Date.
Page No.

RELATIONAL MODEL (RM)

→ Model which organises the data in the form of relations (tables)
→ Each table consists of columns & rows. Each row in a table represents a record and each column represents a field.
→ Relational model is a powerful tool for organizing and managing data because it allows for easy retrieval and manipulation of information.
→ ex:- RM based DBMS → Oracle, IBM, MySQL, MS Access.

Degree → Number of attributes/ columns in a given table/ relations
Cardinality → Total no. of tuples in a RM
Relational Key → Set of attributes which can be uniquely identify each tuple

Properties of a table in RM
→ Name of relation is distinct among all other relation.
→ The values have to be atomic
→ The name of each attribute/ column must be unique.
→ Each tuple must be unique in a

Date.
Page No.

table.
→ The sequence of row and column has no importance.

RELATIONAL MODEL KEYS

① Super key
↳ Any permutation and combination of attributes present in a table which can uniquely identify each tuple.

② Primary key
↳ It is a unique Identifier for each row in a table.
↳ It ensures that every row has a distinct identity and can be uniquely referenced.
↳ A Table can have only one primary key.

③ Foreign key
↳ A foreign key is a column or a set of columns in a table that references the primary key of another table.

Date.
Page No.

↳ It establishes a relationship between the two tables, indicating that the data in one table is related to the data in the other.

④ Candidate key
↳ A candidate key is a set of columns that can uniquely identify each row in a table.
↳ A table can have multiple candidate keys, but only one is designated as the primary key.
↳ Candidate keys provide alternative ways to uniquely identify rows, enhancing data retrieval efficiency.

⑤ Alternate keys.
↳ An alternate key is a unique index on a column or a set of columns that is not the primary key.
↳ It provides an additional way to quickly access data based on specific attributes.

⑥ Composite key

Date.
Page No.

↳ Primary key that is formed using atleast 2 attributes

⑦ Compound key
↳ Primary key which is formed using 2 foreign key.

⑧ Surrogate key
↳ It is synthetic primary key
↳ Generated automatically by DB
↳ May be used as PK.

DOMAIN CONSTRAINTS
↳ Restricts the value in the attribute of relation, specifies the Domain.
↳ By enforcing domain constraints, the database system helps maintain data accuracy and prevent invalid or erroneous data from being entered.

KEY CONSTRAINTS

① NOT NULL
↳ Ensures that the specified column doesn't contain a NULL value.

Date.
Page No.

② UNIQUE
↳ Provides a unique/ distinct values to specified columns.

③ DEFAULT
↳ Provides a default value to a column if none is specified.

④ CHECK
↳ Checks for the predefined conditions before inserting the data inside the table.

⑤ PRIMARY KEY
↳ It uniquely identifies a row in a table.

⑥ FOREIGN KEY
↳ Ensures referential integrity of the relationship.