# BOSTON PUBLIC SCHOOL, AGRA

## CLASS XII COMPUTER SCIENCE NEW (083)

## WORKSHEET 2024-25

**CHAPTER -1 PYTHON REVSION TOUR -I**

Q.1 State some features of Python.

Q.2 What is a python variable? Identify the variables that are invalid and state the reason

Class, do, while, 4d, a+

Q.3 What is None?

**Q.4** How strings are represented in Python?

Q.5 What are the various mutable and immutable data types in Python?

Q.6 What is the use of indentation in Python. Explain.

Q.7 Predict the output

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

Q.8 Rewrite the code after correcting errors: -

```
if N=>0
    print(odd)
else
    Print("even")
```

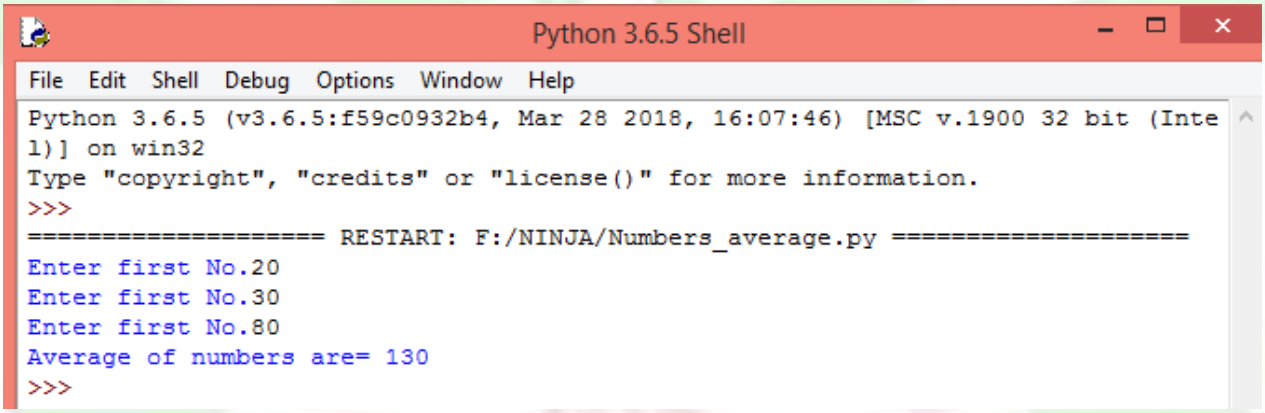
Q.9 What problem occurs with the following code

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

**Q.10** Write a program to find average of three numbers

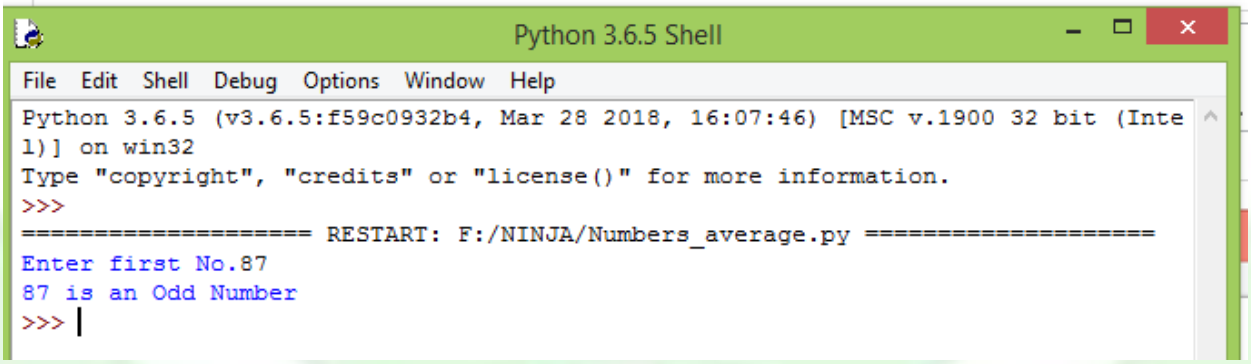
of following putput.

**Output: -**



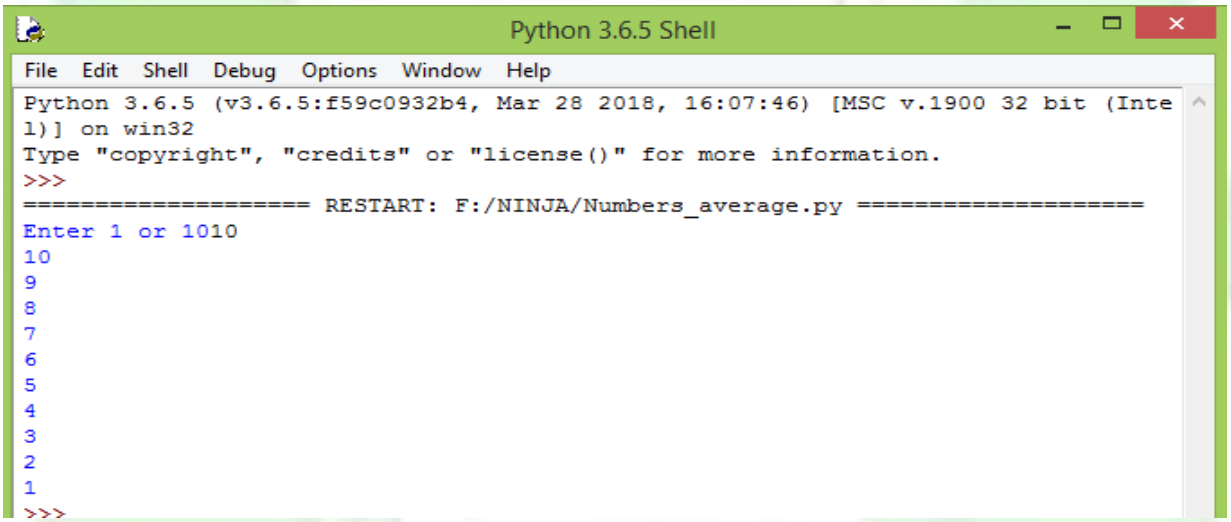

Q.11 Write a program to check if a number is odd or even.

**Output: -**




**Q.12** Write a program to print numbers from 1 to 10 and 10 to 1

**Output: -**

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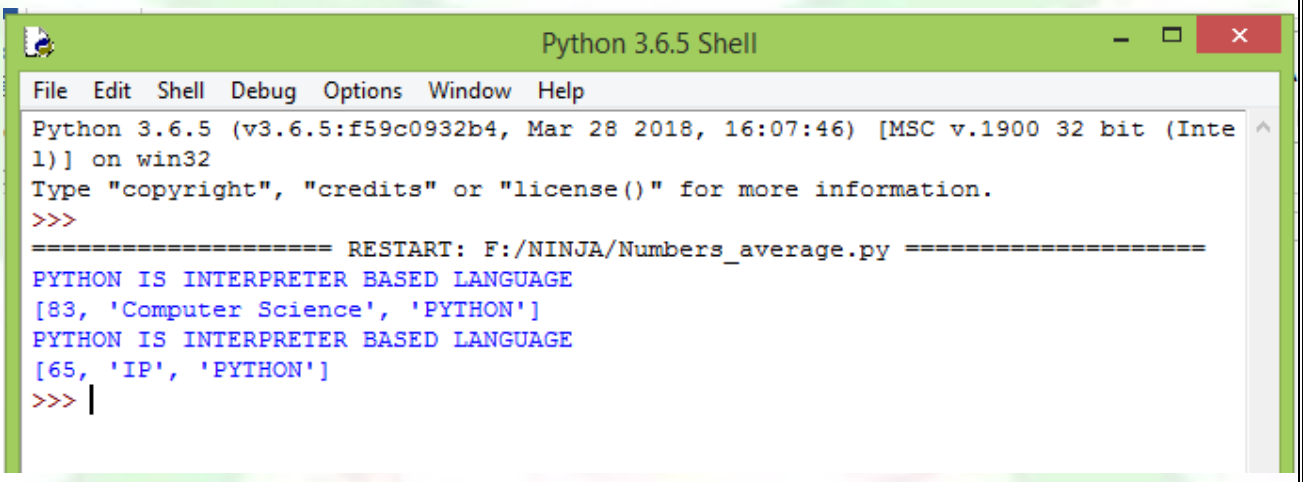
**CHAPTER -2 PYTHON REVSION TOUR -II**

1. What is a string slice? How is it useful?

2. How are list different from strings when both are sequences?




3. What will be the output of the following code snippet?

```
values =[ ]
for i in range (1,4):
```

```
values.apend(i)
print(values)
```

4. Find the error in following code. State the reason of the error.

```
aLst = { ‘a’:1 ,’ b’:2, ‘c’:3 }
print (aLst[‘a’,’b’])
```

5. How are dictionaries different from list?

Ans: **List are ordered collection and Dictionary are unordered collection of elements.**

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**Chapter – 3 Working with Functions**

Q.1) Define a function?

**Q.2)** Write a python function that takes two numbers and find their product.

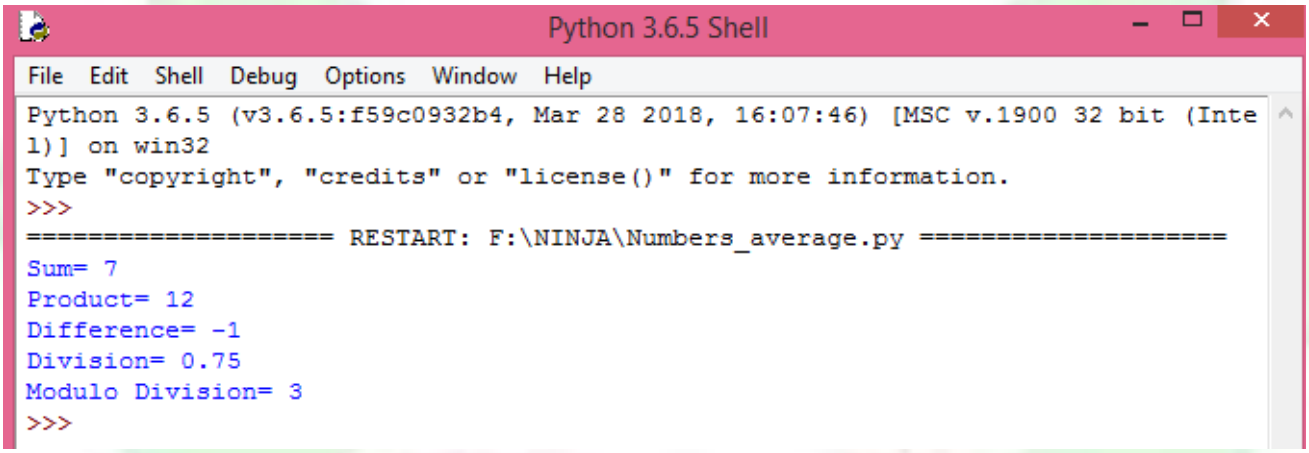
Q.3) Write a python function that takes two numbers and print the smaller number. Also write how to call this function.

Q.4) How many values a python function can return? Explain how?

Q.5) Rewrite the correct code after removing the errors: -

```
def SI(p, t=2, r):
    return (p*r*t)/100
```

Q.6) Write a small python function that receive two numbers and return their sum, product, difference and multiplication and modulo division.




Q.7) What is scope of a variable?

Q.8) Explain two types of variable scope with example.

Q.9) Consider the following function headers. Identify the correct statement: -

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

c) def correct(a=1,b=2,c=3):  4) def correct(a=1,b,c):

Q.10) Find the output of the following code: -

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

* * *

**Chapter-4 Python Library**

Q.1) What is Libraries in Python and How many types of main library use in Python?

Q.2) How we can import library in Python program?

Q.3) Give the basic structure of user defined function.

Q.4) Create a function in Python to calculate and return Area of rectangle when user enters length and breadth

Q.5) What is module in Python?

Q.6) Write the features of a module.

Q.7) Create a package Arithmetic Operations(named AO) contain sum, product and difference of two numbers and use it in your main programmed.

AO.py - F:\NINJA\AO.py (3.6.5)

File Edit Format Run Options Window Help

```
def ADD(X,Y):
    return(X+Y)
def DIFFERENCE(X,Y):
    return (X-Y)
def PRODUCT(X,Y):
    return(X*Y)
```

Now we are creating our main python file: -

**import AO**

**n1=int(input('Enter a Number'))**

**n2=int(input('Enter another Number'))**

**print('Sum = ', AO.ADD(n1,n2))**

**print('Difference=',AO.DIFFERENCE(n1,n2))**

**print('Product=',AO.PRODUCT(n1,n2))**

Numbers_average.py - F:\NINJA\Numbers_average.py (3.6.5)

File Edit Format Run Options Window Help

```
import AO
n1=int(input('Enter one Number='))
n2=int(input('Enter another Number='))
print('SUM=',AO.ADD(n1,n2))
```

**Output: -**

Python 3.6.5 Shell

File Edit Shell Debug Options Window Help

```
Python 3.6.5 (v3.6.5:f59c0932b4, Mar 28 2018, 16:07:46) [MSC v.1900 32 bit (Inte
l)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: F:\NINJA\Numbers_average.py ==========
Enter one Number=23
Enter another Number=44
SUM= 67
```

* * *

## Chapter-5 File Handling

**Q.1 What is a data file in python?**

**Q.2 Differentiate between a text file and a binary file.**

**Q.3 What is the significance of a file object or a file handle?**

**Q.4 What is the use of flush( )?**

**Q.5 Name the methods used for reading and writing data from text file.**

**Q.6 What are the various file opening modes?**

**Q.7 What is the significance of close( )?**

**Q8. Write a python code to write some text to a file Lines.txt.**

**Q.9 Write a python code to find the size of the file in bytes, number of lines and number of words.**

```
# reading data from a file and find size, lines, words
f=open('Lines.txt','r')
str=f.read( )
size=len(str)
print('size of file n bytes',size)
f.seek(0)
L=f.readlines( )
word=L.split( )
print('Number of lines ',len(L))
print('Number of words ',len(word))
f.close( )
```

**Q.10. What does stdin, stdout represent?**

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**CHAPTER -6 functions**

Q.1 What is recursion in Python?

Q.2 What are the advantage and disadvantage of recursion?

Ans: Advantages of Recursion:

1) Recursive functions make the code look clean and elegant.
2) A complex task can be broken down into simpler sub-problems using recursion.
3) Sequence generation is easier with recursion than using some nested iteration.

Disadvantages of Recursion:

1. Sometimes the logic behind recursion is hard to follow through.
2. Recursive calls are expensive (inefficient) as they take up a lot of memory and time.
3. Recursive functions are hard to debug.

Q.3) Write recursive code to compute the factorial of an integer.

Ans:

```
def calc_factorial(x):

  if x == 1:
     return 1
  else:
     return (x * calc_factorial(x-1))

num = 4
print("The factorial of", num, "is", calc_factorial(num))
```

Q.4) Write program to find the H.C.F of two input number

Ans:

```
def computeHCF(x, y):
if x > y:
     smaller = y
   else:
     smaller = x
```

```
    for i in range(1, smaller+1):
        if((x % i == 0) and (y % i == 0)):
            hcf = i

    return hcf

num1 = 54
num2 = 24
print("The H.C.F. of", num1,"and", num2,"is", computeHCF(num1, num2))
```

Q.5) Write Python program to find the sum of natural numbers up to n using function.Ans:

```
def recur_sum(n):
  if n <= 1:
    return n
  else:
    return n + recur_sum(n-1)
num = 16
if num < 0:
  print("Enter a positive number")
else:
  print("The sum is",recur_sum(num))
```

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## CHAPTER -9 Data Structures : Linear Lists

**Q.1 What do you mean by Data Structure?**

Ans: Data Structure means organization of data. A data structure has well defined operations or behavior.

**Q2. How is Data Structure different from Data Type?**

Data Structure provides information regarding organization of data where as Data Type provides information regarding the domain of values and operations that can be perform on data

**Q3. Define - Stack, Queue, Tree.**

Stack – A stack is a linear list also known as LIFO list with the special property that items can be added or removed from only one end called the top.

Queue – A queue is a linear list also known as FIFO list with the special property that items can be added added at one end and removed from the other.

Tree – A non-linear hierarchical organization of data as nodes and links between them where the topmost node called *root* and bottom most nodes called *leaves*.

**Q4. Name some linear and non-linear data structures**

Linear Data Structures – Lists, Arrays, Stack, Queue

Non Linear Data Structures – Trees, Graphs

**Q5. Name some operations commonly performed on data structures?**

Ans: Traversal, Insertion, Deletion, Searching, Sorting, Merging etc.

**Q6. What is a list?**

Ans: A list is a mutable sequence of data elements indexed by their position. A list is represented using [ ] . e.g L=[10,20,30]

**Q7. What is traversing? Write python code to traverse a list.**

Ans: Traversing means accessing or visiting or processing each element of any data structure.

```
#List traversal
L=[10,20,30,40,50]
for x in L :
        print(x)
```

**Q8. Name the methods used for inserting and deleting elements from a list.**

Various methods for inserting elements in a list are - insert(), append(), extend() and methods used for deleting items from a list are – pop() , remove(), clear()

**Q9. Predict the output with respect to the list L=[40,20,30,10,50]**

(a) print(L)
(b) print(len(L)
(c) L.pop() ; print(L)
(d L.append(70); print(L)
(e) L.sort(); print(L)

**Q10. What is List Comprehension? Explain with an example.**

Ans: A concise description of a list, shorthand for list creation.
E.g. L=[x for x in range(1,10,2)]

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## CHAPTER -10 DATA STRUCTURE – II : STACK AND QUEUE

1. What is data structure and why do we need it?

Ans: Data structure is a particular way of storing and organizing information in a computer so that it can be retrieved and used most productively. Different kinds of data structures are meant for different kinds of applications, and some are highly specialized to specific tasks.

2. what is a stack ? what basic operation can be performed on them?

Ans: A **stack** is a collection of objects that supports fast last-in, first-out (LIFO) semantics for inserts and deletes.

Basic operation are:

a) Push – insertion of element
b) Pop – deletion of an element
c) Peek- viewing topmost element without removing
d) Display- view all the element

3. What is queue explain with example?

Ans:

A Queue is a linear structure which follows a particular order in which the operations are performed. The order is First In First Out (FIFO). A good example of a queue is any queue of consumers for a resource where the consumer that came first is served first. The difference between stacks and queues is in removing.

4. What are Application of Stack?

Ans:

1. Expression Evolution
2. Expression conversion
    1. Infix to Postfix
    2. Infix to Prefix
    3. Postfix to Infix
    4. Prefix to Infix
3. Parsing
4. Simulation of recursion

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**Chapter – 11 Computer Networks – I**

Q.1) Differentiate between Client and Server

**Ans: - Client – It is a host computer that requests for some services from a server.**

**Server – It is a computer that responds to the request of the client.**

Q.2) How many types of Networks are there?

**Ans: - PAN – Personal Area Network**

**LAN – Local Area Network**

**MAN – Metropolitan Area Network**

**WAN – Wide Area Network**

Q.3) Differentiate between LAN and WAN?

**Ans: - LAN: -**

**1) Spread over a small area. 2) Less setup cost 3) It is usually a single network**

**WAN: -**

**2) Spread over a very large area. 2) High setup cost 3) It is usually a network of many networks.**

Q.4) What is P2P network?

**Ans: - They are home networks used in a small companies since they are inexpensive and easy to install, but they are limited in scope and are difficult to secure.**

Q.5) What are the three wired types of network?

**Ans: - 1) Twisted pair cable 2) Coaxial Cable 3) Fibre Optic**

Q.6) Name any 3 wireless computer networks.

**Ans: - 1) Microwave 2) Radio wave 3) Satellite**

Q.7) Explain the use of the following terms: NIC, MAC address, WiFi Card, Hub, switch, bridge, router, gateway, access point

**Ans: - NIC – Network interface card attached to each of the workstation and the server, and helps the workstation to establish the all-important connection with the network.**

**MAC Address – The NIC manufacturer assigns a unique physical address to each NIC card, which is known as MAC address. It's a 6 bytre address separated by colon**

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

**WiFi card – It is either an internal or external Local are network adapter with a built-in wireless radio and antenna.**

**Hub – It is a networking device having multiple ports that are used for connecting multiple computers.**

**Switch – It is a device that segment a big network into small subnets so that it prevent traffic overload in a network.**

**Bridge – It is a device that helps to link two networks together. Bridge can handle with same protocols.**

**Router – A router is a network device that forward data from one network to another. It can handle different protocols.**

**Gateway – It is a network device that connects dissimilar networks. It establishes an intelligent connection between a local network and external network with completely different structure.**

**Access Point – It is also called wireless access point(WAP) which is a hardware device that establishes connection of computing devices on Wireless LAN with a fixed wire network.**

Q.8) What do you know about cloud? How many types of clouds are there?

**Ans: - Cloud is a generic term used for internet. Cloud refers to the collection of servers**.

Types of clouds: -

1) **Private cloud** 2) **Public Cloud** 3) **Community Cloud** 4) **Hybrid Cloud**

Q.9) What is IoT?

**Ans: - IoT( Internet of Things) is a phenomenon that connects the things to the internet over wired or wireless connections. Ie it connects a variety of devices to the Internet.**

Q.10) What are the different enabling technologies for IoT?

**Ans: - 1) RFID – Radio Frequency Identification – This technology uses radio waves to read and capture information stored on a tag, called RFID tag. RFID tag is a microchip attached to an antenna. It identifies the tracks the data of the "things".**

2) **Sensors – A device that can detect changes in an environment. It helps to collect data about the status of the "Things".**
3) **Smart Technologies – Smart technologies include additional functionalities to take action and have other processing capabilities as per the requirements.**
4) **Software – It is also important in the success of a technology as it provide the reusable solutions for connecting taking actions and solving issue that occurs.**

5) **Efficient Network connectivity – IoT is formed through interconnection of device to Internet.**

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**Chapter -12 Networking –II**

Q.1 What is Network?

Ans: It is a group of interconnected computers which allow sharing of resources.

Q.2 Explain terms

a. Amplitude

Ans. Amplitude modulation (AM) is a modulation technique used in electronic communication, most commonly for transmitting information via a radio carrier wave.

b. Collision

Ans. In a half duplex Ethernet network, a collision is the result of two devices on the same Ethernet network attempting to transmit data at exactly the same time. Thenetwork detects the "collision" of the two transmitted packets and discards them both.

c. CSMA-

Ans. Code Division Multiple Access

d. Error Detection

Ans. In networking, error detection refers to the techniques used to detect noise or other impairments introduced into data while it is transmitted from source to destination. Error detection ensures reliable delivery of data across vulnerable networks.

e. Checksum

Ans. A checksum is a value that represents the number of bits in a transmission message and is used by IT professionals to detect high-level errors within data transmissions. Prior to transmission, every piece of data or file can be assigned a checksum value after running a cryptographic hash function.

Q. 3 Define the use of following with expands

a. Router –

Ans. A router is a networking device that forwards data packets between computer networks. Routers perform the traffic directing functions on the Internet. Data sent through the internet, such as a web page or email, is in the form of data packets

b. TCT/IP-

Ans. Transmission control protocol/Internet protocol, TCP/IP is a set of rules (protocols) governing communications among all computers on the Internet. More specifically, TCP/IP

dictates how information should be packaged (turned into bundles of information called packets), sent, and received, as well as how to get to its destination.

c. URL

Ans. A Uniform Resource Locator, colloquially termed a web address, is a reference to a web resource that specifies its location on a computer network and a mechanism for retrieving it. A URL is a specific type of Uniform Resource Identifier, although many people use the two terms interchangeably.

d. DNS

Ans. He Domain Name System (DNS) is the phonebook of the Internet. Humans access information online through domain names, like nytimes.com or espn.com. Web browsers interact through Internet Protocol (IP) addresses. DNS translates domain names to IP addresses so browsers can load Internet resources.

Q.4 Why we use Ipv4 and Ipv6? Also specify the difference between them.

Ans. The Internet Protocol version 4 (Ipv4) is a protocol for use on packet-switched Link Layer networks (e.g. Ethernet). Ipv4provides an addressing capability of approximately 4.3 billion addresses. The Internet Protocol version 6 (Ipv6) is more advanced and has better features compared to Ipv4.

Q.5 Write the name  Networks commands and why they use for any two?

Ans. **Ipconfig-** Ipconfig is a Console Command which can be issued to the Command Line Interpreter (or command prompt) to display the network settings currently assigned to any or all network adapters in the machine. This command can be utilised to verify a network connection as well as to verify your network settings.

ping **-** Helps in determining TCP/IP Networks IP address as well as determine issues with the network and assists in resolving them.

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## CHAPTER -13 SQL

**Q.1 State two advantages of using Databases.**

Ans: Databases help in reducing Data Duplication i.e. Data Redundancy and controls Data Inconsistency.

**Q2. Name some popular relational database management systems.**

Ans: Oracle, MYSQL, Sqlite, MS-Access etc

**Q.3 Define – Relation, Tuple, Degree, Cardinality**

Ans: A **Relation** is logically related data organized in the form of tables.

**Tuple** indicates a row in a relation.

**Degree** indicates the number of Columns.

**Cardinality** indicates the number of Columns.

**Q4. What is Data Dictionary?**

Ans: Data Dictionary contains data about data or metadata. It represents structure or schema of a database?

**Q5. Name some data types in MySQL**

Ans: Char, Varchar, Int, Decimal, Date, Time etc.

**Q6. Differentiate between Char and Varchar.**

Ans: Char means fixed length character data and Varchar means variable length character data. E.g. For the data "Computer" Char(30) reserves constant space for 30 characters whereas Varchar(30) reserves space for only 8 characters.

**Q.7 What is a Primary Key?**

Ans: A Primary Key is a set of one or more attributes (columns) of a relation used to uniquely identify the records in it.

**Q.8 What is a Foreign Key? What is its use?**

Ans: A Foreign key is a non-key attribute of one relation whose values are derived from the primary key of some other relation. It is used to join two / more relations and extract data from them.

**Q.9** Write SQL statements to do the following

(a) Create a table Result with two columns Roll and Name with Roll as primary key

```
CREATE TABLE Result
(Roll INT PRIMARY KEY, Name Varchar(30))
```

(b) Add a column Marks to Result table

```
ALTER TABLE Result
ADD (Marks DECIMAL(10,2))
```

€Insert a record with values 1, “Raj”, 75.5

```
INSERT INTO Result
VALUES(1,”Raj”,75.5)
```

(d)Show the structure of Result table

```
DESCRIBE Result
```

€Display the records in ascending order of name

```
SELECT * FROM Result
ORDER BY Name
```

(f) Display records having marks>70

```
SELECT * FROM Result
WHERE Marks > 70
```

(g) Update marks of ,”Raj” to 80

```
UPDATE Result
SET Marks = 80
WHERE Name=”Raj”
```

**Q10. What are the various Integrity Constraints?**

Ans: Various Integrity Constraints are –

NOT NULL – Ensures value for the column is not left unassigned

UNIQUE – ensures that all values in a column are distinct or no two rows can have the same values for a column having UNIQUE constraint

CHECK – Ensures that values for a particular column satisfy the specified condition

DEFAULT – Ensures that the default value is assumed if value for the column is not specified

PRIMARY KEY – Automatically applies UNIQUE and NOT NULL for uniquely identifying rows / records in a table

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**CHAPTER -14 MORE ON SQL**

1. What is ORDER BY CLAUSE in SQL?

**Ans: The ORDER BY statement in sql is used to sort the fetched data in either ascending or descending according to one or more columns.**

**By default ORDER BY sorts the data in ascending order. We can use the keyword DESC to sort the data in descending order and the keyword ASC to sort in ascending order.**
**Syntax of all ways of using ORDER BY is shown below:**

```
SELECT * FROM table_name ORDER BY column_name ASC|DESC
```

2. what is Aggregate function in MYSQL?

**Ans: Aggregate Functions are all about Performing calculations on multiple rows Of a single column of a table And returning a single value.**

**The ISO standard defines five (5) aggregate functions namely;**

**1) COUNT**
**2) SUM**
**3) AVG**
**4) MIN**
**5) MAX**

3. What is group by clause in MYSQL?

**Ans: The GROUP BY clause groups a set of rows into a set of summary rows by values of columns or expressions. The GROUP BY clause returns one row for each group. In other words, it reduces the number of rows in the result set.**
**The GROUP BY clause is an optional clause of the SELECT statement. The following illustrates the GROUP BY clause syntax:**

```
SELECT
   c1, c2,..., cn, aggregate_function(ci)
FROM
   table
WHERE
   where_conditions
GROUP BY c1 , c2,...,cn;
```

4. Consider the following tables DRESS and MATERIAL. Write SQL commands for the statements (i) to (iv) and give outputs for SQL queries (v) to (viii).

Table : DRESS

| DCODE | DESCRIPTION | PRICE | MCODE | LAUNCHDATE |
|---|---|---|---|---|
| 10001 | FORMAL SHIRT | 1250 | M001 | 12–JAN–08 |
| 10020 | FROCK | 750 | M004 | 09–SEP–07 |
| 10012 | INFORMAL SHIRT | 1450 | M002 | 06–JUN–08 |
| 10019 | EVENING GOWN | 850 | M003 | 06–JUN–08 |
| 10090 | TULIP SKIRT | 850 | M002 | 31–MAR–07 |
| 10023 | PENCIL SKIRT | 1250 | M003 | 19–DEC–08 |
| 10089 | SLACKS | 850 | M003 | 20–OCT–08 |
| 10007 | FORMAL PANT | 1450 | M001 | 09–MAR–08 |
| 10009 | INFORMAL PANT | 1400 | M002 | 20–OCT–08 |
| 10024 | BABY TOP | 650 | M003 | 07–APR–08 |

Table : MATERIAL

| MCODE | TYPE |
|---|---|
| M001 | TERELENE |
| M002 | COTTON |
| M004 | POLYESTER |
| M003 | SILK |

(i) To display DCODE and DESCRIPTION of an each dress in ascending order of DCODE.

(ii) To display the details of all the dresses which have LAUNCHDATE in between 05–DEC–07 and 20–JUN–08 (inclusive of both the dates).

(iii) To display the average PRICE of all the dresses which are made up of material with MCODE as M003.

(vi) To display material wise highest and lowest price of dresses from DRESS table.
(Display MCODE of each dress along with highest and lowest price)

(v) SELECT SUM (PRICE) FROM DRESS WHERE MCODE='M001';

(vi) SELECT DESCRIPTION, TYPE FROM DRESS, MATERIAL WHERE DRESS. DCODE=MATERIAL. MCODE AND DRESS. PRICE>=1250;

(vii) SELECT MAX(MCODE) FROM MATERIAL;

(viii) SELECT COUNT(DISTINCT PRICE) FROM DRESS

Ans: -

(i) SELECTGCODE, DESCRIPTION FROM GARMENT ORDER BY GCODE DESC;
(ii) SELECT * FROM GARMENT WHERE READYMADE BETWEEN (08–DEC–07, 16–JUN–08);
(iii) SELECT AVG(PRINCE) FROM GARMENTG, FABRIC F WHERE G. FCODE= F.CODE AND F. FCODE = FO3;
(iv) SELECT F. FCODE, GPRICE FROM GARMENT G, FABRIC F
GROUP BY F. FCODE ORDER BY G. PRICE DESC;
(v) 1600

(vi)

| DESCRIPTION | TYPE |
|---|---|
| INFORMAL SHIRT | COTTON |
| INFORMAL PANT | COTTON |
| FORMAL PANT | POLYSTER |

(vii) MAX () selects Numeric value not alphanumeric value. So, its error.
(viii) 7

5.What is the difference between WHERE and HAVING clauses?

Ans: The WHERE clause is used to filer rows from a results.

SELECT COUNT(SalesOrderID) FROM Sales.SalesOrderDetail

This quesry will return 121,317 as the count, whereas, the query

SELECT COUNT(SalesOrderID) FROM Sales.SalesOrderDetail WHERE UnitPrice > 200

Returns 48,159 as the count. This is because the WHERE clause filters out the 73,158 SalesOrderDetails whose UnitPrice is less than or equal to 200 from the results.

HAVING Clause

The HAVING clause is used to filter values in a GROUP BY. You can use them to filter out groups such as

SELECT SalesOrderID, SUM(UnitPrice * OrderQty) AS TotalPrice

FROM Sales.SalesOrderDetail

GROUP BY SalesOrderID

HAVING SalesOrderID > 50000

* * *

## Chapter – 15 Creating a Django based Basic Web Application

Q.1) What is Django?

Ans: - Django is a web framework used with Python to develop Dynamic Websites. Here web framework is actually a software tool that helps to build and run Dynamic websites and web – enabled applications.

Q.2) How a web works?

Ans: - A Web works in the form of Client -Server architecture. Web browser acts as a client programme and the web server interacts as the server.

Q.3) Which protocol widely used by the clients of web ie web browsers?

Ans: - Mostly web browsers work with Hyper Text Transfer Protocols (HTTP)

Q.4) Explain the working of HTTP GET and HTTP POST request?

Ans: - HTTP GET : - Whenever a web client has to display a webpage it calls the HTTP GET request and send the URL of the webpage. The server receives the GET request and respond by sending HTML of the URL, if available; but if the URL is not existing it sends error 404.

HTTP POST : - An HTTP POST request is a way to send data to the server using HTML forms over web.

Q.5) Write the characteristics of Django?

Ans: - 1) Django is Python based free and Open Source web application framework.

2) Django is powerful server-side web framework used by many developers as it is versatile, Portable and Secure.

Q.6) What do you know about Virtualenv?

Ans: - Virtualenv is a useful tool which creates isolated Python Environment that take care of interdependencies and let us develop different applications in isolation.

Each isolated environment has different set of libraries unlike a common global set of libraries.

Q.7) Differentiate between a project and an app?

Ans: - A project refers to an entire application. There can be multiple apps in a project.

Whereas, an app is a submodule which take cares of one part of the project.

Q.8) Write the use of the following files: -

admin.py, apps.py, models.py, tests.py, views.py, migrations/

Ans: - 1) admin.py – It is a configuration file for the build in Django Admin app

2) apps.py - It is a configuration file for the app itself

3) models.py - It is the file where we will define the database models.

4) tests.py – This file is for our app-specific tests

5) views.py – This file is for resolving http request/response for our web app

6) migrations/ - This folder keeps track of changes in models.py file and updates database accordingly.

Q.9) Explain MVC Project Architecture.

Ans: - MVC ie Model, View Controller Architecture.

Here Model is the lowest level of pattern responsible for maintain data.

View is responsible for displaying all or a portion of data to the user.

Controller is the software code that controls the interaction between the Model and View.

Q.10) Explain MVT Project Architecture of Django.

Ans: - MVT is Model, View Template architecture which is slightly different from MVC. In fact the main difference between the two patterns is that Django itself takes care of the controller part (Software code) and leaving us with the template. The template is a HTML file mixed with Django Template Language (DTL).

The develop provides the model, the view and the template then just maps it to a URL and Django does the magic to serve it to the user.

* * *

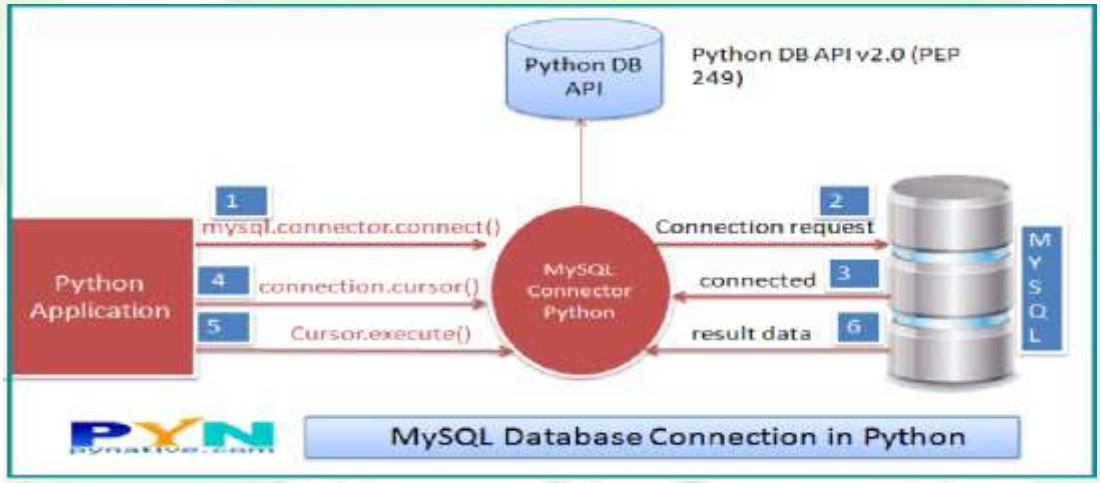
## Chapter -16 Data Base Connectivity

Q.1 What is database.

Ans. The database is a collection of organized information that can easily be used, managed, update, and they are classified according to their organizational approach.

Q.2 write the steps of connectivity between SQL and Python

Ans.




Q.3 What is result set? Explain with example.

Ans. Fetching rows or columns from result sets in Python. The fetch functions in the ibm_db API can iterate through the result set. If your result set includes columns that contain large data (such as BLOB or CLOB data), you can retrieve the data on a column-by-column basis to avoid large memory usage.

Q.4 Use of functions in connectivity - INSERT,READ, UPDATE, DELETE, ROLLBACK

| Environment Variables | Description |
|---|---|
| INSERT | It is an SQL statement used to create a record into a table. |
| READ | Fetches useful information from the database. |
| UPDATE | It is used update those available or already existing record(s). |
| DELETE | It is used to delete records from the database. |

Ans.

| | |
|---|---|
| ROLLBACK | It works like "undo", which reverts all the changes that you have made. |

Q.5 Write code for database connectivity

Ans. # importing the module

```
import MySQLdb
# opening a database connection
        db = MySQLdb.connect ("localhost","testprog","stud","PYDB")
# define a cursor object
        cursor = conn.cursor
# drop table if exists
        Cursor.execute("IF STUDENT TABLE EXISTS DROP IT")
# query
        sql = "CREATE TABLE STUDENT (NAME CHAR(30) NOT NULL, CLASS CHAR(5), AGE
        INT, GENDER CHAR(8), MARKS INT"
# execute query
        cursor.execute(sql)
# close object
        cursor.close()
# close connection
        conn.close()
```

* * *