("Enter Employee Address:")

11) w.writerow([eno,ename,esal,eaddr])

12) print("Total Employees data written to csv file successfully")

Note: Observe the difference with newline attribute and without

with open("emp.csv","w",newline='') as f:

with open("emp.csv","w") as f:

Reading Data from csv file:

1) import csv

2) f=open("emp.csv",'r')

3) r=csv.reader(f) #returns csv reader object

4) data=list(r)

5) #print(data)

6) for line in data:

7) for word in line:

8) print(word,"\t",end='')

9) print()

10)

11) Output

12) D:\Python\_classes>py test.py

13) ENO ENAME ESAL EADDR

14) 100 Durga 1000 Hyd

15) 200 Sachin 2000 Mumbai

16) 300 Dhoni 3000 Ranchi

=========================================

Q. Write a Python Program to check whether the given mail id is

valid gmail id or not?

1) import re

2) s=input("Enter Mail id:")

3) m=re.fullmatch("\w[a-zA-Z0-9\_.]\*@gmail[.]com",s)

4) if m!=None:

5) print("Valid Mail Id");

6) else:

7) print("Invalid Mail id")

Output:

D:\python\_classes>py test.py

Enter Mail id:durgatoc@gmail.com

Valid Mail Id