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WAP, accept a string and count total no. of vowels in a given string.

```
x = input("Enter a string")  # Technosoft
count = 0
for i in x:
    if (i == 'a' or i == 'e' or i == 'i' or i == 'o'
        or i == 'u'):
        count += 1
print("Total no of vowel is:", count)
```

if i in "aeiouAEIOU"

WAP, accept a string and count each vowel separately.

```
x = input("Enter a string")
for i in x:
    count = 0
    if i in "aAeEiIoOuU":
        count += 1
    elif i in "eE":
        count += 1
    elif i in
```

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```
acnt = ecnt = icnt = ocnt = ucnt = 0
for i in x:
    if i in "Aa": acnt = acnt + 1  # acnt += 1
    elif i in "Ee": ecnt = ecnt + 1  # ecnt += 1
    elif i in "Ii": icnt += 1
    elif i in "Oo": ocnt += 1
    elif i in "Uu": ucnt += 1
print("Total no. of a's:", acnt)
print("      e's:", ecnt)
print("      i's:", icnt)
print("      o's:", ocnt)
print("      u's:", ucnt)
```

WAP, accept a string and count total no. of digits, vowels, & consonents and special characters.
Ans → on page 33

WAP, accept a number and print multiplication table up to 10

```
for i in range(1,11):
    print(n, "*", i, "=", n*i)
```

WAP, Print tables from 2 to 10

```
import time
for n in range(2,11):
    for i in range(1,11):
        print(n, "*", i, "=", n*i)
    print("_"*50)
    time.sleep(2)
n = int(input("Enter a number:"))
```

```
acnt = ecnt = icnt = ocnt = ucnt = 0
for i in x:
    if i in "Aa": acnt = acnt + 1  # acnt += 1
    elif i in "Ee": ecnt = ecnt + 1  # ecnt += 1
    elif i in "Ii": icnt += 1
    elif i in "Oo": ocnt += 1
    elif i in "Uu": ucnt += 1
print("Total no. of a's:", acnt)
print("      e's:", ecnt)
print("      i's:", icnt)
print("      o's:", ocnt)
print("      u's:", ucnt)
```

WAP, accept a string and count total no. of digits, vowels, & consonents and special characters.

Ans → on page 33

WAP, accept a number and print multiplication table up to 10

```
for i in range(1,11):
    n = int(input("Enter a no"))  # print
    print(n, "*", i, "=", n*i)
```

WAP, Print tables from 2 to 10 → import time

```
for n in range(2,11):
    for i in range(1,11):
        print(n, "*", i, "=", n*i)
    print("_"*50)
    time.sleep(2)
    n = int(input("Enter a number:"))
```

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* Examples of break

```
i=1
while i<=10:
    if i==5:
    break
    Print(i)
    i=i+1
```

* Examples of Continue

```
i=1
while i<=10:
    if i==5:
        i=i+1
        continue
    Print(i) # 1 2 3 4 6 7 8 9 10
    i=i+1
```

* Login program

```
while True:        → Capital T Compulsory
    uname=input("Enter username:")
    Pwd="input("Enter password:")
    if uname="tecno" and Pwd="soft123":
        Print("welcome to TechnoSoft")
*←      break
    else:
        Print("Invalid username or
                Password")
```

```
Dcnt = Vcnt = Ccnt = Scnt = 0
Str = input("Enter string:")
for ch in Str:
    if ((ch >= 'a' and ch <= 'z') OR (ch >= 'A' and
                                      ch <= 'Z')):
        if ch in 'aeiouAEIOU':
            Vcnt += 1
        else: Ccnt += 1
    elif (ch >= '0' and ch <= '9'):
        Dcnt += 1
    else: Scnt += 1
Print("Total no. of Digits:", Dcnt)
Print("Total no. of vowels:", Vcnt)
Print("Total no. of Consonets:", Ccnt)
Print("Total no. of special characters", Scnt)
```

```
4. Login program with 3 attempts

i=1
while i<3:
    uname=input("Enter username:")
    pwd=input("Enter password:")
    if uname=="admin" and pwd=="admin123":
        print("Welcome Technosoft")
        break
    else:
        i=i+1
        print("Invalid username or Password")
else:
    print("Sorry you attempted more than 3 times")

5. Pattern Program

n=int(input("Enter no of rows"))
for i in range(1,n+1):
    print("* "*i)

1
1 2
1 2 3
n=int(input("Enter no of lines:"))
for i in range(1,n+1):
    for j in range(1,i+1):
        print(j,end=" ")
    print()
```

* 5
5 4
5 4 3
5 4 3 2
5 4 3 2 1

for i in range(4, -1, -1):
5 3 -1
5 2 -1
5 1 -1
5 0 -1

n = int(input("Enter no. of rows:")) #5

for i in range(1, n+1):
  for j in range(n, n-i, -1):
    print(j, end=" ")
  print() → this is used for new line.

CSV → comma, separated, @ value

x = "hello" → String
dir(x) → You will get all functions of String
help(x.removeSuffix) → To know about any function of String.

x = [ ] → list
dir(x)

x = { } → dictionary
dir(x)

os.listdir(r"C:/Python_class")
r means: read as it is otherwise it will take \n as new line.

os.system('cls')

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* Login program with 3 attempts.

```
i=1
while i<=3:
    uname=input("Enter username:")
    Pwd=input("Enter Password:")
    if uname=="tecno" and Pwd=="soft9998":
        Print("welcome to TecnoSoft")
        break
    else:
        i=i+1
        Print("Invalid username or Password")
else:
    Print("Sorry, your attempts are over")
```

* Pattern Program.

```
*
**
***
n=int(input("Enter no. of rows:"))
for i in range(1,n+1):
    Print("*"*i)
```

*

```
1
12
123
n=int(input("Enter no. of lines:"))
for i in range(1,n+1):
    for j in range(1,i+1):
        Print(j,end="")
    Print()
```

* files :-

fileobject means Variable.

fileobject = open("filename", "mode")

(b) binary file → unreadable file (audio format)

(t) Text file → Readable file

mode → r → Read

w → Write

A → append

default mode → Read

how to write in a file:

x.write('Hellow\n')

x.close() → close file

1. Open file

2 → W/R/A

3 → close

if you are opening a file with mode

r → if file exist, ok and open

if file does not exists then give error.

W → if file exists, it will overwrite and start from beginning.

A → if file does not exists. it will create. If it with open ... as x → implicitly closes file.

open means, you need to explicitly close.

file Pdf Program .] mail:

* Creating file

```
x = open("a1.txt", "w")
x.write("Hello Python\n")
x.write("It is Simple\n")
x.write("It is easy\n")
x.write("It is portable\n")
x.close()
Print("file created")
```

* Creating file

```
fn = input("Enter a filename to create:")
x = open(fn, "w")
Print("Enter data to the file ( to close
                Press '-1', ...")
While True:
    content = input()
    if content = "-1": break
    x.write(content)
    x.write("\n")
x.close()
Print("file created")
```

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WAP accept empno, ename, sal and calculate bonus based on the following condition
20% on annual salary.

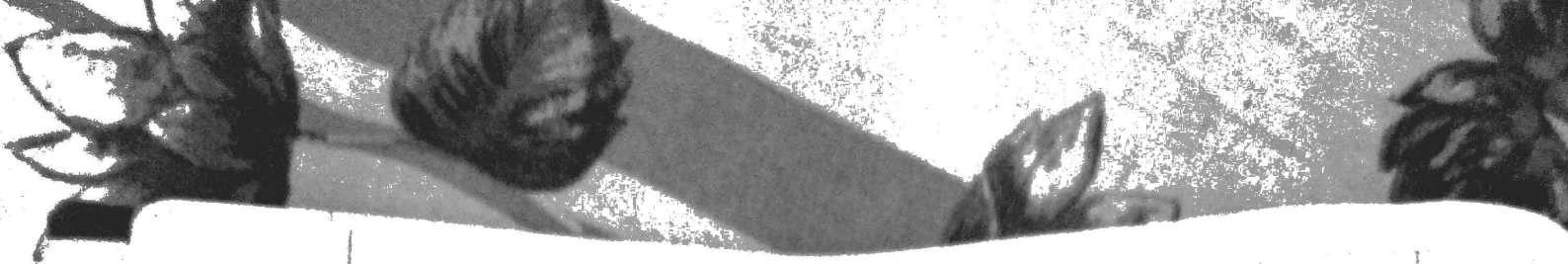
```
empno = int(input("Enter employee number:"))
ename = input("Enter employee name:")
esal = float(input("Enter employee salary:"))
ann_sal = esal * 12
bonus = ann_sal * 20/100
x = open("bonus.txt", "a")
rec = str(empno) + "," + ename + "," + str(esal) +
      "," + str(bonus) + "\n"
x.write(rec)
x.close()
print("Bonus calculated and saved into file")
```

Reading data from file

```
x = open("a1.txt", "r")
k = x.readlines()
print(k)
x.close()
```

WAP accept a file and count total no. of lines in a given file.

```
fn = input("Enter a filename")
x = open(fn, "r")
k = x.readlines()
print("Total no. of lines:", len(k))
x.close()
```



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File attributes

```
x=open("a1.txt","r")
Print("Mode:",x.mode)
Print("Name of the file:",x.name)
Print("closed:",x.closed)
x.close()
print("closed:",x.closed)
```

With open

```
with open("a1.txt","r") as x:
    k=x.read()
    print(k)
    print("closed:",x.closed)
print("closed:",x.closed)
```

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Data structure called as sequences or collections.

List, Touple, Dictionary,

* List: —
a = [10, 20, 30, 40, 50]
Python consider this variable a as list.

⇒ It is a collection of homogenous and hetrogenous elements the list elements must enclosed with [].
The list index start with 0 and reverse index start with -1.
⇒ It is a mutable object.

x = [10, 20, 20]
del x[] → delete data of x
del x → delete object x
x.pop() → return delete value & delete the value of last element

Sorted(x, reverse)

Creating a list

1. a = [10, 20, 30, 40, 50, 60]
b = [10, 22.3, 'Python']
Courses = ['Unix', 'Python', 'Django', 'aws']
States = ['AP', 'TS', 'TN', 'KN', 'UP']
a = [] # empty list

Accessing list elements:

1. Print(a) # [10, 20, 30, 40, 50, 60]
   Print(type(a)) # <class 'list'>
2. Print(a[2]) # 30, 3rd
   Print(a[-1:]) # 60, Last elements
   Print(a[-2:]) # 40, 50, 60, Last 3
   Print(a[:]) # 10, 20, 30, ..., 60
   Print(a[::2]) # 10, 30, 50
3. Print(a[::-1]) # 60, 50, 40, 30, 20, 1

Modifying elements:-

a[2] = 300
Courses[1] = "Python Full Stack"
a[8] = 100 × IndexError

Deleting elements

listobject.methodname()

1. append(element)
   ~~extend~~
2. extend([element1, element2, ...])
3. insert(Position, element)
4. pop([index])
5. remove(element)
6. count(element)
7. index(element)
8. reverse()
9. sort()

10 copy()
11 clear()

List functions :-

x = [10, 30, 500, 70, 200]

1. len():
   Print(len(x)) # 5
2. max(): Print(max(x)) # 500
3. min(): Print(min(x) # 30
4. Sum(): Print(Sum(x) # 900
5. Print(Sum(x)/len(x)) # 180, average
   Sorted():
   Print(Sorted(x)) # [30, 70, 10, 200, 500]
   print(Sorted(x, reverse=True)) # [500, 200, .. 30]
6. enumerate(): It returns index and value
   a = ['unix', 'python', 'django']

⇒ for i in a:
   print(i)

⇒ for i, j in enumerate(a):
   Print(i+1, ":", j)

o/p is:

1 : unix
2 : python
3 : django

```
# Adding elements to the list during runtime
n = int(input("Enter no. of student:"))
x = []
for i in range(1, n+1):
    name = input("Enter student name:")
    x.append(name)
print("Registered student name:")
print(x)
```

OR

```
x=[]
while True:
    name = input("Enter student name [to stop press 'q']:")
    if name in 'q': break
    x.append(name)
print("Registered student name:")
print(x)
```

```
# Store 1 to 10 numbers squares into list
a=[]
for i in range[1,10]:
    n=i*i
    a.append[n]
    print(x)
```

OR

```
# for list comprehension
# listvariable = [expression for loop]
x=[i*i for i in range(1,10)]
print(x)

y=[i*i for i in range(1,10) if i%2==1]
print(x)

x=[[i, i*i, i**3] for i in range(1,10)]
print(x)
```

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write a Python script accept a file and string and delete the string from a file

```
import os
fn = input("Enter filename:")
if os.path.exists(fn):
    if os.path.isfile(fn):
```