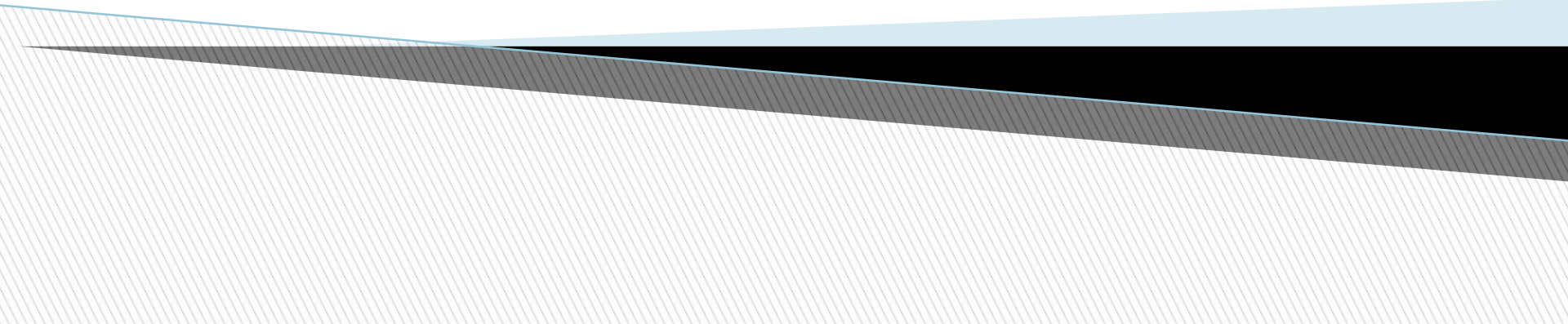
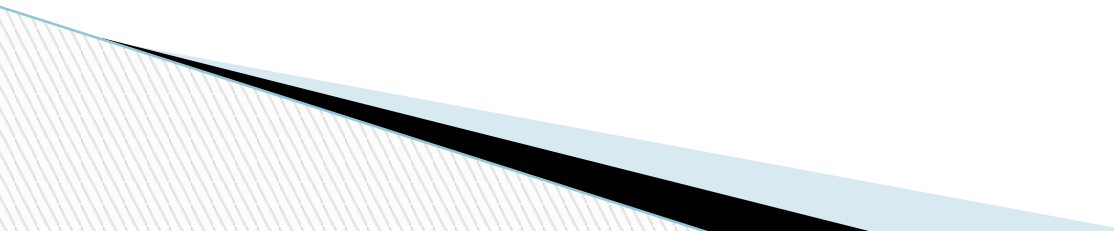


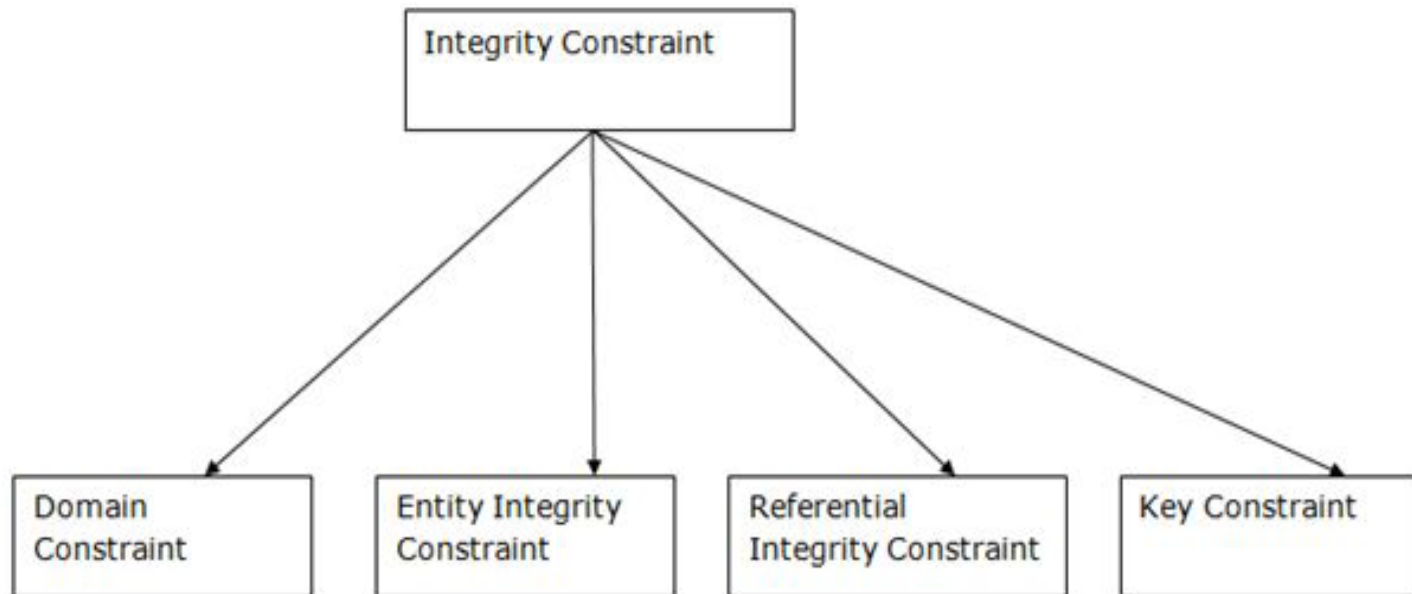
Relational Integrity



Integrity Constraints

- ❑ Integrity constraints are a set of rules. It is used to maintain the quality of information.
 - ❑ Integrity constraints ensure that the data insertion, updating, and other processes have to be performed in such a way that data integrity is not affected.
 - ❑ Thus, integrity constraint is used to guard against accidental damage to the database.
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Types of Integrity Constraint



1. Domain constraints

- Domain constraints can be defined as the definition of a valid set of values for an attribute.
- The data type of domain includes string, character, integer, time, date, currency, etc. The value of the attribute must be available in the corresponding domain.

ID	NAME	SEMENSTER	AGE
1000	Tom	1 st	17
1001	Johnson	2 nd	24
1002	Leonardo	5 th	21
1003	Kate	3 rd	19
1004	Morgan	8 th	A

Not allowed. Because AGE is an integer attribute

2. Entity integrity constraints

The entity integrity constraint states that primary key value can't be null.

This is because the primary key value is used to identify individual rows in relation and if the primary key has a null value, then we can't identify those rows.

A table can contain a null value other than the primary key field.

EMPLOYEE

EMP_ID	EMP_NAME	SALARY
123	Jack	30000
142	Harry	60000
164	John	20000
	Jackson	27000

Not allowed as primary key can't contain a NULL value

3. Referential Integrity Constraints

- A referential integrity constraint is specified between two tables.
- In the Referential integrity constraints, if a foreign key in Table 1 refers to the Primary Key of Table 2, then every value of the Foreign Key in Table 1 must be null or be available in Table 2.

(Table 1)

EMP_NAME	NAME	AGE	D_No
1	Jack	20	11
2	Harry	40	24
3	John	27	18
4	Devil	38	13

Foreign key

Not allowed as D_No 18 is not defined as a Primary key of table 2 and In table 1, D_No is a foreign key defined

Relationships

(Table 2)

Primary Key

<u>D_No</u>	D_Location
11	Mumbai
24	Delhi
13	Noida

4. Key constraints

- Keys are the entity set that is used to identify an entity within its entity set uniquely.
- An entity set can have multiple keys, but out of which one key will be the primary key. A primary key can contain a unique and null value in the relational table.

ID	NAME	SEMENSTER	AGE
1000	Tom	1 st	17
1001	Johnson	2 nd	24
1002	Leonardo	5 th	21
1003	Kate	3 rd	19
1002	Morgan	8 th	22

Not allowed. Because all row must be unique

Enterprise Constraints

- Enterprise constraints – sometimes referred to as semantic constraints – are additional rules specified by users or database administrators and can be based on multiple tables.

Examples.

- A class can have a maximum of 30 students.
 - A teacher can teach a maximum of four classes per semester.
 - An employee cannot take part in more than five projects.
 - The salary of an employee cannot exceed the salary of the employee's manager.
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