# **Computer Record**

#### Program 1.

Aim.

Write a program to accept string as an input and to count and display the total number of times a character is present.

Program.

#### Program 2.

Aim.

Write a program Input a list of elements, create an empty list and add elements divisible by 5 to it. Display the resulting list?

Program.

#### Program 3.

Aim.

Write a program to read a number and check whether it is a prime number.

Program.

#### Program 4.

Aim.

Write a program to implement all the basic operations of a stack.

Program.

#### Program 5.

Aim.

Write a program to Create add\_client and delete\_client methods in Python to add a new client and remove a client from a list of client names, simulating the insertion and deletion operations of a stack data structure.

#### Program 6.

Aim.

Write a program to read a text file by line and display each word separated by a "#"

Program.

#### Program 7.

Aim.

Write a program to read a text file and display the number of vowels, consonants, upper case, lower case characters in file.

Program.

#### Program 8.

Aim.

Write a program to remove all the lines that contain the character "a" in a file and write it to another file.

Program.

#### Program 9.

Aim.

Write a program to create a binary file with name and roll number. Search for a given roll number and display the name, if not found display appropriate message.

Program.

#### Program 10.

Aim.

Write a program to create a binary file with roll number, name and mark. Input a roll number and update the marks.

Program.

#### Program 11.

Aim.

Write a program to create a random number generator that generates random numbers between 1 to 6 simulating a die.

Program.

#### Program 12.

Aim.

Write a Python program to calculate and display the size of a file after removing End-Of-Line (EOL) characters, leading and trailing whitespace, and blank lines.

Program.

#### Program 13.

Aim.

Write a Python program to analyse a sample text file, determine the most commonly occurring word, and display its frequency.

Program.

#### Program 14.

Aim.

Write a Python program that Accepts employee details (Emp\_NO, Name, Salary) from the use and Save the collected data into a binary file using the pickle module. Read the data from the binary file and display it.

Program.

#### Program 15.

Aim.

Write a Python program to create a CSV file storing student information (Roll\_No, Name, Marks). Collect data for 5 students from the user and Save the collected data into the CSV file. Read the content of the CSV file and display it.

Program.

#### **Source Codes**

Program 1:

Program 2:

Program 3:

Program 4:

Program 5:

Program 6:

Program 7:

Program 8:

Program 9:

Program 10:

Program 11:

Program 12:

Program 13:

Program 14:

Program 15:

## Program 1.

#### Aim.

Write a program to accept string as an input and to count and display the total number of times a character is present.

## Program.

```
Enter a sentence: Python is a high-level programming language designed for readability.

Enter a character to count: i

The no of occurrence of i is 6
```

## Program 2.

#### Aim.

Write a program Input a list of elements, create an empty list and add elements divisible by 5 to it. Display the resulting list?

### Program.

```
Enter the no of inputs: 5
Enter element 1: 55
Enter element 2: 25
Enter element 3: 18
Enter element 4: 11
Enter element 5: 3
List 1: [55, 25, 18, 11, 3]
List of number divisible by 5: [55, 25]
```

## Program 3.

#### Aim.

Write a program to read a number and check whether it is a prime number.

## Program.

```
Enter a number: 5
It is a prime no
Enter a number: 55
It is not a prime no
```

## Program 4.

#### Aim.

Write a program to implement all the basic operations of a stack.

## Program.

```
def push(lst):
    x = input("Enter an element: ")
    lst.append(x)
    return True

def pop(lst):
    print("Deleted element: ", lst.pop() if lst else "Stack underflow")
    return True

def peek(lst):
    print("Top element: ", lst[-1] if lst else "Stack underflow")
    return True

def display(lst):
    print("Stack elements: ", lst[::-1] if lst else "Stack underflow")
    return True

def exit(lst):
    print("Program exited Successfully")
    return False
```

```
stack = []
actions = {
    i: push,
    2: pop,
    3: display,
    4: peek,
    5: exit
}

run = True
while run:
    print('''
    i: Push
    2: Pop
    3: Display
    4: Peek
    5: Exit'')
    choice = int(input("Enter your choice (1,2,3,4,5): "))
    action = actions.get(choice)
    run = action(stack)
```

```
1: Push
2: Pop
3: Display
4: Peek
5: Exit
Enter your choice (1,2,3,4,5): 1
Enter an element: Hi

1: Push
2: Pop
3: Display
4: Peek
5: Exit
Enter your choice (1,2,3,4,5): 1
Enter an element: Hello

1: Push
2: Pop
3: Display
4: Peek
5: Exit
Enter your choice (1,2,3,4,5): 1
Enter an element: Hello

1: Push
2: Pop
3: Display
4: Peek
5: Exit
Enter your choice (1,2,3,4,5): 1
Enter an element: 18

1: Push
2: Pop
3: Display
4: Peek
5: Exit
Enter your choice (1,2,3,4,5): 1
Enter an element: 18
```

```
1: Push
2: Pop
3: Display
4: Peek
5: Exit
Enter your choice (1,2,3,4,5): 3
Stack elements: ['18', 'Hello', 'Hi']

1: Push
2: Pop
3: Display
4: Peek
5: Exit
Enter your choice (1,2,3,4,5): 4
Top element: 18

1: Push
2: Pop
3: Display
4: Peek
5: Exit
Enter your choice (1,2,3,4,5): 4
Top element: 18

1: Push
2: Pop
3: Display
4: Peek
5: Exit
Enter your choice (1,2,3,4,5): 2
Deleted element: 18
```

```
1: Push
2: Pop
3: Display
4: Peek
5: Exit
Enter your choice (1,2,3,4,5): 3
Stack elements: ['Hello', 'Hi']

1: Push
2: Pop
3: Display
4: Peek
5: Exit
Enter your choice (1,2,3,4,5): 5
Program exited Successfully
```

#### Program 5.

#### Aim.

Write a program to Create add\_client and delete\_client methods in Python to add a new client and remove a client from a list of client names, simulating the insertion and deletion operations of a stack data structure.

```
def add_client(lst):
    x = input("Enter an client name: ")
    lst.append(x)
    return True

def delete_client(lst):
    print("Deleted Client: ", lst.pop() if lst else "Stack underflow")
    return True

def exit(lst):
    print("Program exited Successfully")
    return False
```

```
stack = []
actions = {
    1: add_client,
    2: delete_client,
    3: exit
}

run = True
while run:
    print('''
    1: Add Client
    2: Delete Client
    3: Exit''')
    choice = int(input("Enter your choice (1,2,3): "))
    action = actions.get(choice)
    run = action(stack)
```

```
1: Add Client
2: Delete Client
3: Exit
Enter your choice (1,2,3): 1
Enter an client name: user1

1: Add Client
2: Delete Client
3: Exit
Enter your choice (1,2,3): 1
Enter an client name: user2
```

```
1: Add Client
2: Delete Client
3: Exit
Enter your choice (1,2,3): 2
Deleted Client: user2

1: Add Client
2: Delete Client
3: Exit
Enter your choice (1,2,3): 3
Program exited Successfully
```

### Program 6.

#### Aim.

Write a program to read a text file by line and display each word separated by a "#"

### Program.

### Output.

Python#is#a#high-level#programming#language#designed#for#readability.#
It#supports#structured,#object-oriented,#and#functional#programming#styles.#
Python's#vast#libraries#make#it#ideal#for#diverse#applications#globally.#

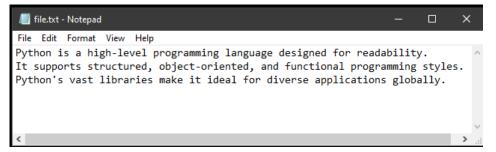
## Program 7.

#### Aim.

Write a program to read a text file and display the number of vowels, consonants, upper case, lower case characters in file.

### Program.

```
text = f.read()
    count_vowels = 0
    count_consonants = 0
    count_upper = 0
    count_lower = 0
    for ch in text:
        if ch.isupper():
            count_upper += 1
        if ch.islower():
           count_lower += 1
        if ch.isalpha():
                count_vowels += 1
                count_consonants += 1
print(f"Vowels: {count_vowels}")
print(f"Consonants: {count_consonants}")
print(f"Uppercase Characters: {count_upper}")
print(f"Lowercase Characters: {count_lower}")
```



```
Vowels: 66
Consonants: 118
Uppercase Characters: 3
Lowercase Characters: 181
```

## Program 8.

#### Aim.

Write a program to remove all the lines that contain the character "a" in a file and write it to another file.

#### Program.

## Program 9.

#### Aim.

Write a program to create a binary file with name and roll number. Search for a given roll number and display the name, if not found display appropriate message.

## Program.

```
import pickle
with open("file.dat", "wb") as f:
    run = True
    while run:
        roll_no = int(input("Enter the Roll No: "))
        name = input("Enter the Name: ")
        pickle.dump( obj: [roll_no, name], f)
        x = int(input("To continue press 1: "))
        if x != 1:
            run = False
```

```
Enter the Roll No: 1
Enter the Name: Aarav
To continue press 1: 1
Enter the Roll No: 2
Enter the Name: Aditya
To continue press 1: 1
Enter the Roll No: 3
Enter the Roll No: 3
Enter the Name: Dinesh
To continue press 1: 0
Enter the Roll No to Search: 2
Roll No: 2 , Name: Aditya
```

# Program 10.

#### Aim.

Write a program to create a binary file with roll number, name and mark. Input a roll number and update the marks.

## Program.

```
import pickle
with open("file.dat", "wb") as f:
    run = True
    while run:
        roll_no = int(input("Enter the Roll No: "))
        name = input("Enter the Name: ")
        mark = float(input("Enter the Mark: "))
        pickle.dump( obj: [roll_no, name, mark], f)
        x = int(input("To continue press 1: "))
        if x != 1:
            run = False
```

```
if not found:
    print("No record found with the given Roll No.")
else:
    g.seek(0)
    g.truncate()
    for record in details:
        pickle.dump(record, g)
```

```
Enter the Roll No: 1
Enter the Name: Aditi
Enter the Mark: 95
To continue press 1: 1
Enter the Roll No: 2
Enter the Name: Anjali
Enter the Mark: 97
To continue press 1: 1
Enter the Roll No: 3
Enter the Name: Yash
Enter the Mark: 99
To continue press 1: 0
Enter the Roll No to Search: 2
Enter new mark: 98.5
Marks changed
Roll No: 2 , Name: Anjali, Marks: 98.5
```

## Program 11.

#### Aim.

Write a program to create a random number generator that generates random numbers between 1 to 6 simulating a die.

#### Program.

```
import random
run = True
while run:
    print("="*15, " Welcome to Die Simulator ", "="*15_)
    x = int(input("To Play Press 1: "))
    if x == 1:
        print(f"You got {random.randint( a: 1, b: 6)}")
    else:
        run = False
    print("="*25, " Thank You ", "="*25, "\n")
```

### Program 12.

#### Aim.

Write a Python program to calculate and display the size of a file after removing End-Of-Line (EOL) characters, leading and trailing whitespace, and blank lines.

#### Program.

```
with open("file1.txt","r") as f:
    data = f.readlines()
    lines = ''
    for line in data:
        if line != "":
            lines += line.strip()

size = len(lines)
print(f" Size of file is {size}.")
```

```
File Edit Format View Help

Python is a high-level programming language designed for readability.

It supports structured, object-oriented, and functional programming styles.

Python's vast libraries make it ideal for diverse applications globally.

This tool is excellent for beginners.
```

```
Size of file is 253.
```

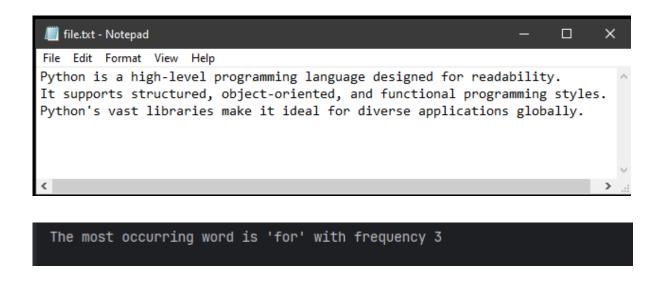
### Program 13.

#### Aim.

Write a Python program to analyse a sample text file, determine the most commonly occurring word, and display its frequency.

#### Program.

```
with open("file.txt", "r") as f:
    data = f.read()
    words = (data.lower()).split()
    max_count = [0, ""]
    for i in words:
        c = words.count(i)
        if c > max_count[0]:
            max_count = [c, i]
    print(f"The most occurring word is '{max_count[1]}' with frequency {max_count[0]}")
```



### Program 14.

#### Aim.

Write a Python program that Accepts employee details (Emp\_NO, Name, Salary) from the use and Save the collected data into a binary file using the pickle module. Read the data from the binary file and display it.

#### Program.

```
import pickle

with open("Employee.dat", "ab") as f:
    while True:
        emp_no = int(input("Enter Employee No: "))
        name = input("Enter Name: ")
        salary = float(input("Enter Salary: "))
        emp_data = [emp_no, name, salary]
        pickle.dump(emp_data, f)
        x = int(input("To add another data, press 1: "))
        if x != 1:
            break
```

## Output.

Enter Employee No: 101 Enter Name: Ram Enter Salary: 20000 To add another data, press 1: 1Enter Employee No: 102 Enter Name: Shazam Enter Salary: 25000 To add another data, press 1:  $\theta$ Employee Details: Employee No : 101 Employee Name : Ram Employee Salary: 20000.0 Employee No : 102 Employee Name : Shazam Employee Salary: 25000.0 End Of Data

### Program 15.

#### Aim.

Write a Python program to create a CSV file storing student information (Roll\_No, Name, Marks). Collect data for 5 students from the user and Save the collected data into the CSV file. Read the content of the CSV file and display it.

### Program.

```
import csv

with open("Students.csv", "w") as f:
    writer = csv.writer(f)
    writer.writerow(["Roll_No", "Name", "Marks"])
    print("*" * 20, "Enter Details", "*" * 20)
    for i in range(1, 6):
        roll_no = int(input("Enter Roll No: "))
        name = input("Enter Name: ")
        mark = float(input("Enter Mark: "))
        details = [roll_no, name, mark]
        writer.writerow(details)
        print("*" * 40)
```

```
with open("Students.csv", "r") as g:
    data = csv.reader(g)
    for row in data:
        if row:
            print(row)
```

# **Source Codes**

### Program 1:

```
def countchar(sentence, character):
    sentence = sentence.lower()
    character = character.lower()
    count = 0
    for char in sentence:
```

## Program 2:

```
def div5():
    list_1, list_2 = [], []
    n = int(input("Enter the no of inputs: "))
    for i in range(1, n+1):
        element = int(input(f"Enter element {i}: "))
        list_1.append(element)
    print(f"List 1: {list_1}")

for j in list_1:
    if j % 5 == 0:
        list_2.append(j)
    print(f"List of number divisible by 5: {list_2}")
```

## Program 3:

```
def prime(no):
    chk = 0
    for i in range(2, (no//2) + 1):
        if no % i == 0:
            chk += 1
    return chk

while True:
    x = int(input("Enter a number: "))
    is_prime = prime(x)

if is_prime != 0:
    print("It is not a prime number!")

else:
    print("It is a prime number")
```

## **Program 4:**

```
def push(lst):
  lst.append(x)
def pop(lst):
  print("Deleted element: ", lst.pop() if lst else "Stack underflow")
def peek(lst):
def display(lst):
def exit(lst):
stack = []
actions = {
  2: pop,
run = True
while run:
  run = action(stack)
)
```

### **Program 5:**

```
def add client(lst):
  lst.append(x)
def delete client(lst):
  print("Deleted Client: ", lst.pop() if lst else "Stack underflow")
def exit(lst):
stack = []
actions = {
run = True
while run:
)
```

# **Program 6:**

```
with open("file.txt", "r") as f:
   for line in f:
      new_line = "#".join(line.split())
      print(new_line + "#")
```

### **Program 7:**

```
with open("file.txt","r") as f:
    text = f.read()
    count_vowels = 0
    count_consonants = 0
    count_upper = 0
    count_lower = 0

for ch in text:
    if ch.isupper():
        count_upper += 1
    if ch.islower():
        count_lower += 1
    if ch.isalpha():
        if ch in "aeiouAEIOU":
            count_vowels += 1
        else:
            count_consonants += 1

print(f"Vowels: {count_vowels}")
print(f"Consonants: {count_consonants}")
print(f"Uppercase Characters: {count_upper}")
print(f"Lowercase Characters: {count_lower}")
```

## **Program 8:**

## **Program 9:**

```
import pickle
with open("file.dat", "wb") as f:
    run = True
    while run:
        roll_no = int(input("Enter the Roll No: "))
        name = input("Enter the Name: ")
```

## Program 10:

```
import pickle
with open("file.dat", "wb") as f:
    run = True
while run:
    roll_no = int(input("Enter the Roll No: "))
    name = input("Enter the Name: ")
    mark = float(input("Enter the Mark: "))
    pickle.dump([roll_no, name, mark], f)
    x = int(input("To continue press 1: "))
    if x != 1:
        run = False

with open("file.dat", "rb+") as g:
    details = []
    try:
        while True:
            details.append(pickle.load(g))
    except EOFError:
        pass

found = False
    r_no = int(input("Enter the Roll No to Search: "))
    for i, line in enumerate(details):
        if line[0] == r_no:
            mrk = float(input("Enter new mark: "))
            details[i][2] = mrk
        found = True
```

```
print("Marks changed")
    print(f"Roll No: {line[0]} , Name: {line[1]}, Marks: {line[2]}")
    break

if not found:
    print("No record found with the given Roll No.")

else:
    g.seek(0)
    g.truncate()
    for record in details:
        pickle.dump(record, g)
```

### Program 11:

```
import random
run = True
while run:
    print("="*15, " Welcome to Die Simulator ", "="*15 )
    x = int(input("To Play Press 1: "))
    if x == 1:
        print(f"You got {random.randint(1, 6)}")
    else:
        run = False
    print("="*25, " Thank You ", "="*25, "\n")
```

## Program 12:

)

```
with open("file1.txt","r") as f:
   data = f.readlines()
   lines = ''
   for line in data:
       if line != "":
            lines += line.strip()

size = len(lines)
print(f" Size of file is {size}.")
```

### Program 13:

(

```
with open("file.txt", "r") as f:
    data = f.read()
    words = (data.lower()).split()
    max_count = [0, ""]
    for i in words:
        c = words.count(i)
        if c > max_count[0]:
            max_count = [c, i]
    print(f"The most occurring word is '{max_count[1]}' with frequency
{max_count[0]}")
```

## Program 14:

)

```
import pickle
with open("Employee.dat", "ab") as f:
  while True:
       salary = float(input("Enter Salary: "))
       emp data = [emp no, name, salary]
      pickle.dump(emp data, f)
with open("Employee.dat", "rb") as g:
      while True:
           emp = pickle.load(g)
Employee No : \{emp[0]\}
Employee Name : {emp[1]}
Employee Salary: {emp[2]}\n''')
```

# Program 15:

(

```
with open("Students.csv", "w") as f:
  for row in data:
```