SAMPLE QUESTION PAPER–I

CLASS XII

COMPUTER SCIENCE (083)

TIME: 3 hrs **M.M: 70**

General Instructions:

- All questions are compulsory.
- Question paper is divided into 4 sections A, B, C and D.
  - ☞ Section A: Unit-1
  - ☞ Section B: Unit-2
  - ☞ Section C: Unit-3
  - ☞ Section D: Unit-4

1. (a) Name the Python Library modules which need to be imported to invoke the following functions: (1)

(i) floor()

(ii) randn()

Ans. (i) math

(ii) random

(b) What type of objects can be used as keys in dictionaries? (1)

Ans. Only immutable type objects (i.e. Numbers, Strings, Tuples) can be used as keys in dictionaries.

(c) What are two ways to remove something from a list? Write syntax only for both. (1)

Ans.
- pop() method to remove single element using index
- remove() method to remove single element using value

(d) Observe the following Python code very carefully and rewrite it after removing all syntactical errors with each correction underlined. (2)

```
DEF execmain():
    x = input("Enter a number:")
    if (abs(x)= x):
        print"You entered a positive number"
    else:
        x=*-1
        print"Number made positive:"x
execmain()
```

Ans. Corrected Code:

```
def execmain():
    x = input("Enter a number:")
    if (abs(x)== x):
        print("You entered a positive number")
    else:
        x *= -1
        print("Number made positive:",x)
execmain()
```

(e) Find the output of the following: (2)

```
L1 = [100,900,300,400,500]
START = 1
SUM = 0
for C in range(START,4):
    SUM = SUM + L1[C]
    print(C, ":", SUM)
    SUM = SUM + L1[0]*10
    print(SUM)
```

Ans. Output is:

```
1 : 900
1900
2 : 2200
3200
3 : 3600
4600
```

(f) Write the output of the following Python program code: (3)

```
A = [10,12,15,17,20,30]
for i in range(0,6):
    if (A[i] % 2 == 0):
        A[i] /= 2
    elif (A[i] % 3 == 0):
        A[i] /= 3
    elif (A[i] % 5 == 0):
        A[i] /= 5
for i in range(0,6):
    print(A[i],end= "#")
```

Ans. Output is:

```
5.0#6.0#5.0#17#10.0#15.0#
```

(g) What are the possible outcomes executed from the following code? Also, specify the maximum and minimum values that can be assigned to variable COUNT. (2)

```
import random
TEXT = "CBSEONLINE"
COUNT = random.randint(0,3)
C=9
while TEXT[C] != 'L':
    print(TEXT[C]+TEXT[COUNT]+'*',end=" ")
    COUNT= COUNT + 1
    C = C-1
```

(i) EC* NB* IS*
(ii) NS* IE* LO*
(iii) ES* NE* IO*
(iv) LE* NO* ON*

Ans. The possible outcomes are: (i) and (iii)

Minimum value of count is 0

Maximum value of count is 3

2. (a) When is a global statement used? Why is its use not recommended? (1)

Ans. Global statement is used when the mentioned variable to be used from global environment/scope. The use of global statement is always discouraged as with this programmers tend to lose the control over variables and their scope.

(b) Can a function return multiple values? How? (1)

Ans. Yes, a function can return multiple values by storing the returning values into individual object variables or in tuple object.

```
def fn():
    return a,b,c,d
```

Calling:

```
i,j,k,l = fn()
```

or

```
t1 = tuple()
t1 = fn()
```

(c) What is the output of the following code: (1)

```
a = 1
def f():
    a = 10
print(a)
```

Ans. 1, the object a inside will not be executed as function f() is not called.

(d) Which file must be present inside a directory to be considered by Python as a library? (1)

Ans. _init_.py

(e) What is namespace in Python? (1)

Ans. Namespace is a named logical environment holding logical and grouping of related objects within a namespace, its member object is referred without any prefix.

(f) Convert the following for loop into a while loop: (2)

```
for k in range (10,20,5):
    print(k)
```

Ans.

```
k=10
while k<20:
    print(k)
    k=k+5
```

(g) Find the output of following: (2)

```
colors=["violet", "indigo", "blue", "green", "yellow", "orange", "red"]
del colors[4]
colors.remove("blue")
colors.pop(3)
print(colors)
```

Ans. Output is:

```
['violet', 'indigo', 'green', 'red']
```

(h) Find the output of the following: (2)

```
str = "Pythonforbeginners is easytolearn"
str2 = "easy"
print("The first occurrence of str2 is at : ", end="")
print(str.find(str2, 4))
print("The last occurrence of str2 is at : ", end="")
print(str.rfind(str2, 4))
```

Ans. Output is:

```
The first occurrence of str2 is at : 22
The last occurrence of str2 is at : 22
```

(i) Consider the following unsorted list: 95 79 19 43 52 3. Write the passes of bubble sort for sorting the list in ascending order till the 3rd iteration. (3)

OR

Rewrite the following code in Python after removing all syntax error(s). Mark each correction done in the code.

```
Val = int(input("Value:"))
Adder = 0
For C in range(1,Val,3)
    Adder += C
    if C%2 = 0;
        print(C*10)
    Else:
        print(C*)
    print(Adder)
```

Ans. [79, 19, 43, 52, 3, 95]
[19, 43, 52, 3, 79, 95]
[19, 43, 3, 52, 79, 95]

OR

Ans.
```
Val = int(input("Value:"))
Adder =0
for C in range(1,Val,3): #Error1
    Adder += C
    if C%2 = 0:          #Error2
        print(C*10)
    else:                #Error3
        print(C)         #Error4
    print(Adder)
```

(j) Write a recursive function that computes the sum of number 1……n ; get the value of last number n from the user. (4)

OR

Write a recursive function that could print a string backwards.

Ans.
```
def compute(num):
    if num == 1:
        return 1
    else:
        return num + compute(num-1)
#main
n = int(input("Enter any integer : "))
sum = compute(n)
print("The sum of series from 1 to given number is : ", sum)
```

OR

Ans.
```
def bp(strg,n):
    if n>0:
        print(strg[n], end='')
        bp(strg,n-1)
    elif n==0:
        print(strg[0])
#main
s=input("Enter any string : ")
bp(s, len(s)-1)
```

SECTION–B

3. (a) _____ provides a connection-oriented reliable service for sending messages. (1)

Ans. TCP (Transmission Control Protocol)

(b) The last address of IP address represents _____ . (1)

Ans. Broadcast Address

(c) IPV4 Address is _____ . (1)

Ans. 32 bits

(d) A system designed to prevent unauthorized access is termed as a_____ . (1)

Ans. Firewall

(e) Expand the following: (2)

(i) VoIP
(ii) SMTP
(iii) TDMA
(iv) TCP/IP

Ans. (i) Voice over Internet Protocol
(ii) Simple Mail Transfer Protocol
(iii) Time Division Multiple Access
(iv) Transmission Control Protocol/Internet Protocol

(f) Write the difference between IPv-4 and IPv-6. (2)

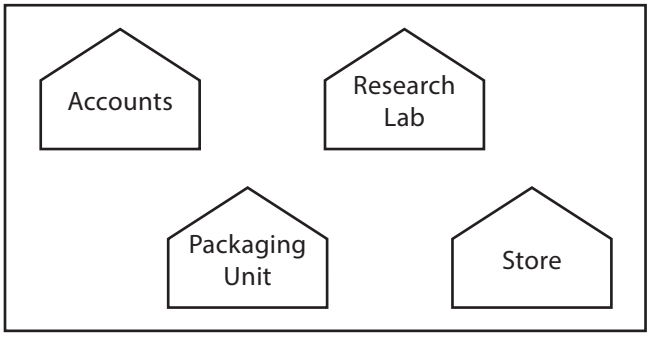
Ans. The difference between IPv4 and IPv6 Addresses lies in the fact that an IP address is binary numbers but can be stored as text for human readers. For example, a 32-bit numeric address (IPv4) is written in decimal as four numbers separated by periods. IPv6 addresses are 128-bit IP address written in hexadecimal and separated by colons.

(g) Write the purpose of following commands: (3)

(i) whois
(ii) ipconfig
(iii) nslookup

Ans. (i) **whois:** Lookup tool finds contact information for the owner of a specified IP address. The ipwhois Lookup tool displays as much information as possible for a given IP address.
(ii) **ipconfig:** In Windows, ipconfig is a console application designed to run from the Windows command prompt. This utility allows you to get the IP address information of a Windows computer. It also allows some control over active TCP/IP connections.
(iii) **nslookup:** It is a network administration command-line tool available for many computer operating systems. It is used for querying the Domain Name System (DNS) to obtain domain name or IP address mapping information.

(h) Riana Medicos Centre has set up its new centre in Dubai. It has four buildings as shown in the diagram given below: (4)



Distance between various buildings is as follows:

Accounts to Research Lab	55 m
Accounts to Store	150 m
Store to Packaging Unit	160 m
Packaging Unit to Research Lab	60 m
Accounts to Packaging Unit	125 m
Store to Research Lab	180 m

Number of computers:

Accounts	25
Research Lab	100
Store	15
Packaging Unit	60

As a network expert, provide the best possible answer to the following queries:

(i) Suggest the type of network established between the buildings.

(ii) Suggest the most suitable place (i.e., building) to house the server of this organization.

(iii) Suggest the placement of the following devices with justification: Repeater, Switch

(iv) Suggest a system (hardware/software) to prevent unauthorized access to or from the network.

Ans. (i) LAN (Local Area Network)

Ans. (ii) Research Lab as it has the maximum number of computers.

Ans. (iii) (a) Repeater: It should be placed between Accounts and Packaging Unit, Accounts to Research Lab, Store to Research Lab and Accounts to Packaging Unit.

(b) Switch should be placed in each of the buildings for better traffic management.

Ans. (iv) Firewall.

SECTION–C

4. (a) Write the difference between GET and POST method. (1)

Ans. A web browser may be the client and an application on a computer that hosts a website may be the server. So, to request a response from the server, there are mainly two methods:

(i) **GET** : to request data from the server

(ii) **POST** : to submit data to be processed to the server

(b) What is Django? (1)

Ans. Django is a Web framework written in Python. But that's an abstract definition. In practice, Django is a Python package that lives inside the site-packages directory of your current Python installation.

(c) Which method is used to retrieve all rows and single row? (1)

Ans. fetchall(), fetchone()

(d) Consider the table 'empsalary'. (1)

eid	esalary
101	40000
102	NULL
104	51000
107	NULL

To select tuples with some esalary, Arun has written the following erroneous SQL statement: SELECT eid, esalary FROM empsalary WHERE esalary = something;

Write the correct SQL statement.

Ans. The correct SQL statement is:

SELECT eid, esalary FROM empsalary WHERE esalary is NOT NULL;

(e) Write a MySQL-Python connectivity to retrieve data, one record at a time, from city table for employees with id less than 10. (2)

Ans.
```
import MySQLdb as my
try:
    db = my.connect(host="localhost", user="root", passwd="",
                    database="India")
    cursor = db.cursor()
    sql = "select * from city where id < 10"
    number_of_rows = cursor.execute(sql)
    print(cursor.fetchone()) # fetch the first row only
    db.close()
except my.DataError as e:
    print("DataError")
    print(e)
```

(f) Write a Python program to plot the algebraic equation: 10x + 14. (2)

Ans.
```
#Program to evaluate an algebraic expression 10x + 14 using Line Chart
import numpy as np
from matplotlib import pyplot as plt
x = np.arange(12, 20)
y = 10 * x + 14
plt.title("Graph for an Algebraic Expression")
plt.xlabel("x axis")
plt.ylabel("y label")
plt.plot(x,y)
plt.show()
```

(g) What are the basic steps to connect Python with MYSQL using table Members present in the database 'Society'? (3)

Ans.
```
import MySQLdb
conn = MySQLdb.connect(host="localhost", user="root", password =" ",
                               database="Society")
cursor = conn.cursor()
cursor.execute('SELECT COUNT(MemberID) as count FROM Members WHERE id = 1')
row = cursor.fetchone()
conn.close()
print(row)
```

(h) Table COACHING is shown below. Write commands in SQL for (i) to (iii) and output for (iv) and (v). (4)

Table: COACHING

ID	NAME	AGE	CITY	FEE	PHONE
P1	SAMEER	34	DELHI	45000	9811076656
P2	ARYAN	35	MUMBAI	54000	9911343989
P4	RAM	34	CHENNAI	45000	9810593578
P6	PREMLATA	36	BHOPAL	60000	9910139987
P7	SHIKHA	36	INDORE	34000	9912139456
P8	RADHA	33	DELHI	23000	8110668888

(i) Write a query to display name in descending order whose age is more than 23.

Ans. Select name from coaching where age>23 order by name desc;

(ii) Write a query to find the average fee grouped by age from customer table.

Ans. Select avg(fee) from coaching group by age;

(iii) Write query details from coaching table where fee is between 30000 and 40000.

Ans. Select * from coaching table where fee is between 30000 and 40000;

(iv) Select sum(Fee) from coaching where city like "%O% ;

Ans. 94000

(v) Select name, city from coaching group by age having count(age)>2;

Ans. Empty set

SECTION–D

5. (a) What are the proper methods and steps for the disposal of used electronic items? (1)

Ans. Explanation about any methods like:

- Landfilling
- Acid Bath
- Incineration
- Recycling of e-waste
- Reuse of electronic devices

(b) Mention the sources from where phishing activities can happen. (1)

Ans. Phishing is accomplished through online means, *i.e.*, through the use of email, social media and other internet-based methods.

(c) What is Digital Certificate? How does it help in DRM? (2)

Ans. A digital certificate, known as a public key certificate, is used to cryptographically link ownership of a public key with the entity that owns it. It is issued by a Certificate Authority (CA). Digital Rights Management (DRM) systems provide you with the ability to control how people can consume your content. To validate the control of the digital content, digital certificates are issued to authenticate or validate the identity of the parties involved in the DRM systems.

(d) How can we recycle e-waste safely? (2)

Ans. (i) Use a certified e-waste recycler.

(ii) Visit civic institutions. Check with your local government, schools and universities for additional responsible recycling options.

(iii) Explore retail options.

(iv) Donate your electronics.

(e) What is meant by the term Cyber Forensics? (2)

Ans. Cyber forensics is an electronic discovery technique used to determine and reveal technical criminal evidence. It often involves electronic data storage extraction for legal purposes. Although still in its infancy, cyber forensics is gaining traction as a viable way of interpreting evidence. Cyber forensics is also known as computer forensics.

(f) Mention any one social and economic benefit of technology. (2)

Ans. Social benefit: Social networking sites help people stay in touch with their near and dear ones.

Economic benefit: It helps the economy grow at a faster rate, provides transparency and increases accountability.

SAMPLE QUESTION PAPER–II

CLASS XII

COMPUTER SCIENCE (083)

TIME: 3 hrs **M.M: 70**

General Instructions:

- All questions are compulsory.
- Question paper is divided into 4 sections A, B, C and D.
  - ☞ Section A: Unit-1
  - ☞ Section B: Unit-2
  - ☞ Section C: Unit-3
  - ☞ Section D: Unit-4

1. (a) Identify and write the name of the module to which the following functions belong: (1)

(i) ceil()

(ii) findall()

Ans. (i) ceil() – math module

(ii) findall() – re module

(b) Which of the following can be used as valid variable identifier(s) in Python? (1)

My.file, _count, For, 2digits, 4thSu, Total, Number#, Name1

Ans. Valid Identifier:- _count, For, Total, Name1

(c) Find the output of the following code: (1)

```
def CALLME(n1=1, n2=2):
    n1=n1*n2
    n2+=2
    print(n1, n2)
CALLME()
CALLME(2,1)
CALLME(3)
```

Ans.
```
2 4
2 3
6 4
```

(d) Which of the following can be used as valid variable identifier(s) in Python? (2)

(i) 4thSum

(ii) Total

(iii) Number#

(iv) Data

Ans. (ii) Total (iv) Data

(e) Find and write the output of the following Python code: (2)

```
TXT = ["20","50","30","40"]
CNT = 3
TOTAL = 0
for C in [7,5,4,6]:
    T = TXT[CNT]
    TOTAL = float(T) + C
    print(TOTAL)
    CNT -= 1
```

Ans.
```
47.0
35.0
54.0
26.0
```

(f) Rewrite the following code in Python after removing all syntax error(s). Underline each correction done in the code. (3)

```
STRING=""HAPPY NEW YEAR"
for S in range[0,8]:
print STRING(S)
print S+STRING
```

Ans.

```
STRING = "HAPPY NEW YEAR"
for S in range(0,14):
    print(STRING[S])
    print(S,STRING)
```

(g) What output will be generated when the following Python code is executed? (2)

```
def ChangeList():
    L=[]
    L1=[]
    L2=[]
    for i in range(1, 10):
        L.append(i)
    for i in range(10,1,-2):
        L1.append(i)
    for i in range(len(L1)):
        L2.append(L1[i]+L[i])
    L2.append(len(L)-len(L1))
    print(L2)
ChangeList()
```

Ans. `[11, 10, 9, 8, 7, 4]`

2. (a) What does stdin, stdout represent? (1)

Ans. stdin represents standard input device and stdout represents standard output device which are represented as files.

(b) What problem occurs with the following code on execution: (1)

```
X=40
while X < 50:
    print(X)
```

Ans. The given code does not have the incrementing value of X, thus the loop becomes endless.

(c) Which module needs to be imported for showing data in chart form? (1)

Ans. matplotlib

(d) Rewrite the following Python code after removing all syntax error(s). Underline the corrections done. (1)

```
def main():
    r = input('enter any radius :')
    a = pi * math.pow(r,2)
    print("Area = " + a)
```

Ans. Corrected Code:

```
import math
def main():
    r = int(input('enter any radius :'))
    a = math.pi * math.pow(r,2)
    print("Area = " , a)
```

(e) Write down name of functions to create line chart and bar chart. (1)

Ans. plot(), scatter(), bar(), barh() etc

(f) Study the following program and select the possible output(s) from options (i) to (iv) following it. Also, write the maximum and the minimum values that can be assigned to variable Y. (2)

```
import random
X= random.random()
Y= random.randint(0,4)
print(int(X),":",Y+int(X))
```

(i) 0 : 0 (ii) 1 : 6
(iii) 2 : 4 (iv) 0 : 3

Ans. (i) and (iv) are the possible outputs. Minimum value that can be assigned is – Y = 0. Maximum value that can be assigned is – Y = 3.

(g) List one similarity and one difference between List and Dictionary data type. (2)

Ans. Similarity: Both List and Dictionary are mutable data types.

Dissimilarity: List is a sequential data type, *i.e.*, it is indexed. Dictionary is a mapping data type. It consists of key: value pair.

For example, L = [1, 2, 3, 4, 5] is a list.

D = {1:"Ajay", 2:"Prashant", 4:"Himani"} is a dictionary where 1, 2, and 4 are keys and "Ajay", "Prashant", "Himani" are their corresponding values.

(h) Rewrite the following Python program after removing all the syntactical errors (if any), underlining each correction: (2)

```
def checkval:
    x = input("Enter a number")
    if x % 2 = 0:
        print x, "is even"
    else if x<0:
        print x, "should be positive"
    else;
        print x, "is odd"
```

Ans. Corrected Code:

```
def checkval():
    x = int(input("Enter a number:"))
    if x % 2 == 0:
        print(x, "is even")
    elif x<0:
        print(x, "should be positive")
    else:
        print(x, "is odd")
```

(i) Find the output of the following Python program: (3)

```
def makenew(mystr):
    newstr = ""
    count = 0
    for i in mystr:
        if count%2 != 0:
            newstr = newstr + str(count)
        else:
            if i.islower():
                newstr = newstr + i.upper()
            else:
                newstr = newstr + i
        count += 1
    newstr = newstr + mystr[:1]
    print("The new string is:", newstr)
makenew("sTUdeNT")
```

Ans. `The new string is: S1U3E5Ts`

(j) Write a program to read data from data file in read mode and count the particular word occurrences in given string, number of times in Python. (4)

Ans.
```
def compute(num):
f=open("test.txt","r")
read=f.readlines()
f.close()
#The variable has been created to show the number of types the loop runs
times=0
#The variable has been created to show the number of types the loop runs
times2=0
chk=input("Enter String to search:")
count=0
for sentence in read:
    line=sentence.split()
    times+=1
for each in line:
    line2=each
    times2+=1
    if chk==line2:
        count+=1
print("The search String:", chk, "is present:", count, "times")
print(times)
print(times2)
```

SECTION–B

3. (a) DNS is the abbreviation of _____ . (1)

Ans. Domain Name System

(b) Each IP packet must contain _____ address. (1)

Ans. Source and Destination

(c) _____ provides a connection-oriented reliable service for sending messages. (1)

Ans. TCP (Transmission Control Protocol)

(d) _____ is a device that forwards data packets along networks. (1)

Ans. Router

(e) Expand the following: (2)

(i) URL
(ii) ADSL
(iii) SCP
(iv) SMTP

Ans.
(i) Uniform Resource Locator
(ii) Asymmetric Digital Subscriber Line
(iii) Session Control Protocol
(iv) Simple Mail Transfer Protocol

(f) Write down the differences between private cloud and public cloud. (2)

Ans.

Public Cloud	Private Cloud
Public cloud refers to a common cloud service made available to multiple subscribers.	Consists of computing resources used exclusively owned by one business or organization.
Cloud resources are owned and operated by third party cloud service provider and delivered over the internet.	Services and infrastructure are always maintained on a private network and the hardware and software are dedicated solely to one organization.
Microsoft Azure, Google drive, Amazon Cloud Drive, iCloud etc.	Used by Government agencies, financial institutions, mid- and large-sized organization

(g) Write the purpose of following commands: (3)

(i) whois

(ii) ipconfig

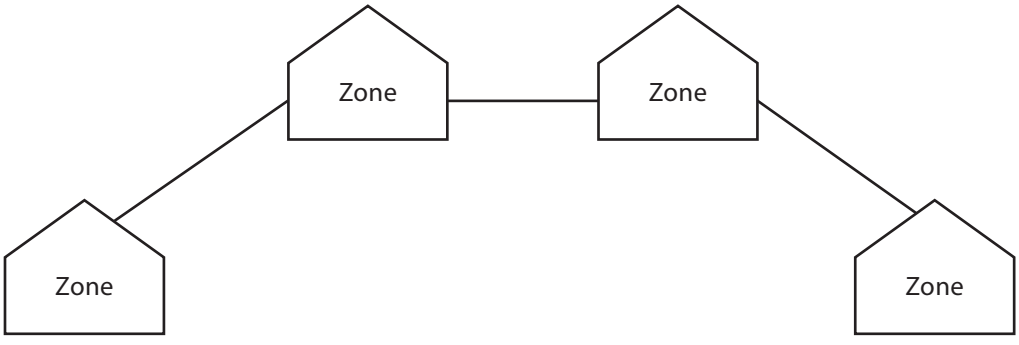
(iii) nslookup

Ans. (i) **whois:** Lookup tool finds contact information for the owner of a specified IP address. The ipwhois Lookup tool displays as much information as possible for a given IP address.

(ii) **ipconfig:** In Windows, ipconfig is a console application designed to run from the Windows command prompt. This utility allows you to get the IP address information of a Windows computer. It also allows some control over active TCP/IP connections.

(iii) **nslookup:** It is a network administration command-line tool available for many computer operating systems. It is used for querying the Domain Name System (DNS) to obtain domain name or IP address mapping information.

(h) Sony has set up its Branch at Srinagar for its office and web-based activities. It has 4 Zones of buildings as shown in the diagram: (4)



Branch-to-branch distance is:

Zone X to Zone Z	40 m
Zone Z to Zone Y	60 m
Zone Y to Zone X	135 m
Zone Y to Zone U	70 m
Zone X to Zone U	165 m
Zone Z to Zone U	80 m

Number of Computers:

Zone X	50
Zone Z	130
Zone Y	40
Zone U	15

(i) Suggest the most suitable place (*i.e.*, Zone) to house the ERP and BI Server of this organization with a suitable reason.

(ii) Suggest the placement of the following devices with justification:

(a) Repeater

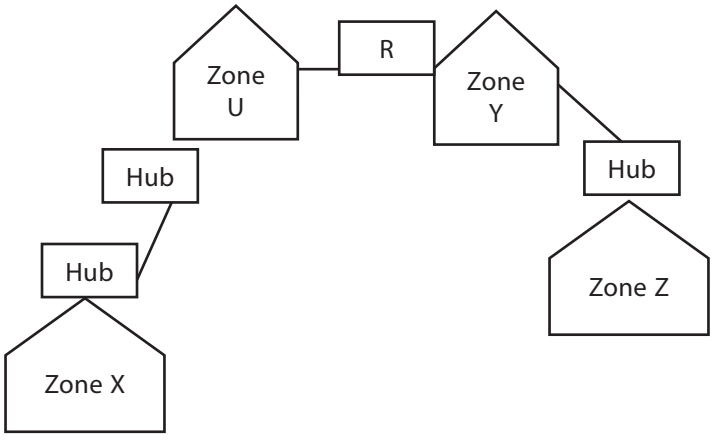
(b) Hub/Switch

(iii) Which is the most economic type of cable for the selected topology?

Ans. (i) The most suitable place (i.e., Zone) to house the ERP and BI Server is Zone Z as it has the most number of computers; thus, cabling cost will be reduced and most traffic will be local.

(ii) Research Lab as it has the maximum number of computers.

(a) Repeater: As per the suggested layout, separate repeaters need not be installed as each building/zone will be having a hub that acts as a repeater.



Hub/switch should be placed in each zone

Ans. (iii) An economic type of cable is Dial-up or broadband as it can connect two computers at an economic rate though it provides lesser speed than other expensive methods.

SECTION–C

4. (a) In Django, whenever a web client has to access a web page, it makes a _____request and sends URL of the web page. (1)

Ans. GET

(b) Which command is used to create a new application in Django project? (1)

Ans. python manage.py startapp appname.

(c) What is the name of a special control structure that facilitates the row-by-row processing of records in the result set during Python-MySQL connectivity? (1)

Ans. Database cursor.

(d) Which clause is used to remove the duplicating rows of the table in SQL? (1)

Ans. DISTINCT

(e) startproject command creates four basic Django projects in Directory. Write any two file names.(2)

Ans. The startproject command creates a basic Django project directory structure with the following files:

- manage.py
- settings.py

(f) Write the specific purpose of functions used in plotting: (2)

(i) plot()

(ii) Legend()

Ans. (i) plot(): A line chart or line graph can be created using the plot() function available in pyplot library. For example, the basic syntax for creating line plots is plt.plot(x,y), where x and y are the points or specify the (x, y) pairs that form the line.

(ii) Legend(): legend is the text or string that "has to be read" to understand the graph. Legends are used in line graphs to explain the function or the values underlying the different lines of the graph.

(g) Consider a database LOANS with the following table: (3)

Table: LOANS

AccNo	CUST_NAME	Loan_Amount	Instalments	Int_Rate	Start_Date	Interest
1	R.K. Gupta	300000	36	12.00	19-07-2009	1200
2	S.P. Sharma	500000	48	10.00	22-03-2008	1800
3	K.P. Jain	300000	36	NULL	08-03-2007	1600
4	M.P. Yadav	800000	60	10.00	06-12-2008	2250
5	S.P. Sinha	200000	36	12.50	03-01-2010	4500
6	P. Sharma	700000	60	12.50	05-06-2008	3500
7	K.S. Dhall	500000	48	NULL	05-03-2008	3800

Now answer the following questions:

(i) Display the sum of all Loan Amounts whose Interest rate is greater than 10.

Ans. Select sum(Loan_Amount) from LOANS where Interest >10;

(ii) Display the Maximum Interest from Loans table.

Ans. Select max(Interest) from LOANS;

(iii) Display the count of all loan holders whose names are ending with 'Sharma'.

Ans. Select count(*) from LOANS where Cust_Name Like '%Sharma';

(h) Write SQL queries for (i) to (iii) and find outputs for SQL query (iv) which are based on the table. (4)

Table: TRANSACT

TRNO	ANO	AMOUNT	TYPE	DOT
T001	101	2500	Withdraw	2017-12-21
T002	103	3000	Deposit	2017-06-01
T003	102	2000	Withdraw	2017-05-12
T004	103	1000	Deposit	2017-10-22
T005	101	12000	Deposit	2017-11-06

(i) To display minimum amount transaction from the table.

Ans. select min(amount) from Transact;

(ii) To display total amount withdrawn from table.

Ans. select sum(amount) from Transact where type = "Withdraw";

(iii) To display ANO, DOT, AMOUNT for maximum amount transaction.

Ans. select ANO, DOT, AMOUNT from Transact where AMOUNT = max(AMOUNT);

(iv) SELECT ANO, COUNT(*), MIN(AMOUNT) FROM TRANSACT
GROUP BY ANO HAVING COUNT(*)> 1

Ans.

ANO	COUNT(*)	MIN(AMOUNT)
101	2	2500
103	2	1000

SELECT COUNT(*), SUM(AMOUNT) FROM TRANSACT
WHERE DOT <= '2017-06-01';

COUNT(*)	SUM(AMOUNT)
2	5000

SECTION–D

5. (a) What does the term "Intellectual Property Rights" covers? (1)

Ans. The term "Intellectual Property Rights" covers Copyrights, Trademarks and Patents.

(b) Vinod is preparing financial analysis report of its organisation. Can he copy and paste information from the Internet for reference in his report? (1)

Ans. Yes, he can do this but only after giving the reference to all the sources, otherwise it will be treated as copyright violation.

(c) What are the environmental issues of e-waste? (2)

Ans. E-waste, or electronic waste, is waste from all sorts of electronics ranging from computers and mobile phones, to household electronics such as food processors, pressure cookers, etc.

The effects of improper disposal of this e-waste on the environment are little known; however, damage to the atmosphere is one of the biggest environmental impacts of e-waste.

(d) What do you understand by the term Plagiarism? Write two software used as Plagiarism checker. (2)

Ans. Plagiarism is "copying and publication" of another author's "language, thoughts, ideas, or expressions" and the representation of them as one's own original work. Plagiarism is considered academic dishonesty and a breach of journalistic ethics.

The software available for Plagiarism checker are:

(i) DupliChecker
(ii) Grammarly
(iii) Paperrater
(iv) Plagiarisma

(e) List down some points about societal changes introduced by technology. (2)

Ans. Technology is the application of scientific knowledge to the making of tools to solve specific problems. Technological advances such as automobiles, airplanes, radio, television, cellular phones, computers, modems, and fax machines have brought major advances and changes to the world.

(f) What do you understand by Computer ethics? (2)

Ans. Computer ethics are a set of moral principles that govern the behaviour of a group or an individual and regulate the use of computers. These include intellectual property rights (such as copyrighted electronic content), privacy concerns, and how computers affect our society.

MODEL TEST PAPER–I

CLASS XII
COMPUTER SCIENCE (083)

TIME: 3 hrs **M.M: 70**

General Instructions:

- All questions are compulsory.
- Question paper is divided into 4 sections A, B, C and D.
  - ☞ Section A: Unit-1
  - ☞ Section B: Unit-2
  - ☞ Section C: Unit-3
  - ☞ Section D: Unit-4

1. (a) Name the Python Library modules which need to be imported to invoke the following functions: (1)
(i) log() (ii) match()

(b) How many times is the word 'Hello' printed in the following statement? (1)

```
s='python rocks'
for ch in s[3:8]:
    print('Hello')
```

(c) Name the Python library module(s) which needs to be imported to run the following program: (1)

```
print(sqrt(random.randint(1,16)))
```

(d) Rewrite the following code in Python after removing all syntax error(s). Underline each correction done in the code. (2)

```
Num =int(input("Number:"))
Sum = 0
for i in range(10,Num,3)
    Sum+=i
if i%2=0:
    print(i*2) Else:
    print(i*3 print Sum)
```

(e) Observe the following Python code and find out which of the given options (i) to (iv) are the expected correct output(s). Also, assign maximum and minimum values that can be assigned to the variable 'Go'. (2)

```
import random
X=[100,75,10,125]
Go = random.randint(0,3)
for i in range(Go):
    print(X[i],"$$")
```

(i)
```
100$$
 75$$
 10$$
```

(ii)
```
100$$
 99$$
```

(iii)
```
150$$
100$$
```

(iv)
```
125$$
 10$$
```

(f) Find and write the output of the following Python code: (3)

```
L = ["X",20,"Y",10,"Z",30]
CNT = 0
ST = ""
INC = 0
for C in range(1,6,2):
    CNT= CNT + C
    ST= ST + L[C-1] + "@"
    INC = INC + L[C]
    print(CNT, INC, ST)
```

(g) Carefully observe the following Python code and answer the questions that follow: (2)

```
global x
x=5
def fun2():
    x=3
    print(x)
x=x+1
print(x)
```

On execution, the above code produces the following output:

```
6
3
```

Explain the output with respect to the scope of the variables.

2. (a) Write a statement in Python to open a text file RETEST.TXT so that new content can be read or written from it. (1)

(b) What is the output of the following program: (1)

```
def myfunc(a):
    a = a + 2
    a = a * 2
    return a
print(myfunc(2))
```

(c) Write the modules that will be required to be imported to execute the following code in Python: (1)

```
def main():
    for i in range(len(string))):
    if string[i] == "":
        print()
    elif:
        c = string[i].upper()
print("String is:", c)
print("String length=", len(string.floor()))
```

(d) Carefully observe the code and give the output: (1)

```
def example(a):
    a = a + '2'
    a = a*2
    return a
example("hello")
```

(e) Find the output of the following: (1)

```
str = "Pythonforbeginners is easytolearn"
str2 = "easy"
print("The first occurrence of str2 is at : ", end="")
print(str.find(str2, 4))
```

(f) Kritika was asked to accept a list of even numbers but she did not put the relevant condition while accepting the list. Write a user-defined function oddtoeven(L) that accepts the List L as an argument and converts all the odd numbers into even by multiplying them by 2. (2)

(g) Write a Python function, generatefibo(n) where n is the limit, using a generator function, Fibonacci (max) (where max is the limit n), that produces the Fibonacci series. (2)

(h) Consider the following unsorted list: 95, 79, 19, 43, 52, 3. Write the passes of bubble sort for sorting the list in ascending order till the 4th iteration. (2)

(i) Write a user-defined function in Python that displays the number of lines starting with 'H' in the file Para.txt. *For example*, if the file contains: (3)

Whose woods these are I think
I know. His house is in the
village though;
He will not see me stopping here
To watch his woods fill up
with snow. Then the line
count should be 2.

OR

Write a Python program to copy file1.txt into file2.txt.

(j) Write a program to perform insert and delete operations on a Queue containing Members details as given in the following definition of item node: (4)

Member No	integer
Member Name	String
Age	integer

```
def isEmpty(Qu):
    if Qu == []:
        return True
    else:
        return False
def Enqueue(Qu, item):
# Write the code to insert member details using Queue.
def Dequeue(Qu):
# Write the code to delete a member using Queue.
```

SECTION–B

3. Answer the following questions:

(a) The full form of HTTP is _____ . (1)

(b) _____ is a device that connects two dissimilar networks. (1)

(c) A _____ is the result of two devices on the same Ethernet network attempting to transmit data at exactly the same time. (1)

(d) _____ translates domain names to IP addresses so browsers can load Internet resources. (1)

(e) The following is a 32-bit binary number, usually represented as 4 decimal values, each representing 8 bits, in the range 0 to 255 (known as octets) separated by decimal points. (2)

140.179.220.200

What is it? What is its importance?

OR

What kind of data gets stored in cookies and how is it useful?

(f) Give two differences between public cloud and private cloud. (2)

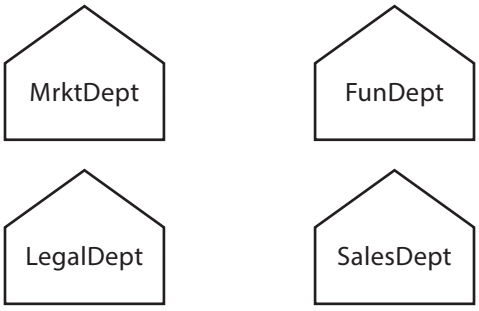
(g) Name the network tools used in the given situation— (3)

(i) To troubleshoot internet connection problems

(ii) To see the IP address associated with a domain name

(iii) To look up the registration record associated with a domain name

(h) SunRise Pvt. Ltd. is setting up the network in Ahmedabad. There are four departments—MrktDept, FunDept, LegalDept, SalesDept. (4)



Distance between various buildings is as under:

MrktDept to FunDept	80 m
MrktDept to LegalDept	180 m
MrktDept to SalesDept	100 m
LegalDept to SalesDept	150 m
LegalDept to FunDept	100 m
FunDept to SalesDept	50 m

Number of computers in the buildings:

MrktDept	20
LegalDept	10
FunDept	08
SalesDept	42

(i) Suggest the network type between the Departments and specify topology.
(ii) Suggest the most suitable building to place the server with a suitable reason.
(iii) Suggest the placement of (i) modem, (ii) Hub/Switch in the network.
(iv) The organization is planning to link its sale counters situated in various parts of the same city. Which type of network out of LAN, WAN, MAN will be formed? Justify.

SECTION–C

4. (a) Which statement in SQL is used to sort the fetched data in either ascending or descending according to one or more columns? (1)

(b) Which method is used to retrieve all rows and single row? (1)

(c) Name the types of networks depending upon geographical location. (1)

(d) Start project command creates four basic Django projects in Directory. Write any two file Names. (1)

(e) Consider the table 'empsalary'. (2)

eid	esalary
101	40000
102	NULL
104	51000
107	NULL

To select tuples with some esalary, Vikram has written the following erroneous SQL statement:

SELECT eid, esalary FROM empsalary WHERE esalary = something;

Write the correct SQL statement.

(f) Give any two differences between GET and POST submission methods of HTML form. (2)

(g) Write a MySQL-Python connectivity to retrieve data, one record at a time, from city table for employees with id less than 10. (3)

(h) Study the following tables STAFF and SALARY and write SQL command for the questions (a) to (d). (4)

Table: STAFF

ID	NAME	DEPT	SEX	EXPERIENCE
101	Siddharth	Sales	M	12
104	Raghav	Finance	M	6
107	Naman	Research	M	10
114	Nupur	Sales	F	3
109	Jhanvi	Finance	F	9
105	Rama	Research	M	10
117	James	Sales	F	3
111	Binoy	Finance	F	12
130	Samuel	Sales	M	15

Table: SALARY

ID	Basic	Allowance	Commission
101	15000	1500	800
104	17000	1200	500
107	16000	1000	200
114	20000	2200	550
109	18000	1000	250
105	15000	1200	150
117	18000	1700	100
111	20000	1500	300
130	18000	1200	500

(i) Display NAME of all the staff members who are in SALES having more than 10 years' experience from the table staff.

(ii) Display the average Basic Salary of all staff members working in "Finance" department using the tables staff and salary.

(iii) Display the minimum ALLOWANCE of female staff.

(iv) Display the highest commission among all male staff.

SECTION–D

5. (a) Name any one open source operating system and open source browser. (1)

(b) Define cyber forensics. (1)

(c) What is meant by intellectual property? What are the provisions for protecting intellectual property in India? (2)

(d) How does technology affect society? Give two points in favour of technology and two points against it. (2)

(e) Write any four steps that you can take to protect yourself from online phishing. (2)

(f) If Aadhaar is a unique ID, what is its importance? What makes generation of a duplicate Aadhaar card impossible? (2)

MODEL TEST PAPER–II

CLASS XII
COMPUTER SCIENCE (083)

TIME: 3 hrs **M.M: 70**

General Instructions:

- All questions are compulsory.
- Question paper is divided into 4 sections A, B, C and D.
  - ☞ Section A: Unit-1
  - ☞ Section B: Unit-2
  - ☞ Section C: Unit-3
  - ☞ Section D: Unit-4

SECTION–A

1. (a) Name the Python Library modules which need to be imported to invoke the following functions: (1)

(i) fabs()

(ii) bar()

(b) What is None in Python? (1)

(c) Predict the output: (1)

```
for i in range(1, 10, 3):
    print(i)
```

(d) Rewrite the following code in Python after removing all syntax error(s). Underline each correction done in the code. (2)

```
a = int(input("Value:"))
b = 0
for c in range(1, a, 2)
b + = c
if c%2 = 0:
    Print(c*3)
    Else: print(c*) print(b)
```

(e) Which string method is used to implement the following? (2)

(i) To count the number of characters in the string.

(ii) To change the first character of the string in capital letter.

(iii) To check whether the given character is a letter or a number.

(iv) To change lower case to upper case letter.

(v) To change one character into another character.

(f) Consider the following function calls with respect to the function definition. Identify which of these will cause an error and why? (3)

```
def calculate(a, b=5, c=10):
    return a*b-c
```

(i) calculate(12, 3)

(ii) calculate(c=50, 35)

(iii) calculate(20, b=7, a=15)

(iv) calculate(x=10, b=12)

(g) What possible output(s) is/are expected to be displayed on screen at the time of execution of the program from the following code? Also specify the maximum values that can be assigned to each of the variables **start and end**. (2)

```
import random
POINTS=[20,40,10,30,15]; POINTS=[30,50,20,40,45]
start=random.randint(1,3)
end=random.randint(2,4)
for c in range(start,end+1):
    print(POINTS[c],"#",)
```

(i) 50# 20#	(ii) 40# 30#
(iii) 50# 40# 20#	(iv) 20# 40# 45#

2. (a) Write a statement in Python to open a text file STORY.TXT so that new contents can be added at the end of it. (1)

(b) Observe the following code and answer the questions that follow: (1)

File = open("Mydata", "a") _____ #Blank1

File.close()

(i) What type (Text/Binary) of file is Mydata?

(ii) Fill in Blank 1 with a statement to write "ABC" in the file "Mydata".

(c) Name the Python Library modules which need to be imported to invoke the following functions: (1)

(i) load ()

(ii) pow ()

(d) Consider the following function headers. Identify the correct statement: (1)

(i) def correct(a=1, b=2, c):

(ii) def correct(a=1, b, c=3):

(iii) def correct(a=1, b=2, c=3):

(iv) def correct(a=1, b, c):

(e) Name the function that you will call to create a line chart and Pie Chart. (1)

(f) Explain all file modes in Data File Handling in Python for Data Handling. (2)

OR

Write a function **countthe()** in Python to read the text file "DATA.TXT" and count the number of times "the" occurs in the file.

For example, if the file "DATA.TXT" contains:

"This is my website. I have displayed my preferences in the CHOICE section. The website looks good."

The **countthe()** function should display the output as:

"the occurs 2 times".

(g) Write a program in Python to search a number from the entered sorted list using binary search. (2)

OR

Write a method in Python to find and display the prime numbers between 2 to N. The value of N should be passed as an argument to the method.

(h) Write definition of a method EvenSum(NUMBERS) to add those values in the list of NUMBERS which are even. (2)

OR

Write definition of a method COUNTNOW(PLACES) to find and display those place names in which there are more than 5 characters.

For example:

If the list PLACES contains

```
["DELHI", "LONDON", "PARIS", "NEW YORK", "DUBAI"]
```

The following output should be displayed:

```
LONDON
NEW YORK
```

(i) Write a program which inputs two lists 'FirstName' and 'LastName' and returns answer in list 'name' with 'FirstName' and 'LastName' concatenated. (3)

OR

Write a user-defined function named Count() that will read the contents of a text file named "Report.txt" and count the number of lines which start with either "J" or "M" and display the count, e.g.,

In the following paragraph, there are 3 lines starting with "J" or "M":

"India is the fastest growing economy. India is looking for more investments from around the globe.

The whole world is looking at India as a great market. Most of the Indians can foresee the dizzy heights that India is capable of reaching."

(j) Write functions to perform insert (Enqueue) and delete (Dequeue) operations in a Queue containing Member details as given in the following definition of item node: (4)

Node

```
Member No  Integer,  Member Name String,  Age Integer
```

```
def isEmpty(Qu):
    if Qu==[]:
        return True
    else:
        return False
def Enqueue(Qu, item):
# write code to insert an item in the Queue

def Dequeue(Qu):
# write code to delete an item from the Queue
```

SECTION–B

3. (a) The underlined areas represent _____ in the MAC address given below- (1)

10:B5:03:63:2E:FC

(b) Daniel has to share the data among various computers of his two office branches situated in the same city. The network which is being formed in this process is _____. (1)

(c) Transmission capacity of a communication channel is termed as _____ of the channel. (1)

(d) The default port number for running django is _____ . (1)

(e) Differentiate between Bus Topology and Star Topology of Networks. What are the advantages and disadvantages of Star Topology over Bus Topology? (2)

(f) Write the expanded forms of the following abbreviated terms used in networking and communications: (2)

(i) SMTP
(ii) VoIP
(iii) GSM
(iv) WLL

(g) Explain the following terms: (3)

(i) MAC
(ii) DNS
(iii) URL

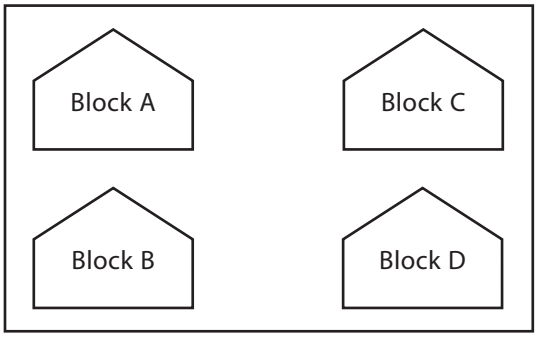
(h) Knowledge Supplement Organization has set up its new centre at Mangalore for its office and web-based activities. It has 4 blocks of buildings as shown in the diagram below: (4)

Centre to centre distances between various blocks:

Block A to Block B	50 m
Block B to Block C	150 m
Block C to Block D	25 m
Block A to Block D	170 m
Block B to Block D	125 m
Block A to Block C	90 m

Number of computers:

Block A	25
Block B	50
Block C	125
Block D	10



(i) Suggest the network implemented.

(ii) Suggest the most suitable place (*i.e.*, block) to house the server of this organization with a suitable reason.

(iii) Suggest the placement of the following devices with justification:
  (a) Repeater
  (b) Hub/Switch

(iv) The organization is planning to link its front office situated in the city in a hilly region where cable connection is not feasible. Suggest an economic way to connect it with reasonably high speed.

SECTION–C

4. (a) Which clause is used in MYSQL to specify filtering condition for groups? (1)

(b) Which function returns the total number of rows, including duplicates and NULL in a table. (1)

(c) Which function returns the lowest value from the given column or expression. (1)

(d) Which method is used to retrieve all rows and single row? (1)

(e) Differentiate between having and Group By clauses of a table with an example. (2)

(f) Differentiate between GET and POST method with examples. (2)

(g) Explain with the help of examples: (3)
  (i) Primary Key
  (ii) Foreign Key
  (iii) Candidate Key

(h) Consider the following tables ACTIVITY and COACH. Write SQL commands for the statements (i) to (iv). (4)

Table: ACTIVITY

ACode	ActivityName	ParticipantsNum	PrizeMoney	ScheduledDate
1001	Relay 100x4	16	10000	23-Jan-2004
1002	High jump	10	12000	12-Dec-2003
1003	Shot Put	12	8000	14-Feb-2004
1005	Long Jump	12	9000	01-Jan-2004
1008	Discus Throw	10	15000	19-Mar-2004

Table: COACH

PCode	Name	ScheduledDate
1	Ahmad Hussain	1001
2	Ravinder	1008
3	Janila	1001
4	Naaz	1003

(i) To display the name of all activities with their Acodes in descending order.

(ii) To display sum of PrizeMoney for each of the Number of participant groupings (as shown in column ParticipantsNum 10,12,16).

(iii) To display the coach's name and ACodes in ascending order of ACode from the table COACH.

(iv) To display the content of the GAMES table whose ScheduledDate is earlier than 01/01/2004 in ascending order of ParticipantNum.

SECTION–D

5. (a) Define Creative Commons. Where is this license useful? (1)

(b) What is phishing? (1)

(c) Differentiate between digital signature and digital certificate. Explain with examples. (2)

(d) What do you mean by web browser and web server? Explain with examples. (2)

(e) What do you mean by Wi-Fi and IR? Explain with examples. (2)

(f) What is firewall? Explain its use in modern scenario. (2)

MODEL TEST PAPER–III

CLASS XII

COMPUTER SCIENCE (083)

TIME: 3 hrs **M.M: 70**

General Instructions:

- All questions are compulsory.
- Question paper is divided into 4 sections A, B, C and D.
  - ☞ Section A: Unit-1
  - ☞ Section B: Unit-2
  - ☞ Section C: Unit-3
  - ☞ Section D: Unit-4

1. (a) Name the Python Library modules which need to be imported to invoke the following functions: (1)

(i) floor()

(ii) find()

(b) Which of these in not a core data type? (1)

(i) Lists

(ii) Dictionary

(iii) Tuples

(iv) Class

(c) Suppose `list1 = [0.5 * x for x in range(0, 4)]`, what will be the contents of list1 out of the given options: (1)

(i) [0, 1, 2, 3]

(ii) [0, 1, 2, 3, 4]

(iii) [0.0, 0.5, 1.0, 1.5]

(iv) [0.0, 0.5, 1.0, 1.5, 2.0]

(d) What is a Python variable? Identify the variables that are invalid and state the reason. (2)

```
Class, do, while, 4d, a+
```

(e) Rewrite the following Python code after removing all syntax error(s). Underline the corrections done. (2)

```
def main():
    r = input('enter any radius: ')
    a = pi * math.pow(r,2)
    print("Area = " + a)
```

(f) Find and write the output of the following Python code: (3)

```
def rec(x):
    if(x>1):
        return x*rec(x-2)
    print(x)
    return x
print(rec(5))
```

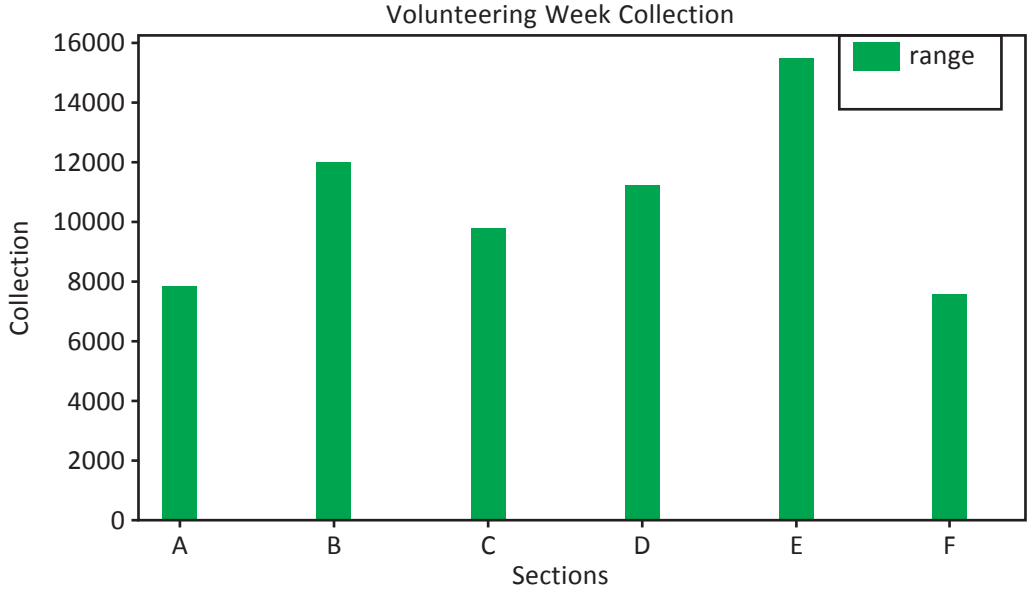
(g) Find and write the output of the following Python code: (2)

```
L1 = [500,800,600,200,900]
START = 1
SUM = 0
for C in range(START,4):
    SUM = SUM + L1[C]
    print(C,":",SUM)
    SUM = SUM + L1[0]*10
    print(SUM)
```

2. (a) Define Markers in a Pyplot graph. (1)

(b) Which function allows you specify multiple setting for your chart/graph such as width, height etc. (1)

(c) Consider the graph shown below: (1)



In the above figure, what will be the value of xticks?

(d) Define two types of functions in Python. (1)

(e) Write the statement to read two characters from a file object fileobj. (1)

(f) Find and write the output of the following snippet: (2)

```
x = 50
def func():
    global x
    print('x is', x)
    x = 2
    print('Changed global x to', x)
func()
print('Value of x is', x)
```

(g) Write the definition of a function Reverse(X) in Python to display the elements in reverse order such that each displayed element is four times the original element (element*4) of the List X in the following manner: (2)

Example:

If List X contains 7 integers as follows:

X[0]	X[1]	X[2]	X[3]	X[4]	X[5]	X[6]
4	6	9	12	5	8	7

After executing the function, the array content should be displayed as follows:

28 32 20 48 36 24 16

(h) Write a user-defined function named Count() that will read the contents of text file named "Report.txt" and count the number of lines which start with either "I" or "M" and display the count. (2)

E.g. In the following paragraph, there are 3 lines starting with "I" or "M":
"India is the fastest growing economy. India is looking for more investments around the globe.
The whole world is looking at India as a great market.
Most of the Indians can foresee the heights that India is capable of reaching."

(i) Consider the following sorted list: (3)
[22, 54, 66, 90, 155, 178]
Write the passes of binary search for searching the list for value 25 till the 3rd iteration.

(j) Write AddCustomer(Customer) and DeleteCustomer(Customer) methods in Python to add a new Customer and delete a Customer from a List of CustomerNames, considering them to act as push and pop operations of the stack data structure. (4)

SECTION–B

3. (a) The last address of IP address represents _____. (1)

(b) Routers are part of the _____ layer. (1)

(c) All computers connected to the internet and wanting to use it for sending/receiving data must follow a common set of rules for communication called _____. (1)

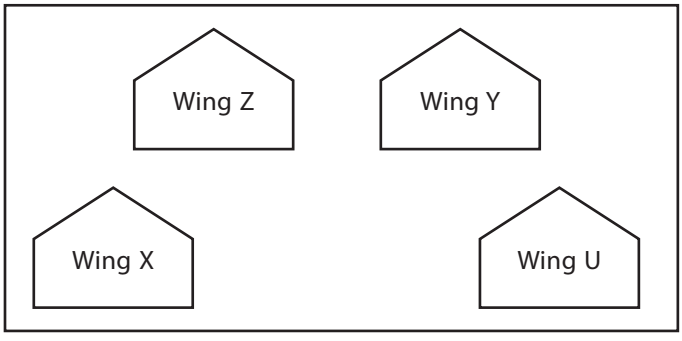
(d) A _____ is a device that forwards packets between networks by processing the routing information included in the packet. (1)

(e) Expand the following terminologies: (2)
(i) FTP
(ii) SCP
(iii) NFC
(iv) IMAP

(f) How is MAC address different from IP address? Why is IP address needed? (2)

(g) What is cloud? State the significance of cloud computing. How is a private cloud different from a public cloud? (3)

(h) ABC Pvt Ltd has set up its new Branch at Jammu for its office and web-based activities. It has 4 Wings of buildings as shown in the diagram: (4)



Center to center distance between various blocks:

Wing X to Wing Z	50 m
Wing Z to Wing Y	70 m
Wing & to Wing X	125 m
Wing & to Wing U	80 m
Wing X to Wing U	175 m
Wing Z to Wing U	90 m

Number of computers:

Wing X	50
Wing Z	30
Wing Y	150
Wing U	15

(i) Suggest the most suitable connection between the Wings and topology.

(ii) Suggest the most suitable place (*i.e.*, Wing) to house the server of this organization with a suitable reason, with justification.

(iii) Suggest the placement of the following devices with justification:
   (a) Repeater
   (b) Hub/Switch

(iv) The organization is planning to link its head office situated in Delhi with the offices at Jammu. Suggest an economic way to connect it; the company is ready to compromise on the speed of connectivity. Justify your answer.

SECTION–C

4. (a) Which function counts the total number of rows in a given column and ignores null and duplicate values? (1)

(b) State the clause which combines all the records that have identical values in a particular field or a group of fields. (1)

(c) Which connector is used for linking the database with Python code? (1)

(d) Write the command used for modifying the records. (1)

(e) List the differences between a flat file and csv file. (2)

(f) How is having clause different from where clause? Explain with the help of an example. (2)

(g) What are the different enabling technologies for IoT? (3)

(h) Consider the table EXAM with details of marks. Write MySQL commands for the following questions: (4)

Table: EXAM

Adno	SName	Percentage	Clsection	Stream
R001	Sushant	90.2	12A	Science
R002	Vaidyanath	80.5	12B	Humanities
R003	Miara	68.9	12B	Science
R004	Niara	96.0	12A	Commerce
R005	Shinjini	88.9	12D	Commerce

(i) To display all information of the students of humanities in descending order of percentage.

(ii) To display Adno, Name, Percentage and Stream of those students whose name starts with S and ends with t.

(iii) To display SName, Percentage, Clsection of students who have highest percentage in each stream.

(iv) To display details of students who have Percentage in the range of 80 and 90 (both inclusive) in decreasing order of Percentage.

SECTION–D

5. (a) In which year did India's IT Act come into existence? (1)

(b) What is plagiarism? (1)

(c) What are Creative Commons and GPL? (2)

(d) Differentiate between open source and open data. (2)

(e) What can be the gender and disability issues while teaching and using computers? (2)

(f) An important factor of privacy is consumer consent. Comment. (2)

#Brain Teasers- Project for conducting quiz

'''
Before creating and executing the code, create the required database and the associated table for MySQL as shown below:
.....
create database brain_teaser;
use brain_teaser;
create table question(qid int(4) primary key, question varchar(500) not null,op1 varchar(100) not null,op2 varchar(100) not null,op3 varchar(100),op4 varchar(100),ans varchar(100) not null);
'''

```
import sys
import mysql.connector
import random
mydb=mysql.connector.connect(host="localhost", user="root", password="",
                                        database="brain_teaser")
mycursor=mydb.cursor()

# Function definition for Home screen
def Home():
    f=1
    while f!=3:
        print("Welcome to Quiz")
        print("**********")
        print("1. Enter Questions")
        print("2. Take Quiz")
        print("3. Exit")
        f=int(input("Enter your choice: "))
        if f == 1:
            Question()
        elif f == 2:
            Quiz()
        elif f == 3:
            print("Exiting the Quiz")
            mycursor.close()
            mydb.close()
            sys.exit()
        else:
            Home()
```

```
def Question():
    ch='Y'
    while ch=='Y' or ch=='y':
      print("Welcome to Question Portal")
      print("**********************")
      q=input("Enter the question :")
      op1=input("Enter the option 1 :")
      op2=input("Enter the option 2 :")
      op3=input("Enter the option 3 :")
      op4=input("Enter the option 4 :")
      ans=0
      while ans == 0:
            op=int(input("Which option is correct answer (1,2,3,4) :"))
          if op==1:
             ans=op1
          elif op==2:
             ans=op2
           elif op==3:
             ans=op3
           elif op==4:
             ans=op4
          else:
             print("Please choose the correct option as answer")
       mycursor.execute("Select * from question")
       data=mycursor.fetchall()
       qid=(mycursor.rowcount)+1
       mycursor.execute("Insert into question values
                          (%s,%s,%s,%s,%s,%s,%s)",(qid,q,op1,op2,op3,op4,ans))
      mydb.commit()
      ch=input("Question added successfully. Do you want to add more (Y/N)")
      Home()


# Function definition for Quiz
def Quiz():
      print("Welcome to Quiz portal")
      print("**********************")
      mycursor.execute("Select * from question")
      data=mycursor.fetchall()
```

```
name=input("Enter your name :")
rc=mycursor.rowcount
noq=int(input("Enter the number of questions to attempt (max %s):"%rc))
l=[]
while len(l) != noq:
    x=random.randint(1,rc)
    if l.count(x)>0:
        l.remove(x)
    else:
        l.append(x)
        print("Quiz has started")
        c=1
        score = 0
        for i in range(0,len(l)):
            mycursor.execute("Select * from question where qid=%s",(l[i],))
            ques=mycursor.fetchone()
            print("---------------------------------------------------------------------------------------------")
            print("Q.",c,":
                ",ques[1],"\nA.",ques[2],"\t\tB.",ques[3],"\nC.",ques[4],"\t\tD.",ques[5])
            print("---------------------------------------------------------------------------------------------")
            c += 1
        ans=None
        while ans==None:
            choice=input("Answer (A,B,C,D) :")
            if choice=='A' or choice=='a':
                ans=ques[2]
            elif choice=='B' or choice=='b':
                ans=ques[3]
            elif choice=='C' or choice=='c':
```

```
                ans=ques[4]
            elif choice=='D' or choice=='d':
                ans=ques[5]
            else:
                print("Kindly select A,B,C,D as option only")
                if ans==ques[6]:
                    print("Correct")
                    score=score+1
                else:
                    print("Incorrect.. Correct answer is :",ques[6])
        print("Quiz has ended !! Your final score is :",score)
        input("Press any key to continue")

Home()
```

INVENTORY MANAGEMENT

About Project

Inventory management is the practice of ordering, storing, tracking, and controlling inventory. Inventory management applies to every item a business uses to produce its products or services – from raw materials to finished goods. In other words, inventory management covers every aspect of a business's inventory.

The project contains following modules:-

1. Product Management: This module is used to add, update and delete the products.

2. Purchase Management: This module is used to manage the purchase system.

3. Sales Management: This module is used to manage the sale of the products.

4. User Management: This module is used to add/delete the user/staff.

5. Database setup: This module is used to setup the database in the system for the first time.

SOFTWARE SPECIFICATION:-

Operating System	:	Windows 8
Platform	:	Python IDLE 3.7
Database	:	MySQL
Languages	:	Python

Note: For Python-MySQL connectivity, following data have been used:-

Host- localhost, user- root, password- ' ', database- stock

CODING

```
# INVENTORY MANAGEMENT
import os
import mysql.connector
import datetime
now = datetime.datetime.now()


def product_mgmt():
    while True:
        print("\t\t\t 1. Add New Product")
        print("\t\t\t 2. List Product")
        print("\t\t\t 3. Update Product")
        print("\t\t\t 4. Delete Product")
        print("\t\t\t 5. Back (Main Menu)")
        p = int(input("\t\t Enter Your Choice :"))
        if p == 1:
            add_product()
        if p == 2:
            search_product()
        if p == 3:
            update_product()
        if p == 4:
            delete_product()
        if p == 5:
            break


def purchase_mgmt():
    while True:
        print("\t\t\t 1. Add Order")
        print("\t\t\t 2. List Order")
        print("\t\t\t 3. Back (Main Menu)")
        o = int(input("\t\t Enter Your Choice :"))
        if o == 1:
            add_order()
        if o == 2:
            list_order()
        if o == 3:
            break
```

```
def sales_mgmt( ):
    while True:
        print("\t\t\t 1. Sale Items")
        print("\t\t\t 2. List Sales")
        print("\t\t\t 3. Back (Main Menu)")
        s = int (input("\t\t Enter Your Choice :"))
        if s == 1:
            sale_product()
        if s == 2:
            list_sale()
        if s == 3:
            break


def user_mgmt():
    while True:
        print("\t\t\t 1. Add user")
        print("\t\t\t 2. List user")
        print("\t\t\t 3. Back (Main Menu)")
        u = int(input("\t\t Enter Your Choice :"))
        if u == 1:
            add_user()
        if u == 2:
            list_user()
        if u == 3:
            break


def create_database():
     mydb = mysql.connector.connect(host="localhost", user="root",
                                    password="", database="stock")
    mycursor = mydb.cursor()
    print(" Creating PRODUCT table")
    sql = "CREATE TABLE if not exists product(pcode int(4) PRIMARY KEY,
                                    pname char(30) NOT NULL,
                                    price float(8,2),
                                    pqty int(4),
                                    pcat char(30));"
    mycursor.execute(sql)
    print("Creating ORDER table")
```

```
        sql = "CREATE TABLE if not exists orders(orderid int(4)PRIMARY KEY,
                                                orderdate DATE,
                                                pcode char(30) NOT NULL ,
                                                pprice float(8,2),
                                                pqty int(4),
                                                supplier char(50),
                                                pcat char(30));"
        mycursor.execute(sql)
        print("ORDER table created")
        print("Creating SALES table")
        sql = "CREATE TABLE if not exists sales(salesid int(4) PRIMARY KEY,
                                                salesdate DATE,
                                                pcode char(30) references product(pcode),
                                                pprice float(8,2),
                                                pqty int(4),
                                                Total double(8,2));"
        mycursor.execute(sql)
        print("SALES table created")
        sql = "CREATE TABLE if not exists user (uid char(6) PRIMARY KEY,
                                                uname char(30) NOT NULL,
                                                upwd char(30));"
        mycursor.execute(sql)
        print("USER table created")


def list_database():
        mydb = mysql.connector.connect(host="localhost", user="root",
                                               password="",database="stock")
        mycursor = mydb.cursor()
        sql = "show tables;"
        mycursor.execute(sql)
        for i in mycursor:
                print(i)


def add_order():
        mydb = mysql.connector.connect(host="localhost", user="root",
                                               password="", database="stock")
        mycursor = mydb.cursor()
        now = datetime.datetime.now()
```

```
        sql = "INSERT INTO orders (orderid, orderdate, pcode,
                                   pprice, pqty, supplier, pcat) values
                                   (%s,%s,%s,%s,%s,%s,%s)"
        code = int(input("Enter product code :"))
        oid = now.year+now.month+now.day+now.hour+now.minute+now.second
        qty = int(input("Enter product quantity : "))
        price = float(input("Enter Product unit price: "))
        cat = input("Enter product category: ")
        supplier = input("Enter Supplier details: ")
        val = (oid, now, code, price, qty, supplier, cat)
        mycursor.execute(sql, val)
        mydb.commit()


def list_order():
        mydb = mysql.connector.connect(host="localhost", user="root",
                                       password="", database="stock")
        mycursor = mydb.cursor()
        sql = "SELECT * from orders"
        mycursor.execute(sql)
        print("\t\t\t\t\t\t\t ORDER DETAILS")
        print("-"*85)
        print("orderid  date  product code  price  quantity  supplier  category")
        print("-" * 85)
        for i in mycursor:
                print(i[0], "\t", i[1], "\t", i[2], "\t", i[3], "\t", i[4], "\t", i[5], "\t", i[6])
        print("-" * 85)


def db_mgmt( ):
        while True:
                print("\t\t\t 1. Database creation")
                print("\t\t\t 2. List Database")
                print("\t\t\t 3. Back (Main Menu)")
                p = int(input("\t\t Enter Your Choice :"))
                if p == 1:
                        create_database()
                if p == 2:
                        list_database()
                if p == 3:
```

```
                    break
def add_product():
    mydb = mysql.connector.connect(host="localhost", user="root",
                                   password="",database="stock")
    mycursor = mydb.cursor()
    sql = "INSERT INTO product(pcode,pname,pprice,pqty,pcat) values
        (%s,%s,%s,%s,%s)"
    code = int(input("\t\t Enter product code :"))
    search = "SELECT count(*) FROM product WHERE pcode=%s;"
    val = (code,)
    mycursor.execute(search,val)
    for x in mycursor:
        cnt = x[0]
    if cnt == 0:
        name = input("\t\t Enter product name :")
        qty = int(input("\t\t Enter product quantity :"))
        price = float(input("\t\t Enter product unit price :"))
        cat = input("\t\t Enter Product category :")
        val = (code,name,price,qty,cat)
        mycursor.execute(sql,val)
        mydb.commit()
    else:
        print("\t\t Product already exist")


def update_product():
    mydb = mysql.connector.connect(host="localhost", user="root",
                                   password="", database="stock")
    mycursor = mydb.cursor()
    code = int(input("Enter the product code :"))
    qty = int(input("Enter the quantity :"))
    sql = "UPDATE product SET pqty=pqty+%s WHERE pcode=%s;"
    val = (qty,code)
    mycursor.execute(sql,val)
    mydb.commit()
    print("\t\t Product details updated")
```

```
def delete_product():
        mydb = mysql.connector.connect(host="localhost", user="root",
                                                password="", database="stock")
        mycursor=mydb.cursor()
        code = int(input("Enter the product code :"))
        sql = "DELETE FROM product WHERE pcode = %s;"
        val = (code,)
        mycursor.execute(sql, val)
        mydb.commit()
        print(mycursor.rowcount,"record(s) deleted");


def search_product():
       while True:
              print("\t\t\t 1. List all product")
              print("\t\t\t 2. List product code wise")
              print("\t\t\t 3. List product category wise")
              print("\t\t\t 4. Back (Main Menu)")
              s = int(input("\t\t Enter Your Choice :"))
              if s == 1:
                     list_product()
              if s == 2:
                      code=int(input(" Enter product code :"))
                      list_prcode(code)
              if s == 3:
                      cat=input("Enter category :")
                      list_prcat(cat)
              if s == 4:
                     break


def list_product():
        mydb = mysql.connector.connect(host="localhost", user="root",
                                                password="",database="stock")
        mycursor = mydb.cursor()
        sql = "SELECT * from product"
        mycursor.execute(sql)
        print("\t\t\t\t PRODUCT DETAILS")
        print("\t\t", "-" * 47)
        print("\t\t code    name    price   quantity     category")
```

```
        print("\t\t", "-" * 47)
        for i in mycursor:
                print("\t\t", i[0], "\t", i[1], "\t", i[2], "\t", i[3], "\t\t", i[4])
        print("\t\t", "-" * 47)


def list_prcode(code):
        mydb = mysql.connector.connect(host="localhost", user="root",
                                                password="", database="stock")
        mycursor = mydb.cursor()
        sql = "SELECT * from product WHERE pcode=%s"
        val = (code,)
        mycursor.execute(sql, val)
        print("\t\t\t\t PRODUCT DETAILS")
        print("\t\t", "-" * 47)
        print("\t\t code    name    price   quantity     category")
        print("\t\t", "-" * 47)
        for i in mycursor:
                print("\t\t", i[0], "\t", i[1], "\t", i[2], "\t", i[3], "\t\t", i[4])
        print("\t\t", "-" * 47)


def sale_product():
        mydb = mysql.connector.connect(host="localhost", user="root",
                                                password="", database="stock")
        mycursor = mydb.cursor()
        pcode = input("Enter product code: ")
        sql = "SELECT count(*) from product WHERE pcode=%s;"
        val = (pcode,)
        mycursor.execute(sql,val)
        for x in mycursor:
                cnt = x[0]
        if cnt != 0 :
                sql = "SELECT * from product WHERE pcode=%s;"
                val = (pcode,)
                mycursor.execute(sql, val)
                for x in mycursor:
                        print(x)
                        price = int(x[2])
                        pqty = int(x[3])
```

```
            qty = int(input("Enter no of quantity :"))
            if qty <= pqty:
                total = qty * price
                print("Collect Rs. ", total)
                sql = "INSERT into sales values(%s,%s,%s,%s,%s,%s)"
                val = (int(cnt)+1,datetime.datetime.now(),pcode,price,qty,total)
                mycursor.execute(sql,val)
                sql = "UPDATE product SET pqty=pqty-%s WHERE pcode=%s"
                val = (qty, pcode)
                mycursor.execute(sql, val)
                mydb.commit()
            else:
                print("Quantity not available")
        else:
            print("Product is not available")

def list_sale():
    mydb = mysql.connector.connect(host="localhost", user="root",
                                   password="", database="stock")
    mycursor = mydb.cursor()
    sql = "SELECT * FROM sales"
    mycursor.execute(sql)
    print("\t\t\t\t SALES DETAILS")
    print("-" * 80)
    print("Sales ID    Date    Product Code    Price       Quantity       Total")
    print("-" * 80)
    for x in mycursor:
        print(x[0], "\t", x[1], "\t", x[2], "\t", x[3], "\t\t", x[4], "\t\t", x[5])
    print("-" * 80)


def list_prcat(cat):
    mydb = mysql.connector.connect(host="localhost", user="root",
                                   password="", database="stock")
    mycursor = mydb.cursor()
    print(cat)
    sql="SELECT * from product WHERE pcat =%s"
    val = (cat,)
    mycursor.execute(sql, val)
    clrscr()
```

```
        print("\t\t\t\t PRODUCT DETAILS")
        print("\t\t", "-" * 47)
        print("\t\t code   name   price   quantity   category")
        print("\t\t", "-" * 47)
        for i in mycursor:
                print("\t\t", i[0], "\t", i[1], "\t", i[2], "\t", i[3], "\t\t", i[4])
        print("\t\t", "-" * 47)


def add_user():
        mydb = mysql.connector.connect(host="localhost", user="root",
                                                password="", database="stock")
        mycursor = mydb.cursor()
        uid = input("Enter emaid id :")
        name = input("Enter Name :")
        password = input("Enter Password :")
        sql = "INSERT INTO user values (%s,%s,%s);"
        val = (uid, name, password)
        mycursor.execute(sql, val)
        mydb.commit()
        print(mycursor.rowcount, "user created")


def list_user():
        mydb = mysql.connector.connect(host="localhost", user="root",
                                                password="", database="stock")
        mycursor = mydb.cursor()
        sql = "SELECT uid, uname from user"
        mycursor.execute(sql)
        clrscr()
        print("\t\t\t\t USER DETAILS")
        print("\t\t", "-" * 27)
        print("\t\t UID       name    ")
        print("\t\t", "-" * 27)
        for i in mycursor:
                print("\t\t", i[0], "\t", i[1])
        print("\t\t", "-" * 27)
```

```
def clrscr():
	print("\n"*5)

while True:
	clrscr()
	print("\t\t\t STOCK MANAGEMENT")
	print("\t\t\t **********\n")
	print("\t\t 1. PRODUCT MANAGEMENT")
	print("\t\t 2. PURCHASE MANAGEMENT")
	print("\t\t 3. SALES MANAGEMENT")
	print("\t\t 4. USER MANAGEMENT")
	print("\t\t 5. DATABASE SETUP")
	print("\t\t 6. EXIT\n")
	n = int(input("Enter your choice :"))
	if n == 1:
		product_mgmt()
	if n == 2:
		os.system('cls')
		purchase_mgmt()
	if n == 3:
		sales_mgmt()
	if n == 4:
		user_mgmt()
	if n == 5:
		db_mgmt()
	if n == 6:
		break
```

Practical File

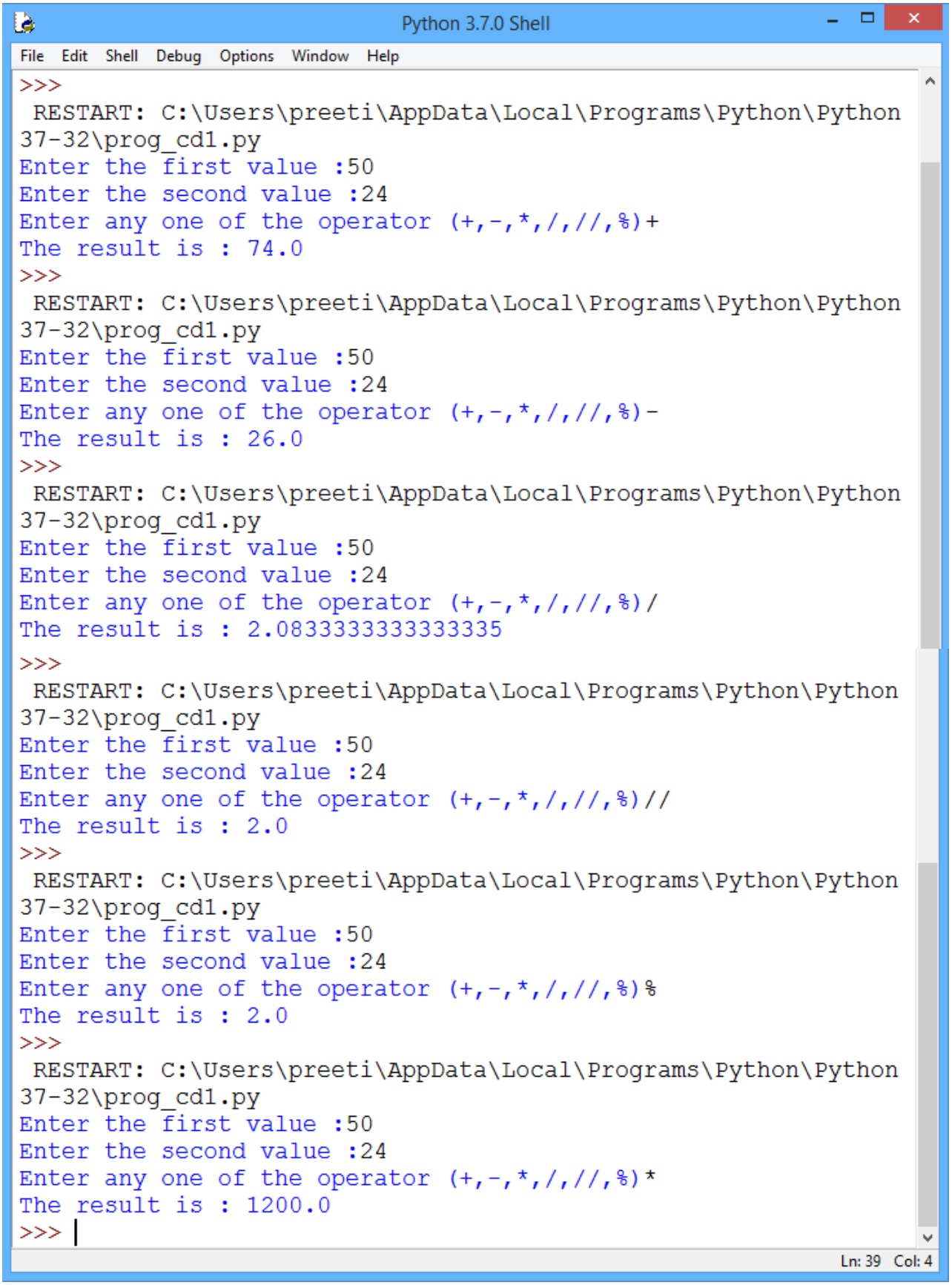
Class XII - Computer Science with Python(083)

Program 1: Program to enter two numbers and print the arithmetic operations like +,-,*, /, // and %.

Solution:

```
#Program for Arithmetic Calculator

result = 0

val1 = float(input("Enter the first value :"))

val2 = float(input("Enter the second value :"))

op = input("Enter any one of the operator (+,-,*,/,//,%)")

if op == "+":

   result = val1 + val2

elif op == "-":

   result = val1 - val2

elif op == "*":

   result = val1 * val2

elif op == "/":

   if val2 == 0:

      print("Please enter a value other than 0")

   else:

      result = val1 / val2

elif op == "//":

   result = val1 // val2

else:

   result = val1 % val2
```

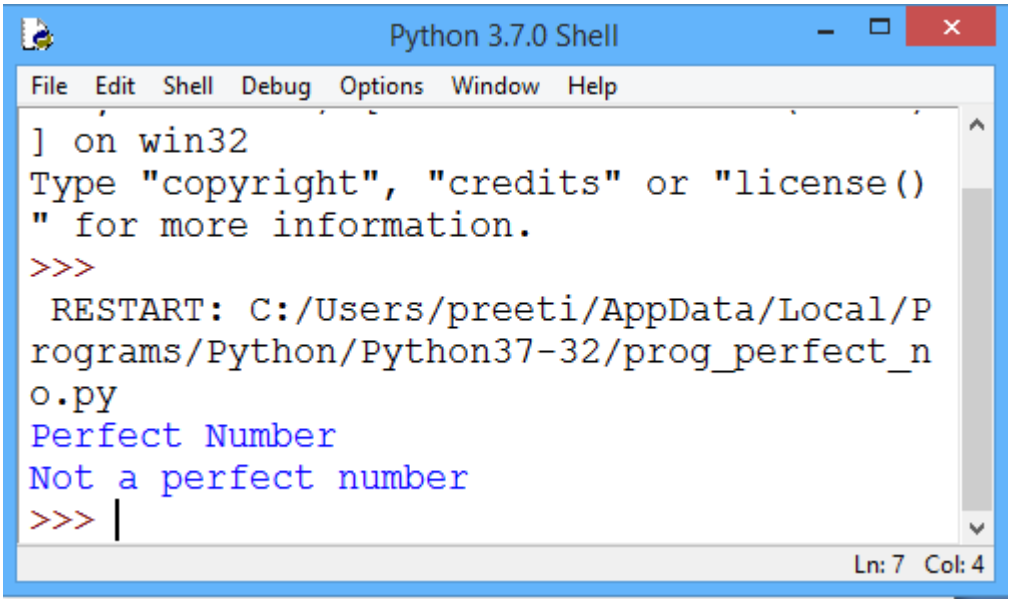
```
print("The result is :",result)
```


Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
>>>
RESTART: C:\Users\preeti\AppData\Local\Programs\Python\Python37-32\prog_cd1.py
Enter the first value :50
Enter the second value :24
Enter any one of the operator (+,-,*,/,//,%)+
The result is : 74.0
>>>
RESTART: C:\Users\preeti\AppData\Local\Programs\Python\Python37-32\prog_cd1.py
Enter the first value :50
Enter the second value :24
Enter any one of the operator (+,-,*,/,//,%)-
The result is : 26.0
>>>
RESTART: C:\Users\preeti\AppData\Local\Programs\Python\Python37-32\prog_cd1.py
Enter the first value :50
Enter the second value :24
Enter any one of the operator (+,-,*,/,//,%)/
The result is : 2.0833333333333335
>>>
RESTART: C:\Users\preeti\AppData\Local\Programs\Python\Python37-32\prog_cd1.py
Enter the first value :50
Enter the second value :24
Enter any one of the operator (+,-,*,/,//,%)//
The result is : 2.0
>>>
RESTART: C:\Users\preeti\AppData\Local\Programs\Python\Python37-32\prog_cd1.py
Enter the first value :50
Enter the second value :24
Enter any one of the operator (+,-,*,/,//,%)%
The result is : 2.0
>>>
RESTART: C:\Users\preeti\AppData\Local\Programs\Python\Python37-32\prog_cd1.py
Enter the first value :50
Enter the second value :24
Enter any one of the operator (+,-,*,/,//,%)*
The result is : 1200.0
>>>
Ln: 39 Col: 4

Program 2: Write a program to find whether an inputted number is perfect or not.

Solution:

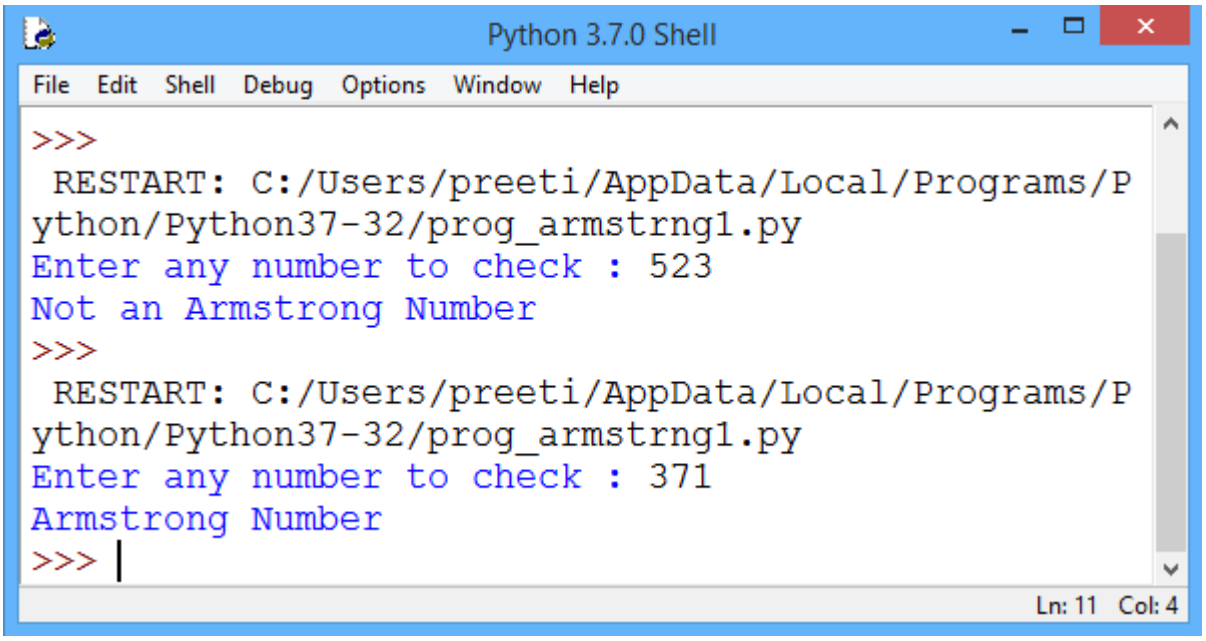
```
# To find whether a number is perfect or not

def pernum(num):

   divsum=0

   for i in range(1,num):

      if num%i == 0:

         divsum+=i

   if divsum==num:

      print('Perfect Number')

   else:

      print('Not a perfect number')


pernum(6)

pernum(15)
```



Program 3: Write a Program to check if the entered number is Armstrong or not.

Solution:

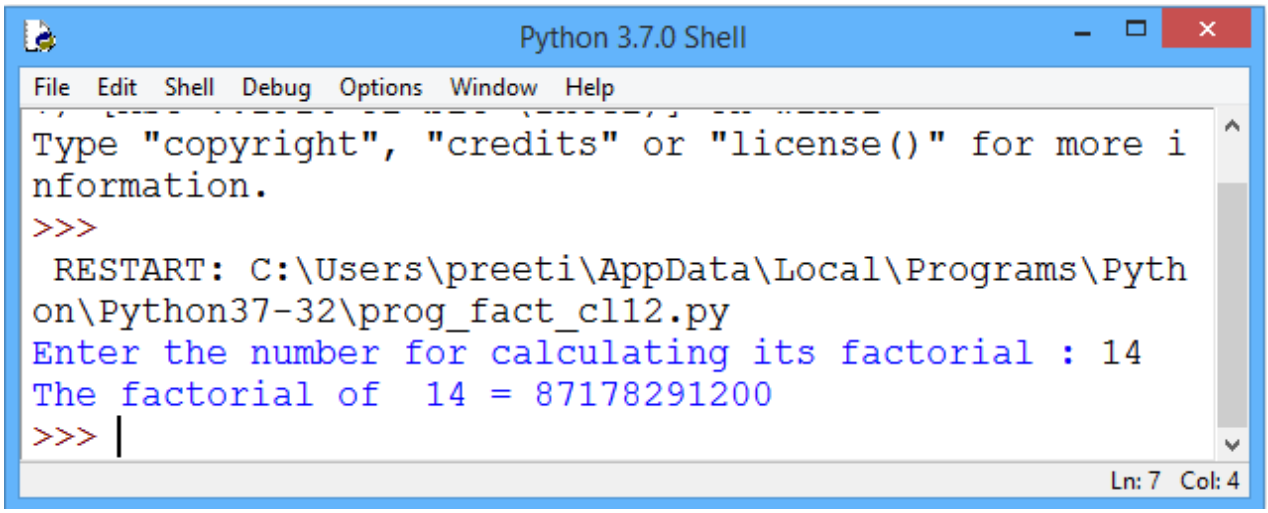
```
# Program to check if the entered number is Armstrong or not.

#An Armstrong number has sum of the cubes of its digits is equal to the number itself

no=int(input("Enter any number to check : "))

no1 = no

sum = 0

while(no>0):

    ans = no % 10;

    sum = sum + (ans * ans * ans)

    no = int (no / 10)

if sum == no1:

    print("Armstrong Number")

else:

    print("Not an Armstrong Number")
```



Program 4: Write a Program to find factorial of the entered number.

Solution:

```
#Program to calculate the factorial of an inputted number (using while loop)

num = int(input("Enter the number for calculating its factorial : "))

fact = 1

i = 1

while i<=num:

   fact = fact*i

   i = i + 1

print("The factorial of ",num,"=",fact)
```

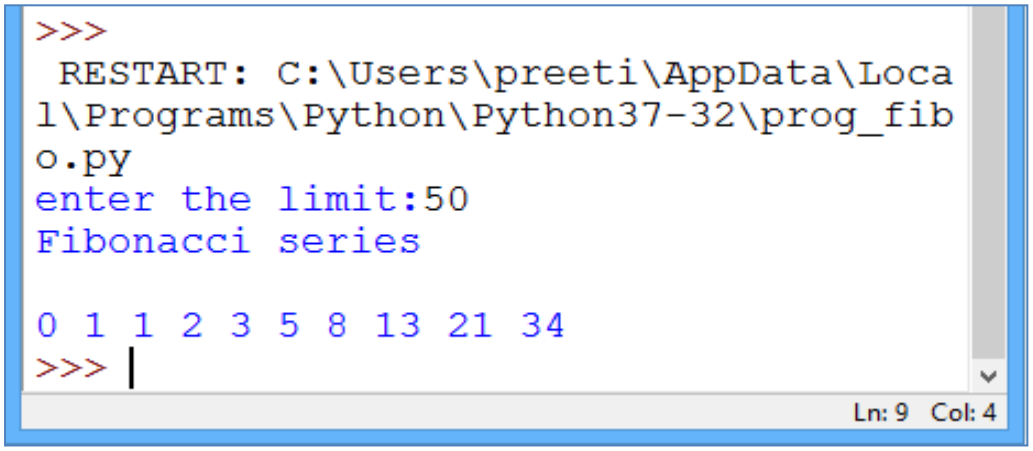


Program 5: Write a Program to enter the number of terms and to print the Fibonacci Series.

Solution:

```
#fibonacci

i =int(input("enter the limit:"))

x = 0
```

```
y = 1

z = 1

print("Fibonacci series \n")

print(x, y,end= " ")

while(z<= i):

   print(z, end=" ")

   x = y

   y = z

   z = x + y
```



Program 6: Write a Program to enter the string and to check if it's palindrome or not using loop.

Solution:

```
# Program to enter the string and check if it's palindrome or not using 'for' loop.

msg=input("Enter any string : ")

newlist=[]

newlist[:0]=msg

l=len(newlist)

ed=l-1

for i in range(0,l):
```

```
    if newlist[i]!=newlist[ed]:
        print ("Given String is not a palindrome")
        break
    if i>=ed:
        print ("Given String is a palindrome")
        break
    l=l-1
    ed = ed - 1
```

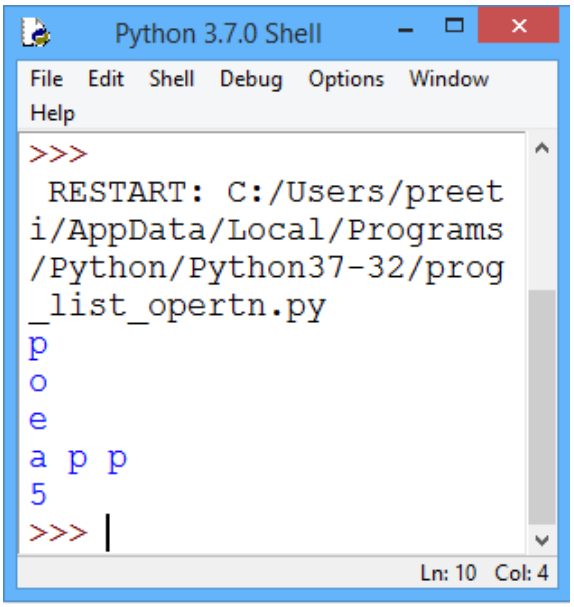
```
>>>
 RESTART: C:/Users/preeti/AppData/Local/Program
s/Python/Python37-32/prog_palind.py
Enter any string : NITIN
Given String is a palindrome
>>>
 RESTART: C:/Users/preeti/AppData/Local/Program
s/Python/Python37-32/prog_palind.py
Enter any string : PYTHON
Given String is not a palindrome
>>>
                                                Ln: 17  Col: 4
```

Program 7: Write a Program to show the outputs based on entered list.

Solution:

```
my_list = ['p','r','o','b','e']

# Output: p

print(my_list[0])

# Output: o

print(my_list[2])

# Output: e

print(my_list[4])

# Error! Only integer can be used for indexing
```

```
# my_list[4.0]

# Nested List

n_list = ["Happy", [2,0,1,5]]

# Nested indexing

# Output: a

print(n_list[0][1],n_list[0][2],n_list[0][3])

# Output: 5

print(n_list[1][3])
```

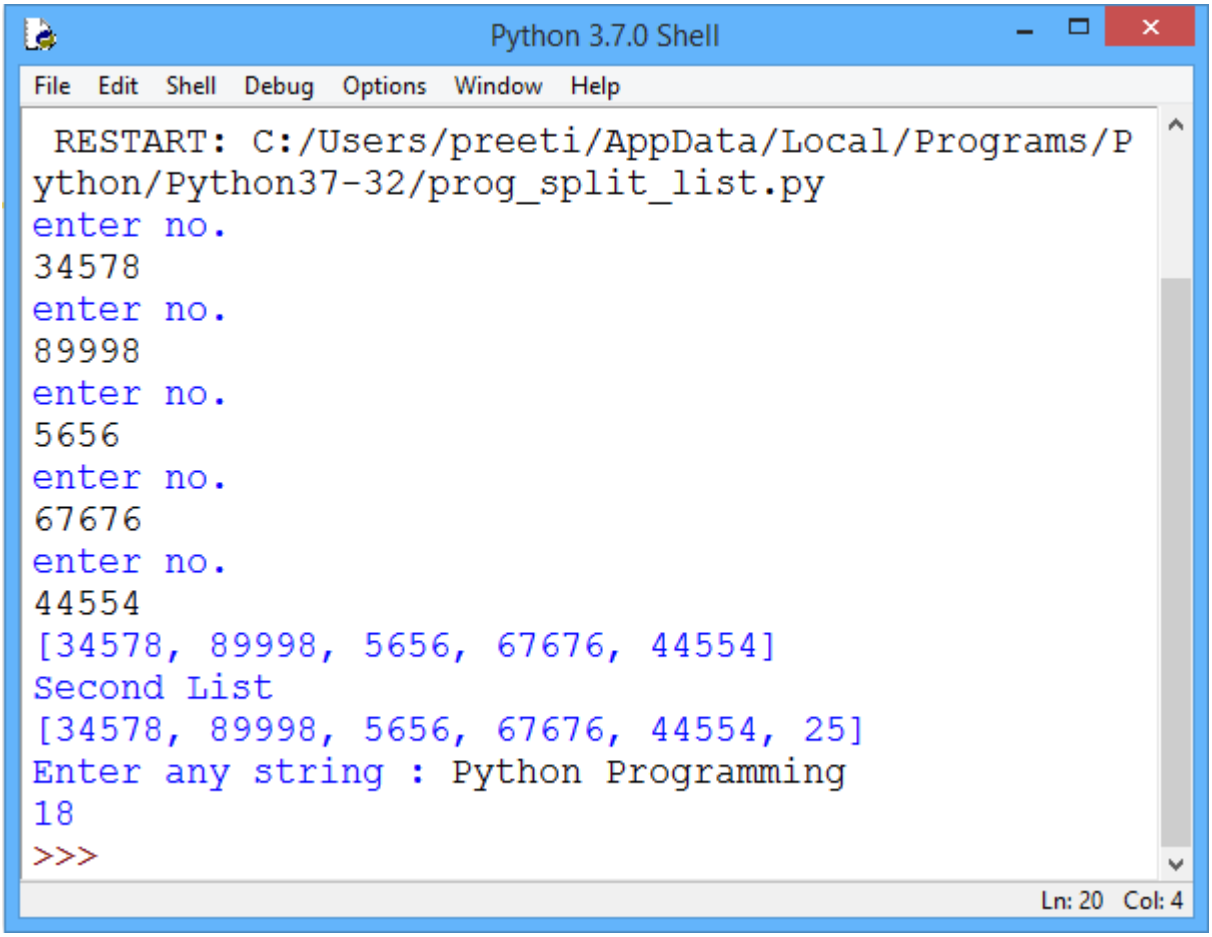


Program 8: Write a Program to enter the numbers in a list using split () and to use all the functions related to list.

Solution:

```
#Program to enter the numbers in a list using split () and to use all the functions related to list.

# numbers = [int(n, 10) for n in input().split(",")]

# print (len(numbers))

 memo=[]

for i in range (5):
```

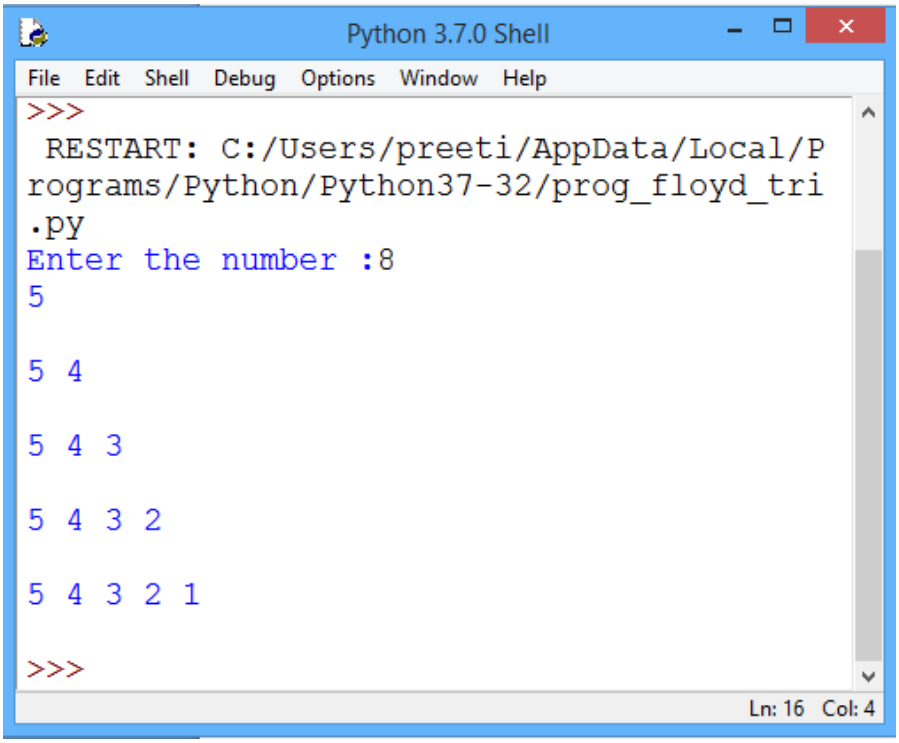
```
    x=int(input("enter no. \n"))
    memo.insert(i,x)
    i+=1
print(memo)
memo.append(25)
print("Second List")
print(memo)
msg=input("Enter any string : ")
newlist=[]
newlist[:0]=msg
l=len(newlist)
print(l)
```



Program 9: Write a Program to enter the number and print the Floyd's Triangle in decreasing order.

Solution:

```
#Floyd's triangle

n=int(input("Enter the number :"))

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

   for j in range(5,i-1,-1):

      print (j,end=' ')

   print('\n')
```

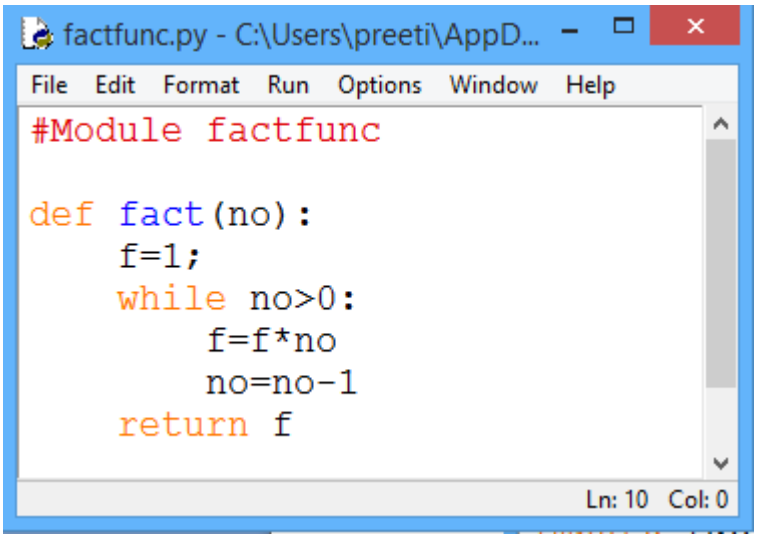


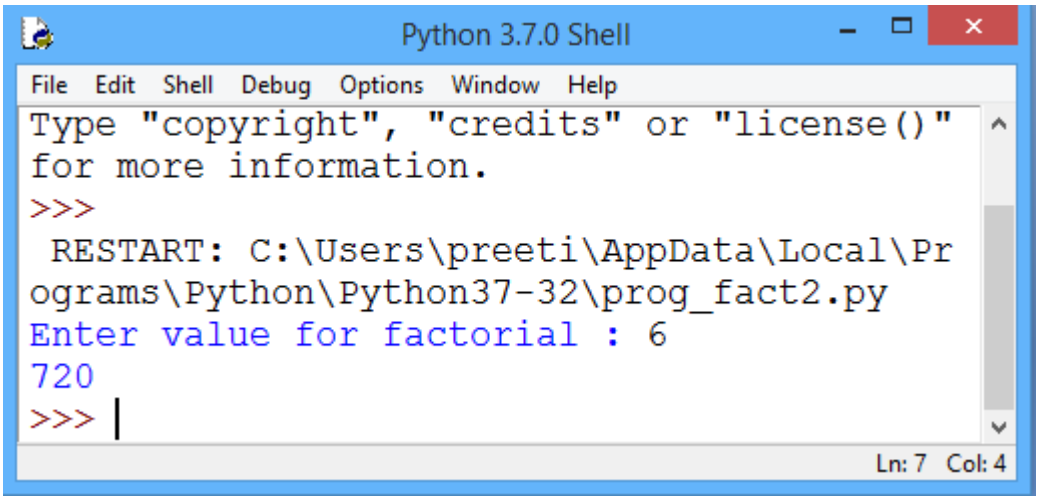
Program 10: Write a Program to find factorial of entered number using user-defined module fact().

Solution:

```
#Using function

import factfunc

x=int(input("Enter value for factorial : "))

ans=factfunc.fact(x)
```

print (ans)





Program 11: Write a Program to enter the numbers and find Linear Search, Binary Search, Lowest Number and Selection Sort using list/array code.

Solution:

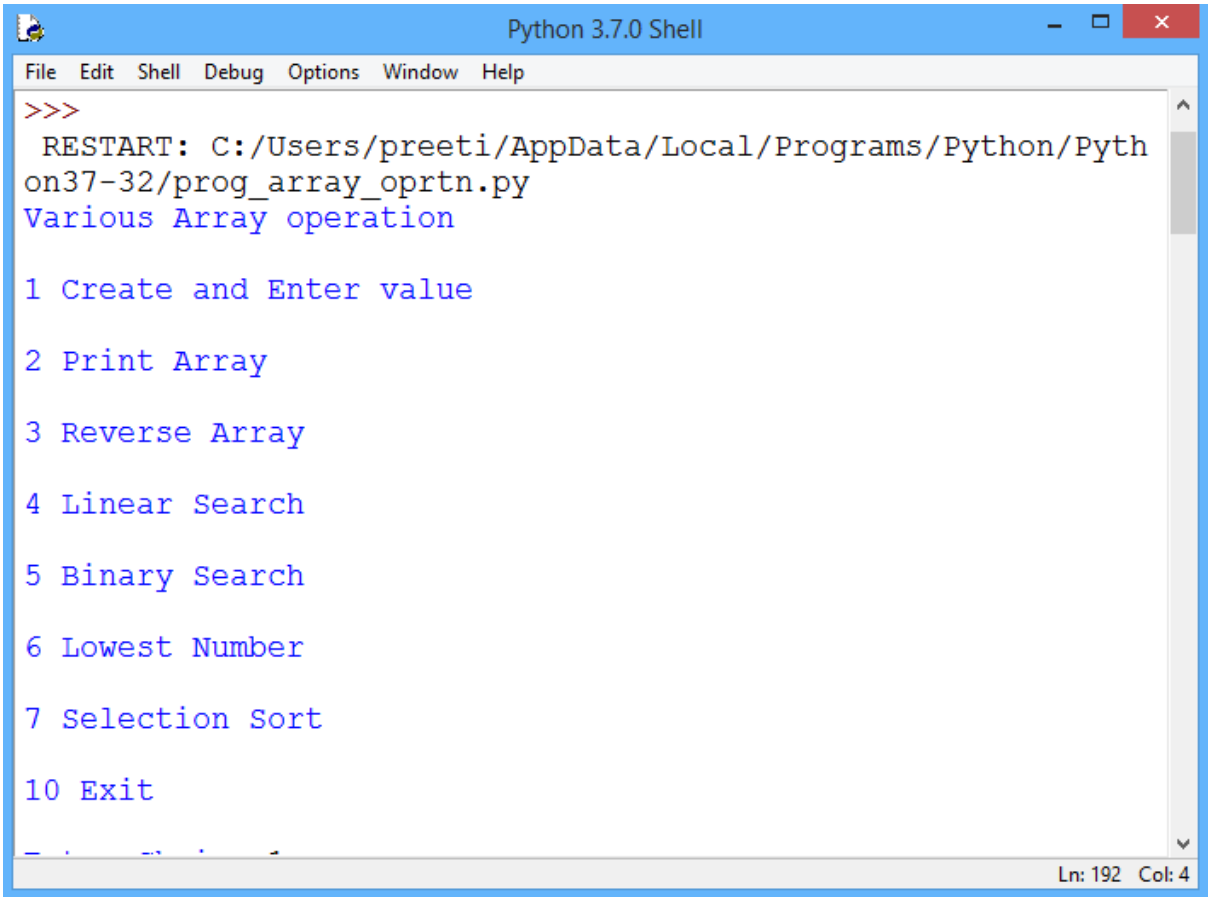
```
arr=[]

def array_operation():

    ch=1

    while ch!=10:

        print('Various Array operation\n')

        print('1 Create and Enter value\n')

        print('2 Print Array\n')

        print('3 Reverse Array\n')
```

```
        print('4 Linear Search\n')
        print('5 Binary Search\n')
        print('6 Lowest Number \n')
        print('7 Selection Sort\n')
        print('10 Exit\n')
        ch=int(input('Enter Choice '))
        if ch==1 :
           appendarray()
        elif ch==2 :
           print_array()
        elif ch==3 :
           reverse_array()
        elif ch==4 :
           linear_search()
        elif ch==5 :
           binary_search()
        elif ch==6 :
           min_number()
        elif ch==7 :
           selection_sort()

def appendarray():
    for i in range(0,10):
        x=int(input('Enter Number : '))
        arr.insert(i,x)
```

```
#-------------------------------------------------------------------------------------------------------------------
---------------
def print_array():
   for i in range(0,10):
      print(arr[i]),
#-------------------------------------------------------------------------------------------------------------------
---------------
def reverse_array():
   for i in range(1,11):
      print(arr[-i]),
#-------------------------------------------------------------------------------------------------------------------
---------------
def lsearch():
   try:
      x=int(input('Enter the Number You want to search : '))
      n=arr.index(x)
      print ('Number Found at %d location'% (i+1))
   except:
      print('Number Not Exist in list')
#-------------------------------------------------------------------------------------------------------------------
---------------
def linear_search():
   x=int(input('Enter the Number you want to search : '))
   fl=0
   for i in range(0,10):
      if arr[i]==x :
         fl=1
```

```
            print ('Number Found at %d location'% (i+1))
            break
    if fl==0 :
        print ('Number Not Found')
#-------------------------------------------------------------------------------------------------------------------
def binary_search():
    x=int(input('Enter the Number you want to search : '))
    fl=0
    low=0
    heigh=len(arr)
    while low<=heigh :
        mid=int((low+heigh)/2)
        if arr[mid]==x :
            fl=1
            print ('Number Found at %d location'% (mid+1))
            break
        elif arr[mid]>x :
            low=mid+1
        else :
            heigh=mid-1

    if fl==0 :
        print ('Number Not Found')
#-------------------------------------------------------------------------------------------------------------------
def min_number():
```

```
    n=arr[0]
    k=0
    for i in range(0,10):
        if arr[i]<n :
            n=arr[i]
            k=i
    print('The Lowest number is %d '%(n))


#-------------------------------------------------------------------------------------------------------------------
---------------
def selection_sort():
    for i in range(0,10):
        n=arr[i]
        k=i
        for j in range(i+1,10):
            if arr[j]<n :
                n=arr[j]
                k=j
        arr[k]=arr[i]
        arr[i]=n
array_operation()
```

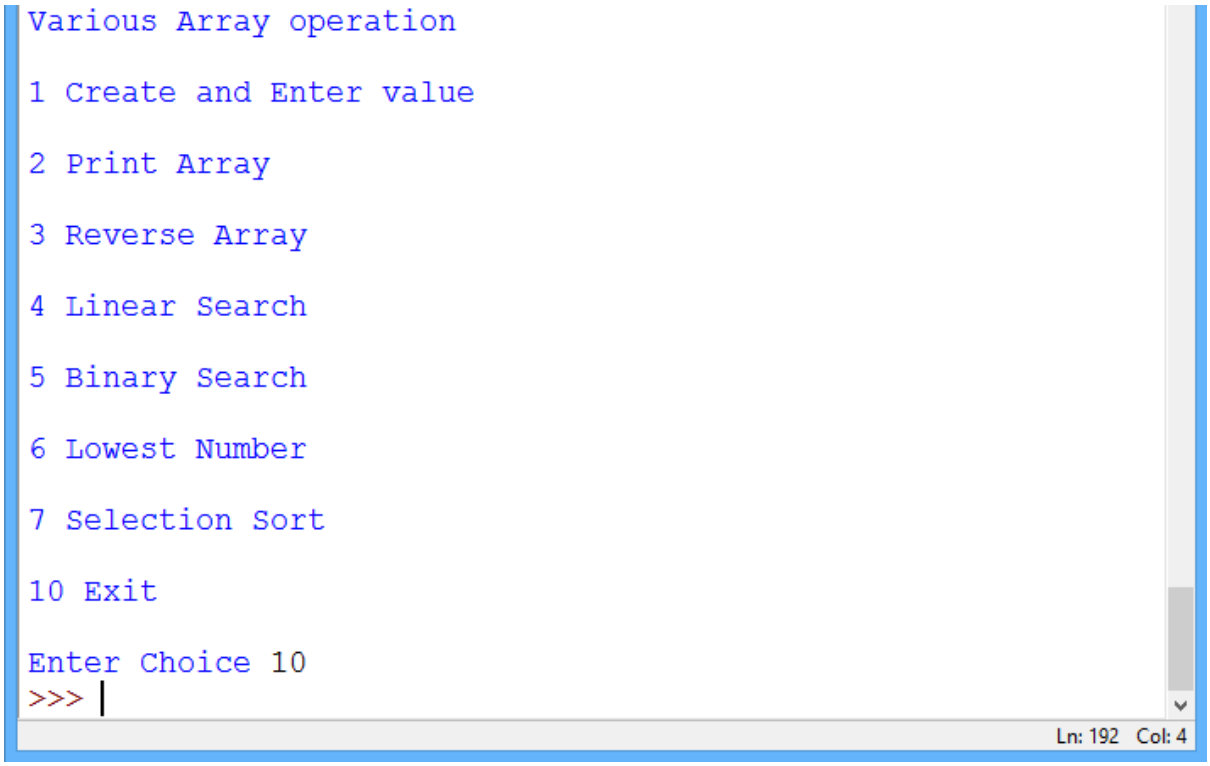



```
Enter Choice 1
Enter Number : 50
Enter Number : 20
Enter Number : 10
Enter Number : 22
Enter Number : 55
Enter Number : 33
Enter Number : 67
Enter Number : 56
Enter Number : 78
Enter Number : 90
Various Array operation

1 Create and Enter value

2 Print Array

3 Reverse Array

4 Linear Search

5 Binary Search

6 Lowest Number

7 Selection Sort

10 Exit

Enter Choice 2
```

```
Enter Choice 2
50
20
10
22
55
33
67
56
78
90
Enter Choice 3
90
78
56
67
33
55
22
10
20
50
Various Array operation

1 Create and Enter value

2 Print Array

3 Reverse Array

4 Linear Search

5 Binary Search

6 Lowest Number

7 Selection Sort

10 Exit

Enter Choice 4
Enter the Number you want to search : 56
Number Found at 8 location
```

```
Various Array operation

1 Create and Enter value

2 Print Array

3 Reverse Array

4 Linear Search

5 Binary Search

6 Lowest Number

7 Selection Sort

10 Exit

Enter Choice 5
Enter the Number you want to search : 50
Number Found at 1 location
```

```
Various Array operation

1 Create and Enter value

2 Print Array

3 Reverse Array

4 Linear Search

5 Binary Search

6 Lowest Number

7 Selection Sort

10 Exit

Enter Choice 6
The Lowest number is 10
```

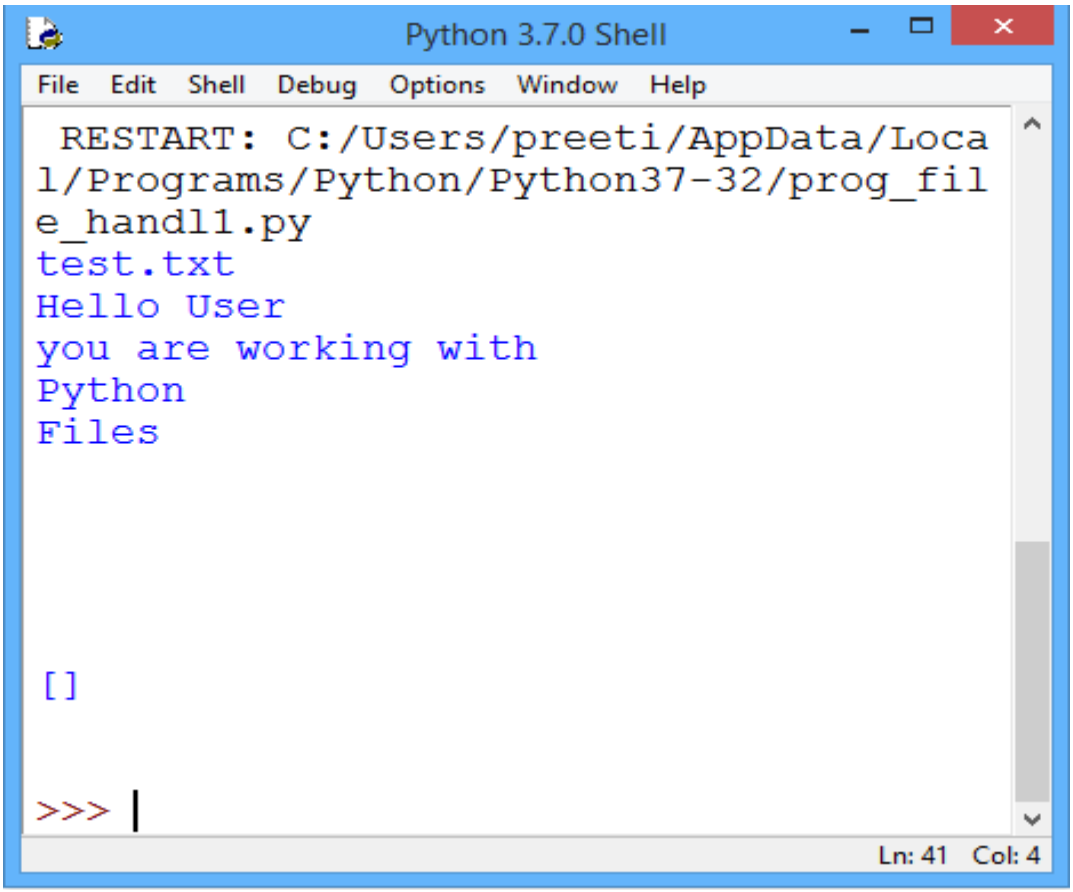


Program 12: Write a Program to read data from data file and show Data File Handling related functions utility in python.

Solution:

```
f=open("test.txt",'r')
print(f.name)
f_contents=f.read()
print(f_contents)
f_contents=f.readlines()
print(f_contents)
f_contents=f.readline()
print(f_contents)
for line in f:
    print(line, end='')
f_contents=f.read(50)
print(f_contents)
```

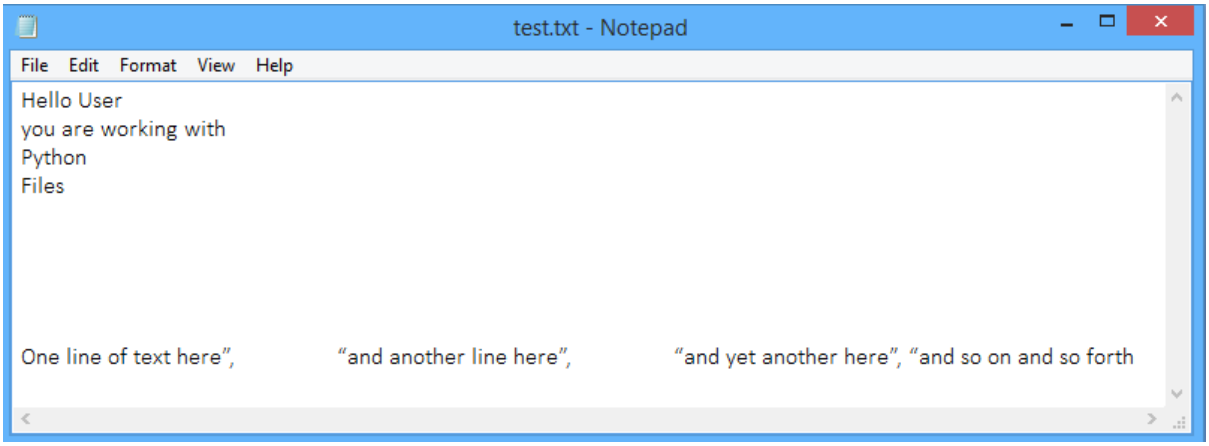
```
size_to_read=10
f_contents=f.read(size_to_read)
while len(f_contents)>0:
    print(f_contents)
    print(f.tell())
    f_contents=f.read(size_to_read)
```



Program 13: Write a Program to read data from data file in append mode and use writeLines function utility in python.

Solution:

```
#Program to read data from data file in append mode
af=open("test.txt",'a')
lines_of_text = ("One line of text here”,\
        “and another line here”,\
        “and yet another here”, “and so on and so forth")
af.writelines('\n' + lines_of_text)
af.close()
```

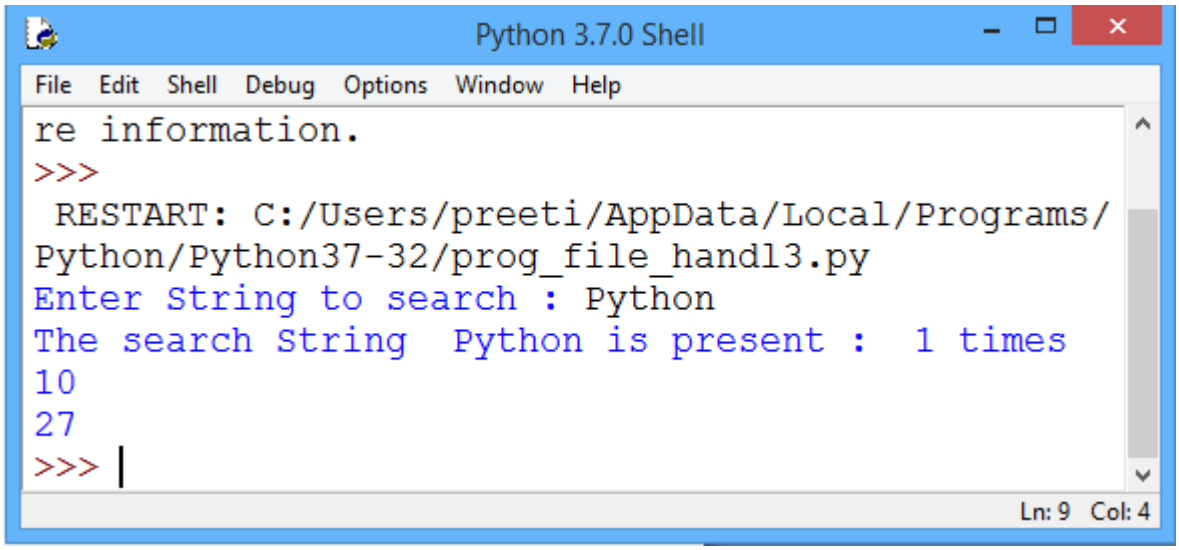


Program 14: Write a Program to read data from data file in read mode and count the particular word occurrences in given string, number of times in python.

Solution:

```
#Program to read data from data file in read mode and
#count the particular word occurrences in given string,
#number of times in python.
f=open("test.txt",'r')
read=f.readlines()
f.close()
times=0 #the variable has been created to show the number of times the loop runs
times2=0 #the variable has been created to show the number of times the loop runs
chk=input("Enter String to search : ")
```

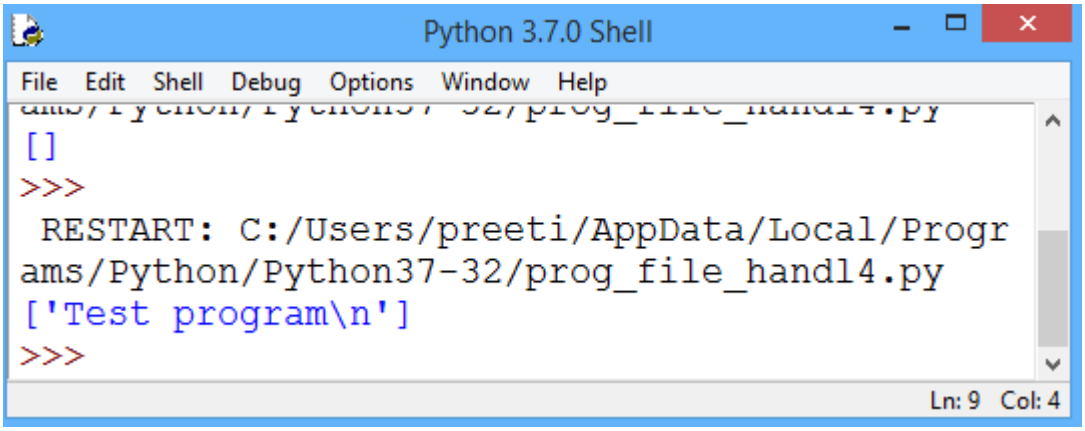
```
count=0
for sentence in read:
    line=sentence.split()
    times+=1
    for each in line:
        line2=each
        times2+=1
        if chk==line2:
            count+=1
print("The search String ", chk, "is present : ", count, "times")
print(times)
print(times2)
```

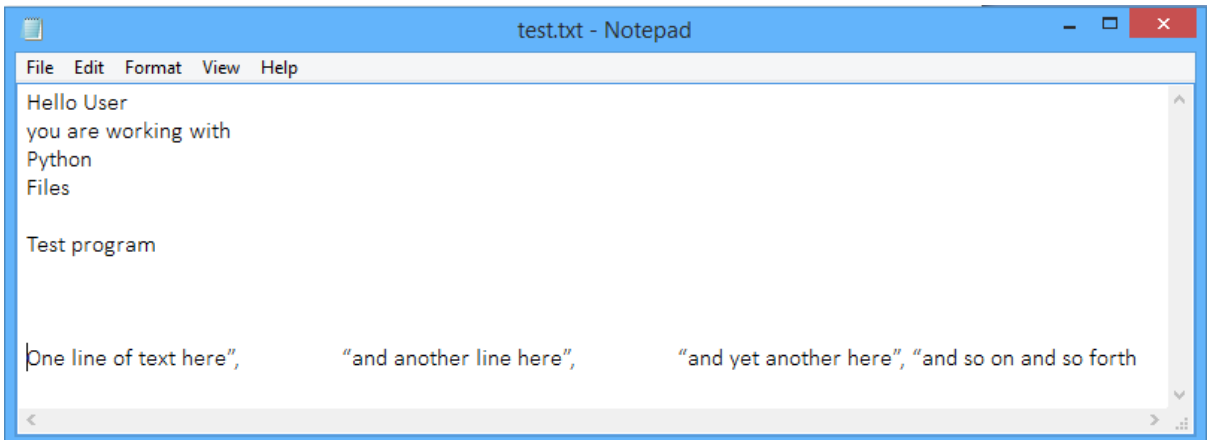


Program 15: Write a Program to read data from data file in read mode and append the words starting with letter 'T' in a given file in python.

Solution:

```
#Program to read data from data file in read mode and

#append the words starting with letter 'T'

#in a given file in python

f=open("test.txt",'r')

read=f.readlines()

f.close()

id=[]

for ln in read:

   if ln.startswith("T"):

      id.append(ln)

print(id)
```

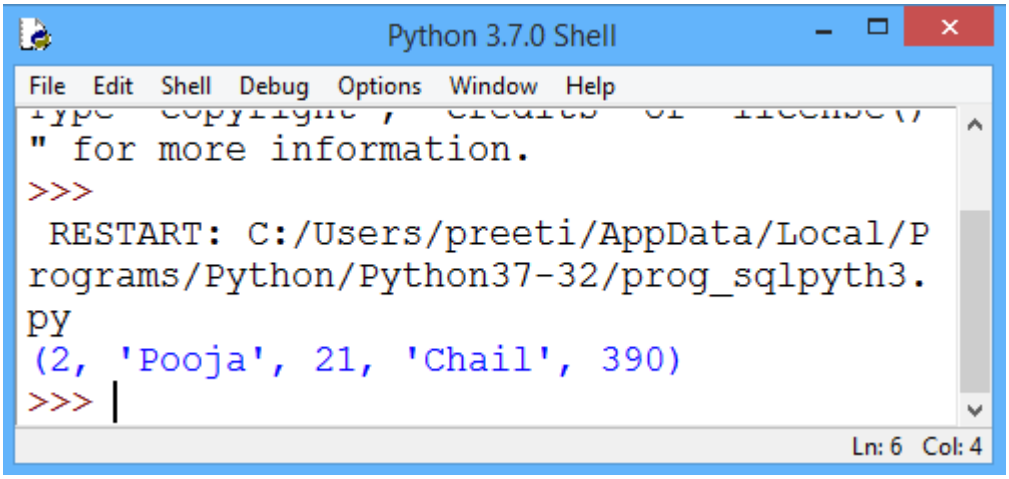




Program 16: Write a Program to show MySQL database connectivity in python.

Solution:

```
import mysql.connector

con=mysql.connector.connect(host='localhost',user='root',password='',db='school')

stmt=con.cursor()

query='select * from student;'

stmt.execute(query)

data=stmt.fetchone()

print(data)
```

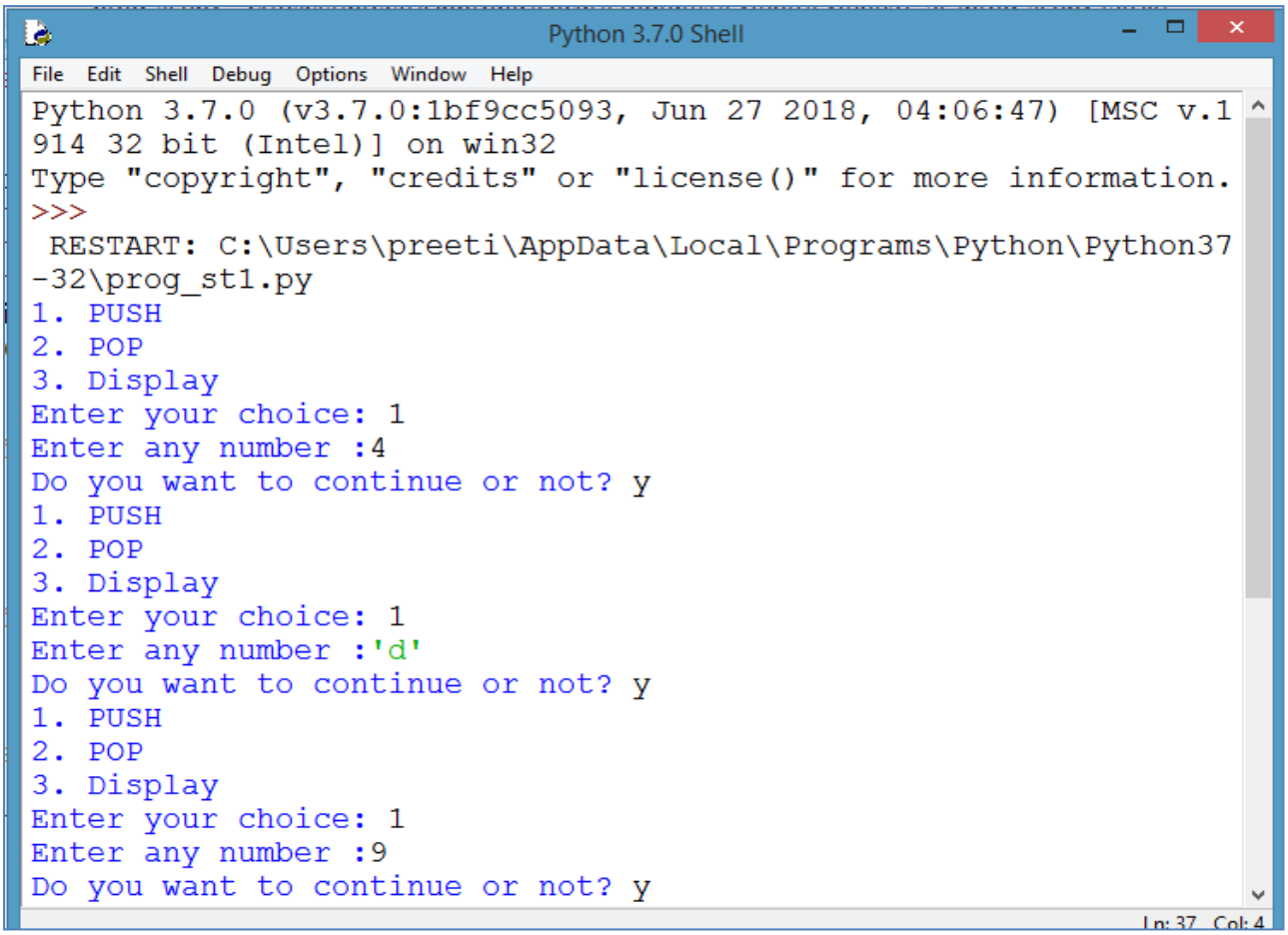


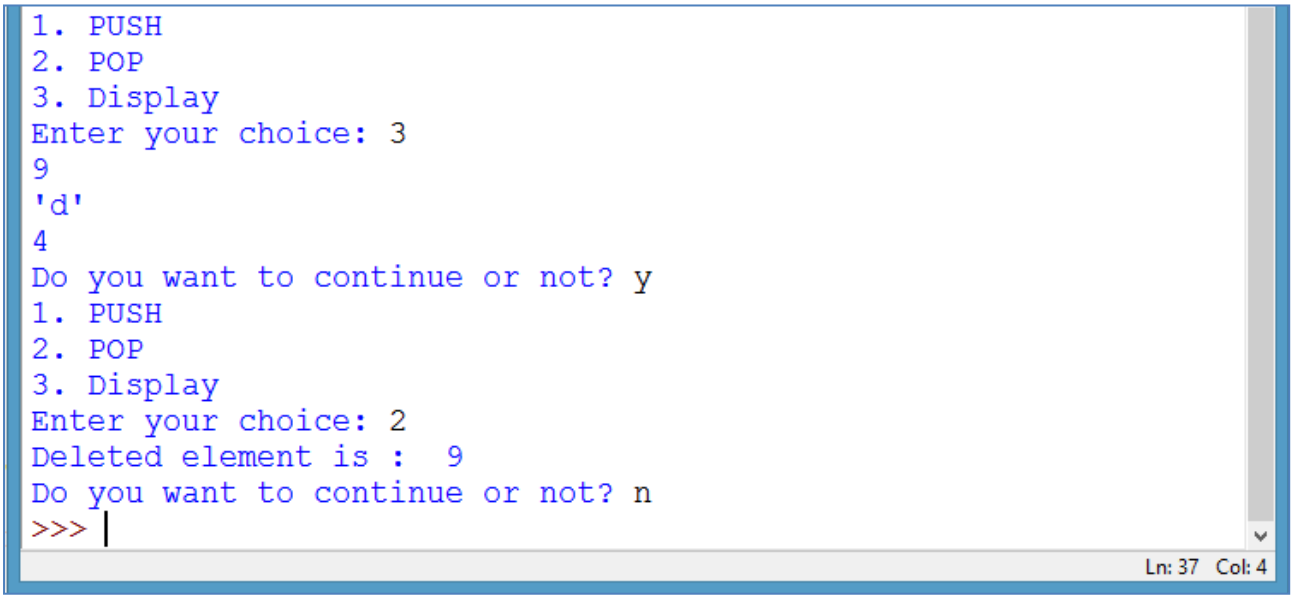
Program 17: Write a Python program to implement all basic operations of a stack, such as adding element (PUSH operation), removing element (POP operation) and displaying the stack elements (Traversal operation) using lists.

Solution:

```
#Implementation of List as stack

s=[]

c="y"

while (c=="y"):

    print ("1. PUSH")
```

```
print ("2. POP ")
print ("3. Display")
choice=int(input("Enter your choice: "))
if (choice==1):
   a=input("Enter any number :")
   s.append(a)
elif (choice==2):
   if (s==[]):
      print ("Stack Empty")
   else:
      print ("Deleted element is : ",s.pop())
elif (choice==3):
   l=len(s)
   for i in range(l-1,-1,-1):  #To display elements from last element to first
      print (s[i])
else:
   print("Wrong Input")
c=input("Do you want to continue or not? ")
```

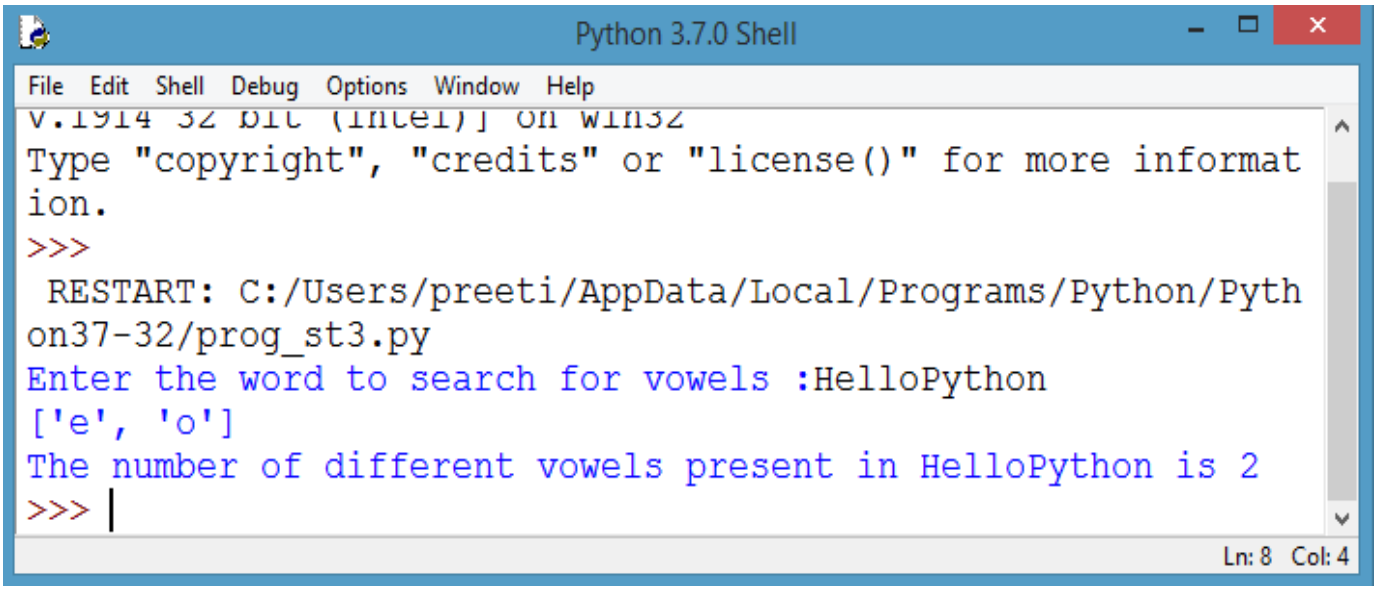

Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1
914 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
RESTART: C:\Users\preeti\AppData\Local\Programs\Python\Python37
-32\prog_st1.py
1. PUSH
2. POP
3. Display
Enter your choice: 1
Enter any number :4
Do you want to continue or not? y
1. PUSH
2. POP
3. Display
Enter your choice: 1
Enter any number :'d'
Do you want to continue or not? y
1. PUSH
2. POP
3. Display
Enter your choice: 1
Enter any number :9
Do you want to continue or not? y
Ln: 37 Col: 4


1. PUSH
2. POP
3. Display
Enter your choice: 3
9
'd'
4
Do you want to continue or not? y
1. PUSH
2. POP
3. Display
Enter your choice: 2
Deleted element is : 9
Do you want to continue or not? n
>>>
Ln: 37 Col: 4

Program 18: Write a program to display unique vowels present in the given word using Stack.

Solution:

```
#Program to display unique vowels present in the given word
#using Stack


vowels =['a','e','i','o','u']
word = input("Enter the word to search for vowels :")
Stack = []
for letter in word:
    if letter in vowels:
        if letter not in Stack:
            Stack.append(letter)
print(Stack)
print("The number of different vowels present in",word,"is",len(Stack))
```

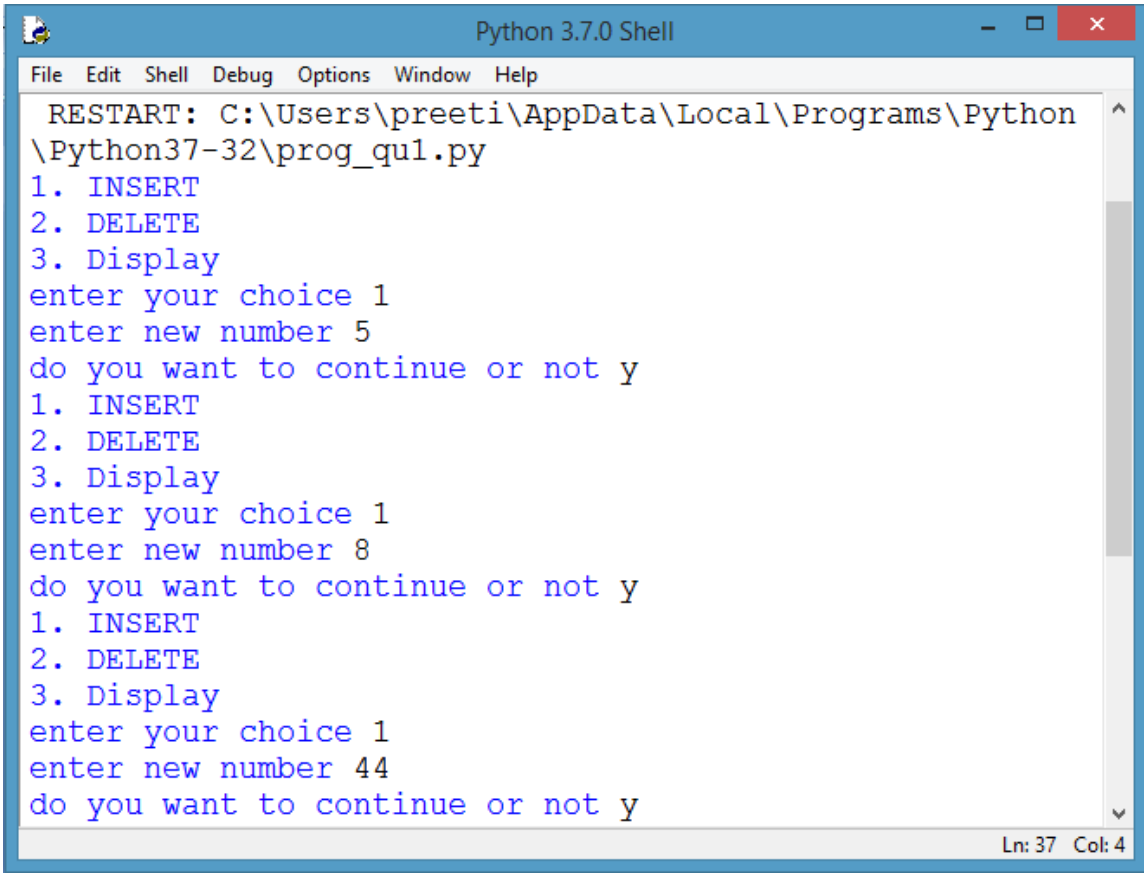


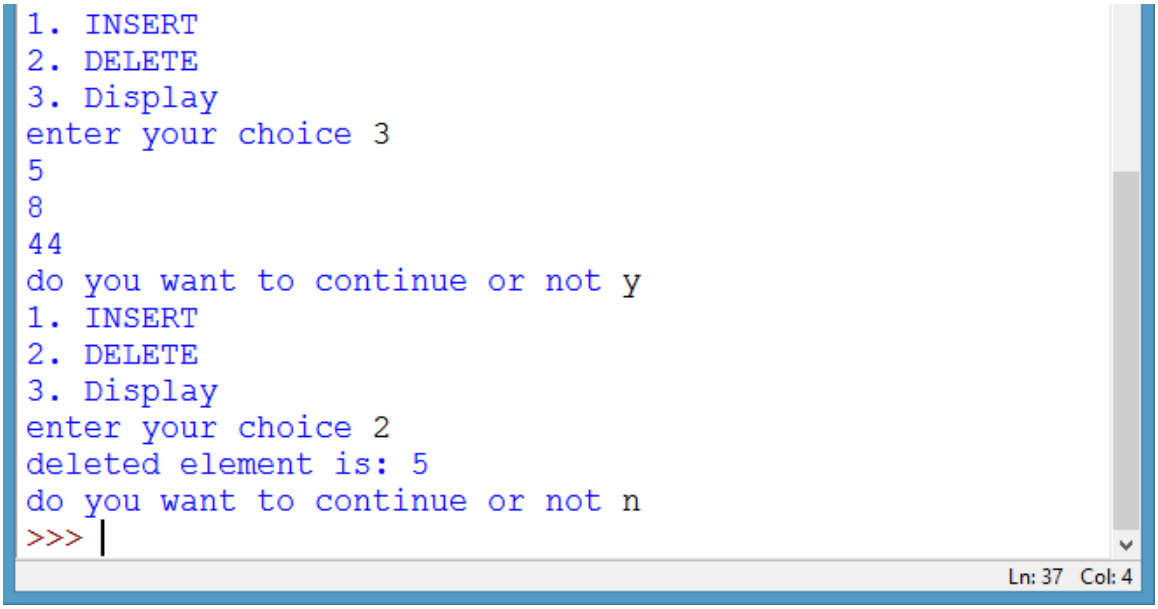
Program 19: Write a program in Python to add, delete and display elements from a queue using list.

Solution:

```
#Implementing List as a Queue - using function append() and pop()
a=[]
c='y'
while (c=='y'):
    print ("1. INSERT")
    print ("2. DELETE ")
    print ("3. Display")
    choice=int(input("Enter your choice: "))
    if (choice==1):
        b=int(input("Enter new number: "))
        a.append(b)
    elif (choice==2):
        if (a==[]):
            print("Queue Empty")
        else:
            print ("Deleted element is:",a[0])
            a.pop(0)
    elif (choice==3):
        l=len(a)
        for i in range(0,l):
            print (a[i])
    else:
        print("wrong input")
```

c=input("Do you want to continue or not: ")





Program 20: Perform all the operations with reference to table ‘Employee’ through MySQL-Python connectivity.

Solution:

```
import MySQLdb

# Using connect method to connect database

db1 = MySQLdb.connect("localhost","root","","TESTDB" )

# using cursor() method for preparing cursor

cursor = db1.cursor()

# Preparing SQL statement to create EMP table

sql = "CREATE TABLE EMP(empno integer primary key,ename  varchar(25) not null,salary float);"

cursor.execute(sql)

# disconnect from server

db1.close()
```

```
Enter password: ****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 4
Server version: 5.1.73-community MySQL Community Server (GPL)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> use testdb
Database changed
mysql> show tables;
Empty set (0.00 sec)

mysql>
```

```
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> use testdb
Database changed
mysql> show tables;
Empty set (0.00 sec)

mysql> show tables;
+------------------+
| Tables_in_testdb |
+------------------+
| emp              |
+------------------+
1 row in set (0.00 sec)

mysql>
```

Inserting a record in ‘emp’

```
import MySQLdb

db1 = MySQLdb.connect("localhost","root","","TESTDB" )

cursor = db1.cursor()

# Prepareing SQL statement to insert one record with the given values

sql = "INSERT INTO EMP VALUES (1,'ANIL KUMAR',86000);"

try:

  cursor.execute(sql)

  db1.commit()
```

except:

db1.rollback()

db1.close()

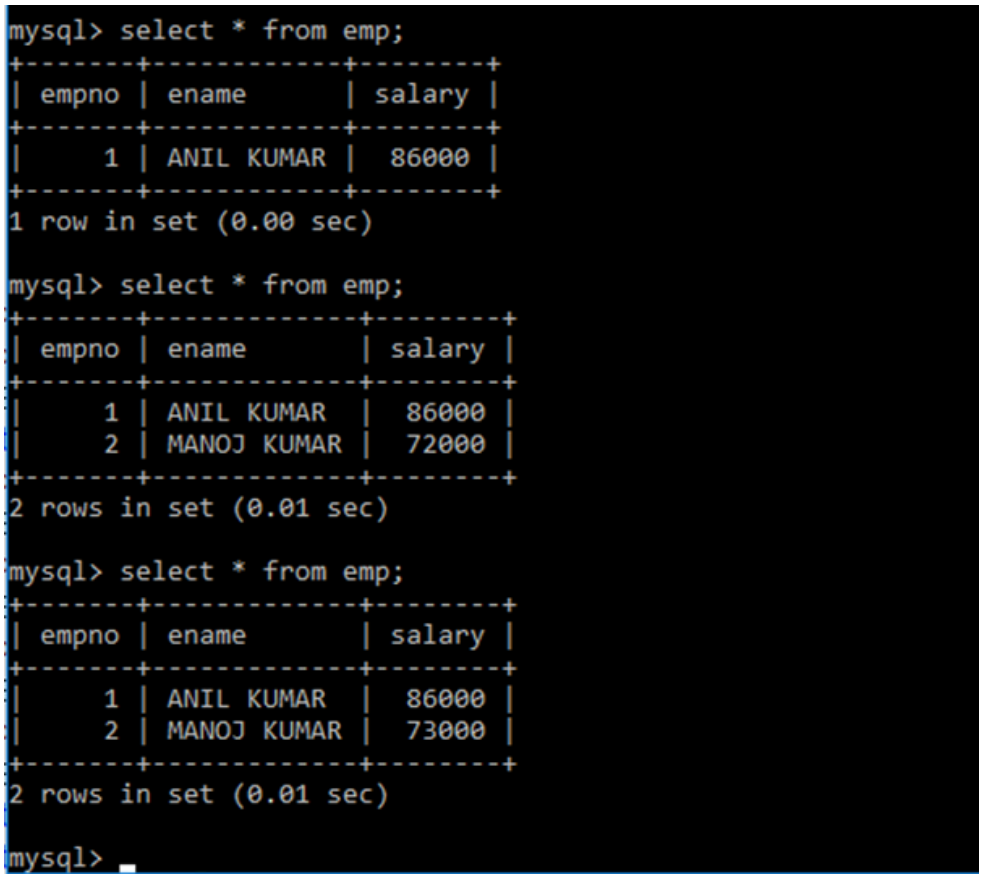
```
mysql> show tables;
+------------------+
| Tables_in_testdb |
+------------------+
| emp              |
+------------------+
1 row in set (0.00 sec)

mysql> select * from emp;
+-------+------------+--------+
| empno | ename      | salary |
+-------+------------+--------+
|     1 | ANIL KUMAR |  86000 |
+-------+------------+--------+
1 row in set (0.00 sec)

mysql>
```

Fetching all the records from EMP table having salary more than 70000.

```
import MySQLdb

db1 = MySQLdb.connect("localhost","root","","TESTDB" )

cursor = db1.cursor()

sql = "SELECT * FROM EMP WHERE SALARY > 70000;"

try:

    cursor.execute(sql)

    #using fetchall() function to fetch all records from the table EMP and store in resultset

    resultset = cursor.fetchall()

for row in resultset:


     print (row)

except:

  print ("Error: unable to fetch data")

db1.close()
```

Updating record(s) of the table using UPDATE

```
import MySQLdb

db1 = MySQLdb.connect("localhost","root","","TESTDB" )

cursor = db1.cursor()

#Preparing SQL statement to increase salary of all employees whose salary is less than 80000

sql = "UPDATE EMP SET salary = salary +1000 WHERE salary<80000;"

try:

    cursor.execute(sql)


    db1.commit()

except:


   db1.rollback()

db1.close()
```



Deleting record(s) from table using DELETE

```
import MySQLdb

db1 = MySQLdb.connect("localhost","root","","TESTDB" )

cursor = db1.cursor()

sal=int(input("Enter salary whose record to be deleted : "))

#Preparing SQL statement to delete records as per given condition

sql = "DELETE FROM EMP WHERE salary =sal”

try:

    cursor.execute(sql)

    print(cursor.rowcount, end=" record(s) deleted ")

    db1.commit()

except:

     db1.rollback()

db1.close()
```

Output:

```
>>> Enter salary whose record to be deleted: 80000

1 record(s) deleted

>>>
```

```
mysql> select * from emp;
+-------+-------------+--------+
| empno | ename       | salary |
+-------+-------------+--------+
|     1 | ANIL KUMAR  |  86000 |
|     2 | MANOJ KUMAR |  72000 |
+-------+-------------+--------+
2 rows in set (0.01 sec)

mysql> select * from emp;
+-------+-------------+--------+
| empno | ename       | salary |
+-------+-------------+--------+
|     1 | ANIL KUMAR  |  86000 |
|     2 | MANOJ KUMAR |  73000 |
+-------+-------------+--------+
2 rows in set (0.01 sec)

mysql> select * from emp;
+-------+------------+--------+
| empno | ename      | salary |
+-------+------------+--------+
|     1 | ANIL KUMAR |  86000 |
+-------+------------+--------+
1 row in set (0.00 sec)
```

VIVA VOCE

1. What is Python? What are the benefits of using Python?

Ans. Python is a programming language with objects, modules, threads, exceptions and automatic memory management. The benefits of Python are that it is simple and easy, portable, extensible, built-in data structure and is open source.

2. What is pickling and unpickling?

Ans. Pickle module accepts any Python object and converts it into a string representation and dumps it into a file by using dump function. This process is called pickling. The process of retrieving original Python objects from the stored string representation is called unpickling.

3. How is Python interpreted?

Ans. Python language is an interpreted language. Python program runs directly from the source code. It converts the source code that is written by the programmer into an intermediate language, which is again translated into machine language that has to be executed.

4. How is memory managed in Python?

Ans. Python memory is managed by Python private heap space. All Python objects and data structures are located in a private heap. The programmer does not have access to this private heap and the interpreter takes care of this Python private heap.

- The allocation of Python heap space for Python objects is done by Python memory manager. The core API gives access to some tools for the programmer to code.
- Python also has an inbuilt garbage collector, which recycles all the unused memory, frees up memory, and makes it available to the heap space.

5. What is the difference between list and tuple?

Ans. The difference between list and tuple is that list is mutable while tuple is not. Tuple can be further implemented as a key to dictionaries.

6. What are the built-in types that Python provides?

Ans. There are mutable and immutable types of Python built-in types. Mutable built-in types offered by Python are:

- List
- Sets
- Dictionaries

Immutable built-in types are:

- Strings
- Tuples
- Numbers

7. What is namespace in Python?

Ans. In Python, every name introduced has a place where it lives and can be looked for. This is known as namespace. It is like a box where a variable name is mapped to the object placed. Whenever the variable is searched, this box will be searched to get the corresponding object.

8. What is lambda in Python?

Ans. It is a single expression, anonymous function often used as inline function.

9. What is pass in Python?

Ans. Pass means no-operation Python statement or, in other words, it is a placeholder in compound statement, where there should be a blank left and nothing should be written there.

10. What is slicing in Python?

Ans. A mechanism to select a range of items from sequence types like list, tuple, strings, etc., is known as slicing.

11. What is docstring in Python?

Ans. A Python documentation string is known as docstring. It is a way of documenting Python functions, modules and classes.

12. What is negative index in Python?

Ans. Python sequences can be indexed using both the positive and negative numbers. For positive index, 0 is the first index, 1 is the second index, so on and so forth. For negative index, (–1) is the last index and (–2) is the second last index and so on and so forth.

13. How can you convert a number into a string?

Ans. In order to convert a number into a string, use the inbuilt function str(). If you want an octal or hexadecimal representation, use the inbuilt function oct() or hex().

14. What do you understand by module and package in Python?

Ans. In Python, module is the way to structure a program. Each Python program file is a module which imports other modules like objects and attributes.

The folder of a Python program is a package of modules. A package can have modules or sub-folders.

15. What are the rules for local and global variables in Python?

Ans. **Local variables:** If a variable is assigned a new value anywhere within a function's body, it is assumed to be local.

Global variables: Those variables that are only referenced inside a function are implicitly global.

16. Explain how to delete a file in Python.

Ans. A file can be deleted by using a command os.remove (filename) or os.unlink(filename)

17. Explain how you can generate random numbers in Python.

Ans. To generate random numbers in Python, you need to import command as:

```
import random
random.random()
```

This returns a random floating point number in the range [0,1)

18. What is the use of // operator in Python?

Ans. It is a Floor Division operator which is used for dividing two operands with the result as quotient showing only digits before the decimal point. For instance, 10//5 = 2 and 10.0//5.0 = 2.0.

19. Mention five benefits of using Python.

Ans. (a) Python comprises a huge standard library for most internet platforms like email, HTML, etc.

(b) Python does not require explicit memory management as the interpreter itself allocates memory to new variables and frees them automatically.

(c) Provides easy readability due to the use of square brackets.

(d) Easy-to-learn for beginners.

(e) Having the built-in data types saves programming time and effort from declaring variables.

20. Mention the use of the split function in Python.

Ans. The use of split function in Python is that it breaks a string into shorter strings using the defined separator. It gives a list of all words present in the string.

21. What are literals in Python?

Ans. Python literals can be defined as data which can be assigned to a variable or constant. There are 5 types of literals available in Python:

- String literals
- Numeric literals
- Boolean literals
- Special literals
- Literal Collections

22. Explain Python functions.

Ans. A function is a set of instructions or a block of code that is written once and can be called and executed whenever required in the program. There are two categories of functions in Python:

- Built-in functions
- User-defined functions

23. Name the different file processing modes supported by Python.

Ans. Python provides three modes to work with files:

- Read-only mode
- Write-only mode
- Read-Write mode

24. What is an operator in Python?

Ans. An operator is a particular symbol which is used on some values and produces an output as result.

For example, 10 + 30 = 40

Here, "+" and "=" are operators.

25. What are the different types of operators in Python?

Ans. Following is a list of operators in Python:

- Arithmetic Operators
- Relational Operators
- Assignment Operators
- Logical Operators
- Membership Operators
- Identity Operators
- Bitwise Operators

26. What is a Dictionary in Python?

Ans. Dictionary is an important built-in data type in Python. It defines one-to-one relationship between keys and values. Dictionaries contain a pair of keys and their corresponding values.

Dictionaries are indexed by keys.

27. What is the use of HELP() and DIR() function in Python?

Ans. Both Help() and dir() functions are accessible from the Python interpreter and used for viewing a consolidated collection of built-in functions.

Help(): The help() function is used to display the documentation string and also facilitates you to see the help related to modules, keywords, attributes, etc.

Dir(): The dir() function is used to display the defined symbols.

28. How does Python do compile-time and run-time code checking?

Ans. In Python, some amount of coding is done at compile-time, but most of the checking such as type, name, etc., is held up until the code execution. Consequently, if the Python code references a user-defined function that does not exist, the code will compile successfully. The Python code will fail only with an exception when the code execution path does not exist.

29. Explain the use of TRY: EXCEPT: RAISE: and FINALLY:.

Ans. Try, except and finally blocks are used in Python error-handling mechanism. Code is executed in the try block until an error occurs. Except block is used to receive and handle all errors. Control is transferred to the appropriate except block. In all cases, the finally block is executed. Raise may be used to raise your own exceptions.

30. What is the purpose of PYTHONPATH environment variable?

Ans. PYTHONPATH has a role similar to PATH. This variable tells the Python interpreter where to locate the module files imported into a program. It should include the Python source library directory and the directories containing Python source code.

31. What are the supported data types in Python?

Ans. Python has five standard data types:

- Numbers
- String
- List
- Tuple
- Dictionary

32. What is the difference between lists and tuples?

Ans.

Lists	**Tuples**
Lists are mutable, *i.e.*, they can be edited.	Tuples are immutable (tuples are lists which can't be edited).
Lists are slower than tuples.	Tuples are faster than lists.
Syntax: `list1 = [10, 'Python', 44.5]`	**Syntax:** `tup1 = (10, 'Python' , 44.5)`

33. How will you reverse a list?

Ans. list.reverse() − Reverses items of list in place.

34. What is a string in Python?

Ans. A string in Python is a sequence of alphanumeric characters. They are immutable objects. It means that they don't allow modification once they are assigned a value. Python provides several methods such as join(), replace(), or split() to alter strings.

35. Why is the Return keyword used in Python?

Ans. The purpose of a function is to receive the inputs and return some output.

The return is a Python statement which we can use in a function for sending a value back to its calling function or the operating system.

36. When should you use the "Break" in Python?

Ans. Python provides a break statement to exit from a loop. Whenever the break hits in the code, the control of the program immediately exits from the body of the loop. The break statement in a nested loop causes the control to exit from the inner iterative block.

37. What is a tuple in Python?

Ans. A tuple is a collection of type data structure in Python which is immutable. Tuples are similar to sequences, just like the lists. However, there are some differences between a tuple and a list—the former doesn't allow modifications, the latter does.

Also, the tuples use parentheses for enclosing but the lists have square brackets in their syntax.

38. How do you debug a program in Python? Is it possible to step through the Python code?

Ans. Yes, we can use the Python debugger (**pdb**) to debug any Python program. If we start a program using **pdb**, then it lets us even step through the code.

39. List down some of the PDB commands for debugging Python programs.

Ans. Here are a few PDB commands to start debugging Python code:

- Add breakpoint (b)
- Resume execution (c)
- Step-by-step debugging (s)
- Move to the next line (n)
- List source code (l)
- Print an expression (p)

40. Explain the use of “with” statement.

Ans. In Python, generally “with” statement is used to open a file, process the data present in the file, and also to close the file without calling a close() method. “with” statement makes the exception handling simpler by providing cleanup activities.

General form of with:

with open(“filename”, “mode”) as file-var:

processing statements

41. How can we display the contents of text file in reverse order?

Ans. (a) Convert the given file into a list.

(b) Reverse the list by using reversed()

(c) *Eg*: for line in reversed(list(open(“file-name”,”r”)))

(d) print(line)

42. Differentiate between append() and extend() methods.

Ans. Both append() and extend() methods are methods of list. These methods are used to add elements at the end of the list.

- append(element) – adds the given element at the end of the list which has called this method.
- extend(another-list) – adds the elements of another list at the end of the list which is called the extend method.

43. What are the advantages of Python recursion?

Ans. Implementing something using Python recursion requires less effort. The code we write using recursion will be comparatively smaller than the code that is implemented by loops. Again, codes that are written using recursion are easier to understand also.

44. What do you understand by Python modules?

Ans. A file containing Python definitions and statements is called a Python module. So naturally, the filename is the module name which is appended with the suffix **.py**.

45. What do you understand by Python package?

Ans. Python package is a collection of modules in directories that gives a package hierarchy. More elaborately, Python packages are a way of structuring Python’s module by using “dotted module names”. So A.B actually indicates that B is a sub-module which is under a package named A.

46. How can we get current directory using Python?

Ans. To get current directory in Python, we need to use os module. Then, we can get the location of the current directory by using getcwd() function.

47. What is the difference between del keyword and clear() function?

Ans. The difference between del keyword and clear() function is that while del keyword removes one element at a time, clear function removes all the elements.

48. What is primary key?

Ans. Primary key is a combination of columns that uniquely identifies a row in a relational table.

49. What is candidate key?

Ans. All possible combinations of columns that can possibly serve as the primary key are called candidate keys.

50. What is foreign key?

Ans. A combination of columns where values are derived from primary key of some other table is called the foreign key of the table in which it is contained.

51. What is alternate key?

Ans. A candidate key that is not serving as a primary key is called an alternate key.

52. What is MYSQL?

Ans. MYSQL is an open source RDBMS that relies on SQL for processing the data in the database. The database is available for free under the terms of General Public License (GPL).

53. What is RDBMS?

Ans. Relational Database Management System (RDBMS) facilitates access, security and integrity of data and eliminates data redundancy. *For example*, MYSQL, Oracle, Microsoft Sql Server, etc.

54. What is the use of drop command?

Ans. Drop command is used to delete tables. *For example*, Drop Table Orders. Delete commands are used to delete rows of a table.

55. What do you understand by NOT NULL constraint?

Ans. This constraint ensures that the null values are not permitted on a specified column. This constraint can be defined at the column level and not at the table level.

56. What is the significance of COUNT?

Ans. It is used to count the number of values in a given column or number of rows in a table. *For example*, Select count (Roll No.) from students.

57. How can we delete a table in MYSQL?

Ans. We can delete a table in MYSQL using the drop command.

58. How can we delete a record in MYSQL?

Ans. We can delete a record in MYSQL using the delete command.

59. How can we add a record and add a column in a table?

Ans. We can add a record by using insert command and we can add a column through the alter table command.

60. Give any two differences between GET and POST submission methods of HTML form.

Ans.

GET Method	**POST Method**
All form data is encoded into the URL appended to the action URL as query string parameters.	Form data appears within the message body of the HTTP request.
Parameters remain in browser history, hence cannot be used to send password-like sensitive information.	Parameters are not saved in browser history, hence can be used to send sensitive information.
Can be bookmarked.	Cannot be bookmarked.
Easier to hack for script kiddies.	More difficult to hack.
Can be cached.	Cannot be cached.

61. Give the necessary command to incorporate SQL interface within Python.

Ans. import MySQLdb

62. What is Django?

Ans. Django is a high-level Python web framework that encourages rapid development and clean, pragmatic design. Developed by a fast-moving online news operation, Django was designed to handle two challenges: the intensive deadlines of a newsroom and the stringent requirements of the experienced web developers who wrote it. It lets you build high-performing, elegant web applications quickly.