DDL:

create: This query is used to create a new table with in a database.

```
create table tablename
(
    columnname datatype,
    .          .
    .          .
);
```

alter: This query is used to add new column in a table.

alter table tablename add column_name datatype

Drop: This query is used to drop/delete the column or table.

drop table table name;

Rename: This query is used to change the name of the column or table.

Select old-column as new column from table name;

DML:

Insert:. This query is to add new row or record in a table.

insert into table-name values (value1, value2, ...);

Update: This query is used to change or edit specific column or more than one column value. In respect of without any condition or with a specific condition

1) Update tablename set formula
2) Update tablename set " where condition

delete: This query is used to delete a specific row or record within a table or all the record within a table.

1) delete from table name;

2) " " " where condition

Select: This query is used to fetch or retrieve a single record or more than one record in respect of without any condition

1) select column name from table name

2) " " " " " where condition

* ← means all column

Logical operator

- and
- or
- not

and: This operator is use to check more than one condition If all the condition are true or satisfied then the output will displayed or query will be executed.

or: This operator is use to check only a single condition with in many condition. If the condition is satisfied then the output will displayed or query will be executed.

not: This operator will return opposite of the condition. i.e. output will be displayed opposite of the condition will not use individualy. It can be used with the other operator.

Between : It is range operator to check a condition within a given range.

not between: It is a range operator. Which is used to check the condition except given range.

equal(=): It is used to check a condition in respect of a specific match.

not equal (<>): It is used to check a condition in respect to except the specific match.

in : It is alternate process of or operator. Use to check whether a specific condition is true within many condition.

not in : It is alternate process and operator which is used to check whether all the condition match or not.

like: It is a sub string operator. Which is use to check whether a specific letter or more than one letter is present with in a string.

'%' many letter checking

'_' single " "

not like: It is a substring operator. which is use to check except a specific letter.

- What is database ?

To store the data in systematic and sequencial manner is known as database.

Example : student information managment system
Railway time table.
Flight Reservation system
Audit table

- Components of DBMS

Entity , Atribute, file , relationship, medule, macro

- What is DBMS ?

It is a software which is used to add, insert, edit, update as well as delete the record with in the relation (table).

Example: Oracle, Mysql , sql server , MongoDB , DB2, D.Base , Foxpro , Fox Base , MS Access

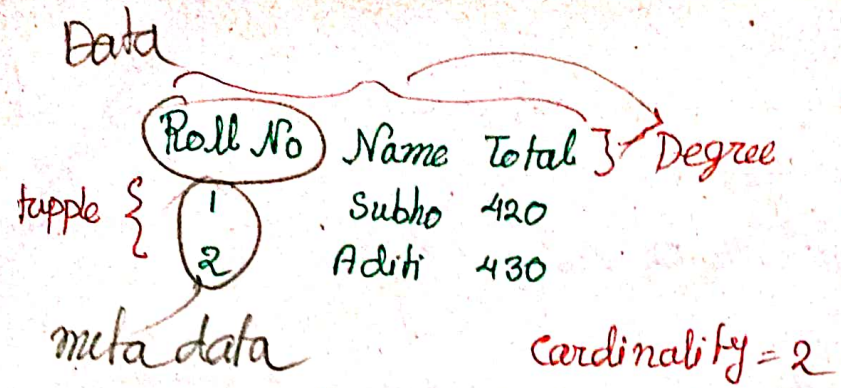
- Tupple

With in a relation each row is known as tupple

Atribute: With in a relation each column is known as Attribute

ea : with in a relation total number of tupple is known as cardinality

with in a relation total number of Attribute known as degree.



Data Dictionary: With in a database organised the Database and structure of the database is defined with in the data dictionary.

data dictionary is present with in a system table.

System table: In built table which are already defined at the time of installation of data base engine is known as System table.

we can't edit or update the system table which are predefined.

meta data characteristics: Data about Data is known as meta data.

It's present with in data dictionary.
It's used to describe itself.
It will store user data.

Domain: Properpy of an atribute is known as domain. That means of the column is known as domain.

Total, Roll No → integer domain
Name → varchar

Database instance: Schema of the database (Structure of table) is within database instance

Database schema: Structure of the data base is known as database schema

```
Create table Student
(
    Roll_No int not null primary key,
    S_Name varchar(20),
    Total int
);
```

Data constraints: To prevent enter duplicate data with a table database constains is used.

- Logical constraints — Intigrity constraints
  - Entity Intigrity constrains
  - Domain " "
  - Referencial " "
  - Foreignkey " "
- Physical constraints :
  - Key constraints
    - Primary key
    - Foreign key
    - Alternate key
    - Super key
    - candidate key

With in a DBMS table the key which is used to uniquely identified the tupple is known as primary key. It's must be unique and not null.

This key constraints is used to prevent duplication with in a table. With in a table only one column can be used as primary key.

Candidate key: All the unique and not null column with primary key is known as ~~primary~~ candidate key.

Candidate key can be more than one column with a table.

Alternate key: Except primary key all the other unique and not null columns know as Alternate key Alternate key must be unique and not null.

Note: Candidate is not present with in a primary key, but primary key is present with in candidate key.

PK

Roll No	Name	Total
1	Aditi	420
2	Aditi	430
3	Sucho	440

CK

PK

Reg. No	Cert. no.
R001	C001
R002	C002
R003	C003

CK

PK = 1
CK = 3

(Roll + Reg No + Cert No)

AK = CK - PK
= 3 - 1
= 2

Subset with in a super set is known as super key It's must be unique and not null that means no duplicate subset is allowed.

{Roll}
{ " , Name }
{ " , " , Total }
{ " , " , " , Regn No }
{ " , " , " , " , cert No }

{Name}
X { " , Roll No }
{ " , Total }.
X { " , " , Roll }

e.t.c...

Foreign key is used to linkup between two or more table. If a specific column is present as primary key with in the first table and that column if present with-in the second table then it's used as foreign key.

Foreign key can be not unique and null. There can be more then one foreign key in a single table.

Note: primary key and foreign key ~~cant~~ may not be same, there data type must be same.

PK

Roll No	FName	Total	Reg No.	Cert No.
1	Aditi	420	R001	C001
2	Uditi	430	R002	C002
3	Sucho	440	R003	C003

LName	Add	Roll No.
Sanel	Saltlake	2
Mallick	Hestopur	1
Misra	Saltlake	

Data integrity or Data consistancy are non-duplication

within a DBMS table, If we set primary key with in a specific column then no duplicate record can be enter with a table.

That means data redundancy can be avoided.

Roll No	Name	Total
1	Uditi	420
2	Aditi	430

As primary key applied ~~from~~ here so data redund. can be avoided.

within a DBMS table if we don't set primary key then duplicate data can be enter with in a table. It's known a data redundancy.

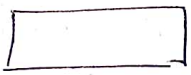
Roll No	Name	Total
1	Uditi	420
2	Aditi	430
2	Subho	440

Strong Entity / Attribute Relationship

Within a DBMS table if we set primary key within a specific column then that column is known as strong attribute.

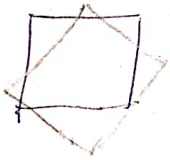
If a single primary key is present with in a table then that table is known as strong entity.

If a primary key ~~present~~ of first table is present as foreign key of second table then that relationship is known as strong relationship.



strong entity

strong Attribute



strong Relationship

E R Diagram

Entity Relationship Dia-

PK

Roll	FName
1	Aditi
2	Vditi

LName	Roll
Jena	2
Mallick	1