પુ•ના International School

Shree Swaminarayan Gurukul, Zundal

GRADE : XII

COMPUTER SCIENCE

PRACTICAL FILE

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Program 1: Program to read and display file content line by line with each word separated by " #"

```
#Program to read content of file line by
line#and display each word separated by
'#'

f = open("file1.txt")
for line in f:
        words =
        line.split()
        for w in
        words:
                print(w+'#',end='')
                print()
          f.close()
```

NOTE : if the original content of file is:

```
India is my
countryI love
python
Python learning is fun
```

OUTPUT

```
India#is#my#country#
I#love#python#
Python#learning#is#fun
#
```

Program 2: Program to read the content of file and display the total numberof consonants, uppercase, vowels and lower case characters.

```
#Program to read content of file
#and display total number of vowels, consonants, lowercase and uppercase characters

f = open("file1.txt")
v=0
c=0
u=0
l=0
o=0
data = f.read()
vowels=['a','e','i','o','u']
for ch in data:
        if ch.isalpha():
                if ch.lower() in vowels:
                        v+=1
                else:
                        c+=1
        if ch.isupper():
                u+=1
        elif ch.islower():
                l+=1
        elif ch!=' ' and ch!='\n':
                o+=1
print("Total Vowels in file              :",v)
print("Total Consonants in file      n    :",c)
print("Total Capital letters in file     :",u)
print("Total Small letters in file       :",l)
print("Total Other than letters           :",o)
f.close()
```

NOTE : if the original content of file is:

India is my countryI
love python
Python learning is fun123@

OUTPUT

Total Vowels in file : 16
Total Consonants in file n : 30
Total Capital letters in file : 2
Total Small letters in file : 44
Total Other than letters : 4

Program 3: Program to read the content of file line by line and write it toanother file except for the lines contains „a‟ letter in it.

```
#Program to read line from file and write it to another line
#Except for those line which contains letter 'a'

f1 = open("file2.txt")
f2 = open("file2copy.txt","w")

for line in f1:
        if 'a' not in line:
                f2.write(line)
print("## File Copied Successfully! ##")
f1.close()
f2.close()
```

NOTE: Content of file2.txt

a quick brown fox
one two three four
five six seven
India is my
countryeight nine
ten
bye!

OUTPUT

```
## File Copied Successfully! ##
```

NOTE: After copy content of file2copy.txt

one two three four
five six seven
eight nine ten
bye!

Program 4: Program to create binary file to store Rollno and Name, Searchany Rollno and display name if Rollno found otherwise "Rollno not found"

```
#Program to create a binary file to store Rollno and name#Search
for Rollno and display record if found #otherwise "Roll no. not
found"

import pickle
student=[]
f=open('student.dat','wb')
ans='y'
while ans.lower()=='y':
        roll = int(input("Enter Roll Number :"))name
        = input("Enter Name :")
        student.append([roll,name]) ans=input("Add
        More ?(Y)")
pickle.dump(student,f)
f.close()
f=open('student.dat','rb')
student=[]
while True:
        try:
                student = pickle.load(f)
        except EOFError:
                break
ans='y'

while ans.lower()=='y':
        found=False
        r = int(input("Enter Roll number to search :"))for s
        in student:
                if s[0]==r:
                        print("## Name is :",s[1], " ##")
                        found=True
                        break
        if not found:
                print("####Sorry! Roll number not found ####")
        ans=input("Search more ?(Y) :")
f.close()
```

OUTPUT

```
Enter Roll Number
:1Enter Name  :Amit
Add More ?(Y)y

Enter Roll Number
:2Enter Name :Jasbir
Add More ?(Y)y

Enter Roll Number
:3Enter Name :Vikral
Add More ?(Y)n

Enter Roll number to search
:2## Name is : Jasbir ##
Search more ?(Y) :y

Enter Roll number to search
:1## Name is : Amit ##
Search more ?(Y) :y

Enter Roll number to search :4
####Sorry! Roll number not found ####
Search more ?(Y) :n
```

Program 5: Program to create binary file to store Rollno,Name and Marksand update marks of entered Rollno.

```
#Program to create a binary file to store Rollno and name#Search
for Rollno and  display  record  if  found #otherwise "Roll no. not
found"

import pickle
student=[]
f=open('student.dat','wb')
ans='y'
while ans.lower()=='y':
        roll = int(input("Enter Roll Number :"))name
        = input("Enter Name :")
        marks  =  int(input("Enter  Marks  :"))
        student.append([roll,name,marks])
        ans=input("Add More ?(Y)")
pickle.dump(student,f) f.close()
f=open('student.dat','rb+')
student=[]
while True:
        try:
                student = pickle.load(f)
        except EOFError:
```

```
                    break
ans='y'
while ans.lower()=='y':
        found=False
        r = int(input("Enter Roll number to update :"))for s in
        student:
                if s[0]==r:
                        print("## Name is :",s[1], " ##")
                        print("## Current Marks is :",s[2]," ##")m =
                        int(input("Enter new marks :")) s[2]=m
                        print("## Record Updated ##")
                        found=True
                        break
        if not found:
                print("####Sorry! Roll number not found ####")ans=input("Update more ?(Y)
        :")
f.close()
```

OUTPUT

```
Enter Roll Number
:1Enter Name :Amit
Enter Marks :99
Add More ?(Y)y

Enter Roll Number
:2Enter Name
:Vikrant Enter
Marks :88
Add More ?(Y)y

Enter Roll Number
:3Enter Name :Nitin
Enter Marks :66
Add More ?(Y)n

Enter Roll number to update
:2## Name is : Vikrant ##
## Current Marks is : 88 ##
Enter new marks :90
## Record Updated ##
Update more ?(Y) :y

Enter Roll number to update
:2## Name is : Vikrant ##
## Current Marks is : 90 ##
Enter new marks :95
## Record Updated ##
Update more ?(Y) :n
```

Program 6: Program to generate random number 1-6, simulating a dice.

```
# Program to generate random number between 1 - 6# To
simulate the dice
import randomimport
time
print("Press CTRL+C to stop the dice ")
play='y'
while play=='y':
        try:
                while True:
                        for i in range(10):
                                print()
                        n = random.randint(1,6)
                        print(n,end='')
                        time.sleep(.00001)
        except KeyboardInterrupt: print("Your
                Number is :",n) ans=input("Play
                More? (Y) :")
                if ans.lower()!='y':
                        play='n'
                        break
```

OUTPUT

```
4Your Number is : 4
Play More? (Y) :y Your
Number is : 3Play More?
(Y) :y Your Number is : 2
Play More? (Y) :n
```

Program 7: Program to implement Stack in Python using List.

```
def isEmpty(S):
        if len(S)==0:
                return True
        else:
                return False


def Push(S,item):
        S.append(item)
        top=len(S)-1

def Pop(S):
        if isEmpty(S):
                return "Underflow"
        else:
                val = S.pop()if
```

```
                len(S)==0:
                        top=None
                else:
                        top=len(S)-1
                return val

    def Peek(S):
        if isEmpty(S):
                return "Underflow"
        else:
                top=len(S)-1
                return S[top]


    def Show(S):
        if isEmpty(S):
                print("Sorry No items in Stack ")
        else:
                t = len(S)-1
                print("(Top)",end=' ')
                while(t>=0):
                        print(S[t],"<==",end=' ')t-
                        =1
                print()


                # main
begins hereS=[] #Stack
top=None
    while True:
        print("**** STACK DEMONSTRATION ******")
        print("1. PUSH ")
        print("2. POP")
        print("3. PEEK")
        print("4. SHOW STACK ")
        print("0. EXIT")
        ch = int(input("Enter your choice :"))if
        ch==1:
                val = int(input("Enter Item to Push :"))
                Push(S,val)
        elif ch==2:
                val = Pop(S)
                if val=="Underflow":
                        print("Stack is Empty")
                 else:
                        print("\nDeleted Item was :",val)
         elif ch==3:
                val = Peek(S)
                if val=="Underflow":
                        print("Stack Empty")
                 else:
```

```
        elif ch==4:
                print("Top Item :",val)
            Show(S)
        elif ch==0:
            print("Bye")
            break
```

OUTPUT

```
**** STACK DEMONSTRATION ******
1. PUSH
2. POP
3. PEEK
4. SHOW STACK
0. EXIT
Enter your choice :1
Enter Item to Push :10
**** STACK DEMONSTRATION ******
1. PUSH
2. POP
3. PEEK
4. SHOW STACK
0. EXIT
Enter your choice :1
Enter Item to Push :20

**** STACK DEMONSTRATION ******
1. PUSH
2. POP
3. PEEK
4. SHOW STACK
0. EXIT
Enter your choice :1
Enter Item to Push :30

**** STACK DEMONSTRATION ******
1. PUSH
2. POP
3. PEEK
4. SHOW STACK
0. EXIT
Enter your choice :4
(Top) 30 <== 20 <== 10 <==

**** STACK DEMONSTRATION ******
1. PUSH
2. POP
3. PEEK
```

4. SHOW STACK
0. EXIT
Enter your choice :3Top
Item : 30

**** STACK DEMONSTRATION ******
1. PUSH
2. POP
3. PEEK
4. SHOW STACK
0. EXIT
Enter your choice :2 Deleted

Item was : 30

****STACKDEMONSTRATI*****

1. PUSH
2. POP
3. PEEK
4. SHOW STACK
0. EXIT
Enter your choice :4(Top) 20
<== 10 <==

**** STACK DEMONSTRATION ******
1. PUSH
2. POP
3. PEEK
4. SHOW STACK
0. EXIT
Enter your choice :0
Bye

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("7.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("7.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
```