INPUT OF PROGRAM (1).

```
#Read a text file line by line and display each word separated by a #.
file = open("1.txt", "r")
data = file.readlines()
for i in data:
   print(i.replace("", "#"))
```

OUTPUT OF PROGRAM (1).

```
#c#o#m#p#u#t#e#r#
```

INPUT OF PROGRAM (2).

```
# Read a text file and displaythe number of
#vowels/consonants/uppercase/lowercase characters in the file.
f=open("test2.txt","r")
cont=f.read()
v=0
cons=0
l_c_l=0
u_c_l=0
for ch in cont:
    if (ch.islower()):
        l_c_l+=1
    elif(ch.isupper()):
        u_c_l+=1
    ch=ch.lower()
    if( ch in ['a','e','i','o','u']):
        v+=1
    elif (ch in ['b','c','d','f','g',
                 'h','j','k','l','m',
                 'n','p','q','r','s',
                 't','v','w','x','y','z']):
        cons+=1
f.close()
print("Vowels are : ",v)
print("consonants are : ",cons)
print("Lower case letters are : ",l_c_l)
print("Upper case letters are : ",u_c_l)
```

OUTPUT OF PROGRAM (2).

```
Vowels are :  39
consonants are :  61
Lower case letters are :  98
Upper case letters are :  2
>>>
```

INPUT OF PROGRAM (3).

```
#Remove all the lines that contain the character 'a' in a file and write it to another file.
print("Remove all the lines that contain the character 'a' in a file and write it to another file. ")
myfile = open("book.txt", "r")
newfile = open("story.txt", "w")
line = myfile.readlines()
print()
print("data in first file ")
print(line)
print()
for data in line:
   if 'a'  not in data:
      newfile.write(data)
newfile= open("story.txt", "r")
line = newfile.readlines()
print("Data get copied in second file")
print(line)
```

OUTPUT OF PROGRAM (3).

```
Remove all the lines that contain the character 'a' in a file and write it to another file.

data in first file
['Write\n', 'a \n', 'Python\n', 'program\n', 'to \n', 'implement \n', 'a \n', 'stack \n', 'using \n', 'list.']

Data get copied in second file
['Write\n', 'Python\n', 'to \n', 'implement \n', 'using \n', 'list.']
>>>
```

INPUT OF PROGRAM (4).

```
#Create a binary file with name and roll number.
#Search for a given roll number and display the name, if not found
#display appropriate messageimport pickle
import sys
import csv
dict={}
def write_in_file():
    file=open("stud2.csv","ab")
    no=int(input("ENTER NO OF STUDENTS: "))
    for i in range(no):
        print("Enter details of student ", i+1)
        dict["roll"]=int(input("Enter roll number: "))
        dict["name"]=input("enter the name: ")
        pickle.dump(dict,file)
    file.close()
def display():
    file=open("stud2.csv","rb")
    try:
        while True:
            stud=pickle.load(file)
            print(stud)
    except EOFError:
        pass
    file.close()
def search():
    file=open("stud2.csv","rb")
    r=int(input("enter the rollno to search: "))
    found=0
    try:
        while True:
            data=pickle.load(file)
            if data["roll"]==r:
```

```
    file.close()
def search():
    file=open("stud2.csv","rb")
    r=int(input("enter the rollno to search: "))
    found=0
    try:
        while True:
            data=pickle.load(file)
            if data["roll"]==r:
                print("The rollno =",r," record found")
                print(data)
                found=1
                break
    except EOFError:
        pass
    if found==0:
        print("The rollno =",r," record is not found")
    file.close()
while True:
    print("MENU \n 1-Write in a file \n 2-display ")
    print(" 3-search\n 4-exit \n")
    ch=int(input("Enter your choice = "))
    if ch==1:
        write_in_file()
    if ch==2:
        display()
    if ch==3:
        search()
    if ch==4:
        print(" Thank you ")
        sys.exit()
```

OUTPUT OF PROGRAM (4).

```
MENU
 1-Write in a file
 2-display
 3-search
 4-exit

Enter your choice = 1
ENTER NO OF STUDENTS: 2
Enter details of student  1
Enter roll number: 2
enter the name: abhigyan
Enter details of student  2
Enter roll number: 4
enter the name: anurag
MENU
 1-Write in a file
 2-display
 3-search
 4-exit

Enter your choice = 2
{'roll': 2, 'name': 'abhigyan'}
{'roll': 4, 'name': 'anurag'}
MENU
 1-Write in a file
 2-display
 3-search
 4-exit

Enter your choice = 3
enter the rollno to search: 2
The rollno = 2  record found
{'roll': 2, 'name': 'abhigyan'}
MENU
 1-Write in a file
 2-display
 3-search
 4-exit

Enter your choice = 4
 Thank you
>>>
```

INPUT OF PROGRAM (5).

```
#Create a binary file with roll number, name and marks.
#Input a roll number and update the marks.
import pickle
f=open("records.dat", "wb")
pickle.dump([1, "Wakil", 90], f)
pickle.dump([2, "Tanish", 80], f)
pickle.dump([3, "Priyashi", 90], f)
pickle.dump([4, "Kanupriya", 80], f)
pickle.dump([5, "Ashutosh", 85], f)
f.close()
f=open("records.dat", "rb")
roll=int(input("Enter the Roll Number: "))
marks=float(input("Enter the updated marks: "))
List = [ ]
flag = False
while True:
    try:
        record=pickle.load(f)
        List.append(record)
    except EOFError:
        break
f.close()
f=open("records.dat", "wb")
for rec in List:
    if rec[0]==roll:
        rec[2] = marks
        pickle.dump(rec, f)
        print("Record updated successfully")
        flag = True
    else:
```

```
f.close()
if flag==False:
    print("This roll number does not exist")
```

OUTPUT OF PROGRAM (5).

```
Enter the Roll Number: 2
Enter the updated marks: 23
Record updated successfully
>>>
```

INPUT OF PROGRAM (6).

```
# Write a random number generator that generates random numbers
#between 1 and 6 (simulates a dice).
import random
def rolladice():
  counter = 0
  myList = []
  while (counter) < 6:
     randomNumber = random.randint(1,6)
     myList.append(randomNumber)
     counter = counter + 1
     if (counter)>=6:
        pass
     else:
        return myList

# Take user input here
n=1
while(n==1):
  n = int(input("Enter 1 to roll a dice and get a random number:"))
  print(rolladice())
```

OUTPUT OF PROGRAM (6).

```
Enter 1 to roll a dice and get a random number:1
[2]
Enter 1 to roll a dice and get a random number:2
[6]
>>>
```

INPUT OF PROGRAM (7).

```
# Write a Python program to implement a stack using list.
class Node:
   def __init__(self, data):
      self.data = data
      self.next = None

class Stack:
   def __init__(self):
      self.head = None

   def push(self, data):
      if self.head is None:
         self.head = Node(data)
      else:
         new_node = Node(data)
         new_node.next = self.head
         self.head = new_node

   def pop(self):
      if self.head is None:
         return None
      else:
         popped = self.head.data
         self.head = self.head.next
         return popped
```

```
a_stack = Stack()
while True:
    print('push <value>')
    print('pop')
    print('quit')
    do = input('What would you like to do? ').split()

    operation = do[0].strip().lower()
    if operation == 'push':
        a_stack.push(int(do[1]))
    elif operation == 'pop':
        popped = a_stack.pop()
        if popped is None:
            print('Stack is empty.')
        else:
            print('Popped value: ', int(popped))
    elif operation == 'quit':
        break
```

OUTPUT OF PROGRAM (7).

```
push <value>
pop
quit
What would you like to do? push 15
push <value>
pop
quit
What would you like to do? push 3
push <value>
pop
quit
What would you like to do? pop
Popped value:  3
push <value>
pop
quit
What would you like to do? pop
Popped value:  15
push <value>
pop
quit
What would you like to do? quit
>>> /
```

INPUT OF PROGRAM (8).

```
#Create a CSV file by entering user-id and password, read and
#search the password for given user id
import csv
with open("user_info.csv", "w") as obj:
    fileobj = csv.writer(obj)
    fileobj.writerow(["User Id", "password"])
    while(True):
        user_id = input("enter id: ")
        password = input("enter password: ")
        record = [user_id, password]
        fileobj.writerow(record)
        x = input("press Y/y to continue and N/n to terminate the program\n")
        if x in "Nn":
            break
        elif x in "Yy":
            continue
with open("user_info.csv", "r") as obj2:
    fileobj2 = csv.reader(obj2)
    given = input("enter the user id to be searched\n")
    for i in fileobj2:
        next(fileobj2)
        # print(i,given)
        if i[0] == given:
            print(i[1])
            break
```

OUTPUT OF PROGRAM (8).

```
enter id: abhigyankushwaha72@gmail.com
enter password: abhigyan111222333888777555
press Y/y to continue and N/n to terminate the program
n
enter the user id to be searched
abhigyankushwaha72@gmail.com
abhigyan111222333888777555
>>>
```

INPUT OF PROGRAM 9(A).

```
#Write a program for Pattern (a)
def alphapat(n):
    num = 65
    for i in range(0, n):
        for j in range(0, i+1):
            ch = chr(num)
            print(ch, end=" ")
            num = num + 1
        print("\r")

n = 5
alphapat(n)
```

OUTPUT OF PROGRAM 9(A).

```
A
B C
D E F
G H I J
K L M N O
>>>
```

INPUT OF PROGRAM 9(B).

```
# Write a program for Pattern (b)
def pypart(n):
    for i in range(0, n):
        for j in range(0, i+1):
            print("* ",end="")
        print("\r")

n = 5
pypart(n)
```

OUTPUT OF PROGRAM 9(B)

```
*
* *
* * *
* * * *
* * * * *
>>>
```

INPUT OF PROGRAM 9(C).

```
#Write a program for Pattern(c)
def pypart2(n):
    k = 2*n - 2
    for i in range(0, n):
        for j in range(0, k):
            print(end=" ")
        k = k - 2
        for j in range(0, i+1):
            print("* ", end="")
        print("\r")
n = 5
pypart2(n)
```

OUTPUT OF PROGRAM 9(C).

```
    *
   * *
  * * *
 * * * *
* * * * *
>>>
```

INPUT OF PROGRAM 9(D).

```
#Write a program for Pattern (d)
def triangle(n):
    k = n - 1
    for i in range(0, n):
        for j in range(0, k):
            print(end=" ")
        k = k - 1
        for j in range(0, i+1):
            print("* ", end="")
        print("\r")

n = 5
triangle(n)
```

OUTPUT OF PROGRAM 9(D).

```
    *
   * *
  * * *
 * * * *
* * * * *
>>>
```

INPUT OF PROGRAM 9(E).

```
# Write a program for Pattern (e)
def numpa(n):
    num = 1
    for i in range(0, n):
        num = 1
        for j in range(0, i+1):
            print(num, end=" ")
            num = num + 1
        print("\r")

n = 4
numpa(n)
```

OUTPUT OF PROGRAM 9(E).

```
1
1 2
1 2 3
1 2 3 4
>>>
```

INPUT OF PROGRAM 9(F).

```
#Write a program for Pattern (f)
def contnum(n):
    num = 1
    for i in range(0, n):
        for j in range(0, i+1):
            print(num, end=" ")
            num = num + 1
        print("\r")


n = 5
contnum(n)
```

OUTPUT OF PROGRAM 9(F).

```
1
2 3
4 5 6
7 8 9 10
11 12 13 14 15
>>>
```

INPUT OF PROGRAM 9(G).

```
#Write a program for Pattern (i)
def alphapat(n):
    num = 65
    for i in range(0, n):
        for j in range(0, i+1):
            ch = chr(num)
            print(ch, end=" ")
            num = num + 1
        print("\r")

n = 5
alphapat(n)
```

OUTPUT OF PROGRAM 9(G).

```
A
B C
D E F
G H I J
K L M N O
>>>
```