Day 1

Data:

-It is nothing but collection of Information

ex- student data,faculty ,classroom ,timetable etc

(student\_id,student\_name,age)

Sources of data

1)social media

2)banks

3)stock market

4)telecom company

5)insurance

The places where you can store the data

-Hard disk

-Google drive

-one drive

-paper

-Excel

-Databases

Type of data:

1)Structured data : Any data that stored in rows and columns format.

ex- student information table, employ info table

2)unstructured data : Any data with format other than rows and columns

ex--> images,videos,emails,output returned by google serach, whatsup messages.

3)semistructured data:

can contain both the forms of data (structured & unstructured)

ex--> XML files.

#Why we required database:

Because harddisk capacity is generally 1 TB. so harddisk is not enough to store large

amount of data.

#Excel spreadsheet limitations over database

1)scalability: Excel is not designed for handling large data. databases are more

scalable and efficient in handling large data

2)Performance : As the amount of data in an excel file increases, performance degrade.

3)Security: excel lacks security features compared to databases.

Databases provides user authentification,access controls,enhancing overall data security.

4)backup: Databases have more backup and recovery mechanisms compared to Excel.

5)Concurrent access: excel files cant handle simultaneous edits by multiple users

effectively.

Database:

-It is a centralized storage of data to perform data related

activities in any organisation

ex-

Oracle,Mysql,Postgresql,Microsoft sql server

-Database stores data in the form of tables

(i.e row and columns) called as relational database

-Table is a 2 dimensional representation of data.

first dimension is column ,second dimension is row

Types of DBMS (database management system)-->

1)Relational DBMS (RDBMS)

2)Non-Relational DBMS

1)Relational DBMS: In this DBMS, data stored in table format.

id name city

1 jay pune

2 yash nashik

For ex--> Oracle ,Mysql, postgresql

2)Non-Relational DBMS : In this DBMS, data stored in key-value pairs

ex--> {

'RollNo':1,

'Class':'5th',

'name':'jay'

}

For ex-->MangoDB,Cassandra,Hbase etc

#History of Oracle

-In 1979, first version of oracle database software is released. i.e version 7

-In 1997, some more features are added to store complex data such as photoes,videos,

Audios etc . i.e version 8

-In 1999--> version 9

-In 2003 -->version 10g (oracle 10g)

-In 2004 --> Oracle 12c, oracle 18c

-In 2019--> Oracle 19c

SQL (Structured query language)

-It is the language used to communicate with database.

i.e to submit user request on database.

-it is the language for database.