

Assignment - 2

Q-1. What is Database ?

→ "Database is a collection of data organized in a meaningful way where information is stored in table."

Q-2. What is Row / Tuple / Record ?

→ "A single row of a table, which contains a single record for that relation is called a tuple / Row / Record."

Q-3. What is column / Attribute / field ?

→ "The collection of one type of data in a table is called column / Attribute / field".

Q-4. What is table ?

→ "A table is a collection of related data held in a table format within a database".

Q-5. What is the extension of MS Access of 2003 and 2007 ?

→ The extension of MS Access in 2003 is .MDB and in 2007 is .ACCDDB.

Q-6. What is the extantion of open office Base ?

→ "The extension of open office Base is .odb".

Q-7. Explain openoffice Base datatype.

→ There are six datatype in open office base.

1. VARCHAR
2. CHAR
3. INTEGER
4. DATE / TIME
5. DOUBLE (size,d)
6. FLOAT (size,d)

1. VARCHAR :-

A VARIABLE length string (can contain letters, numbers and special characters). The size parameter specifies the maximum column length in characters - can be from 0 to 65535

2. CHAR :-

A FIXED length string. The size parameter specifies the column length in characters - can be from 0 to 255. Default is 1.

3. INTEGER :-

It is used for calculation the long integer. Store whole number form - 2147483648 to 2147483647. Each field use 8 Bytes.

4. Date / Time :-

It is used to store date and time. Date and time values from the year 100 to 9999. Each field use 8 Byte in memory.

5. Double (size, d) :-

A normal-size floating point number. The total number of digits is specified in size. The number of digits after the decimal point is specified in the d parameter.

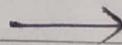
6. Float (size, d) :-

A floating point number. The total number of digits is specified in size. The number of digits after the decimal point is specified in the d parameter.

Q-8. What is Entity?

→ "Entity means real world object. It may person things, concept or theory for which we are shorting data. For example, Employee record, Student, product."

Q-9 What is difference between MS Excel vs MS Access?



MS Excel	MS Access
- Excel is for spreadsheet and financial calculation	- Access is a relational database program.
- Extension of Excel file is .xls	- Extension of access file is .mdb
- It use flat database.	It use flat and relational database.

- The primary use of Excel is to create financial spreadsheets. Excel has some limited capabilities to store data but its primary function is to create financial spreadsheets.
- Excel has limited functionality and cannot make the connections that Access can.
- Excel can only handle up to 15,000 records.
- Excel does not have the ability to create queries, although it can create charts, graphs and pivot tables.
- You would use Access to collect, manipulate and store data.
- If you need to create relationships between your data, Access is the only choice.
- Access is meant to handle thousands of records, all related through multiple tables.
- Access is meant to create calculated queries, making connections based through a "wizard" or through user programming.

Q-10. Explain Types of Entity Set and Attributes.

→ Types of Entity Set :-

1. Strong entity set
2. Weak entity set

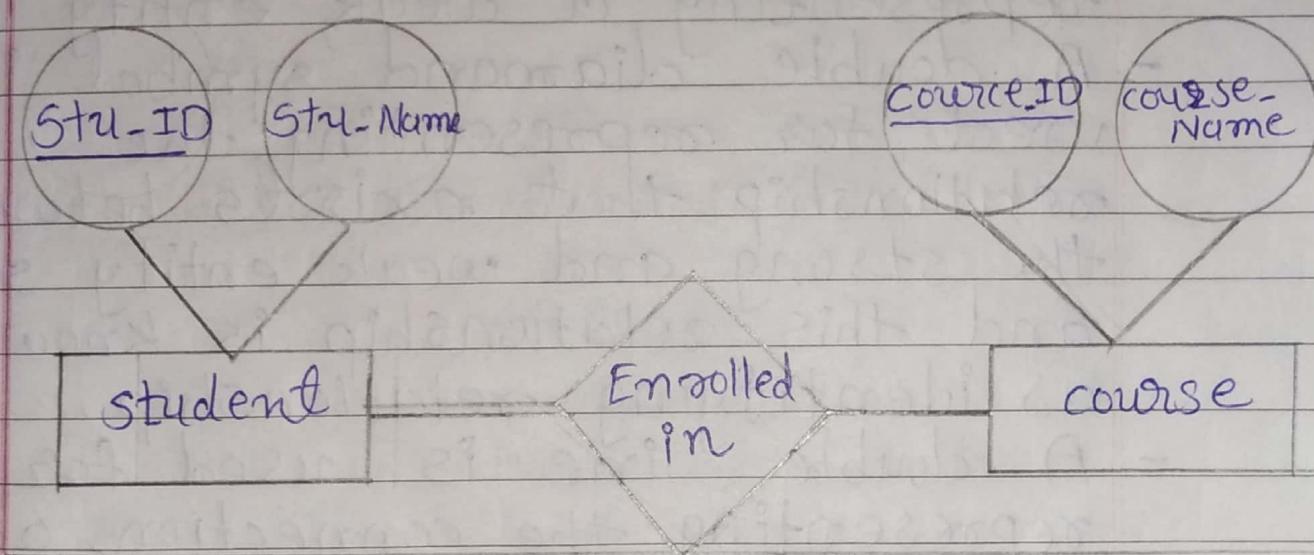
1. Strong entity set :-

- A Strong entity set is an entity set that contains sufficient attributes to uniquely identify all its entities.
- In other word, a primary key exists for a strong entity set.
- Primary key of a strong entity set is represented by underlining it.

- Symbols Used :-

- A single rectangle is used for representing a strong entity set.
- A diamond symbol is used for representing the relationship that exists between two strong entity sets.
- A single line is used for representing the connection of the strong

- entity set with the relationship set.
- A double line is used for representing the total participation of an entity set with relationship set.
- Total participation may or may not exist in the relationship.
- Example :-

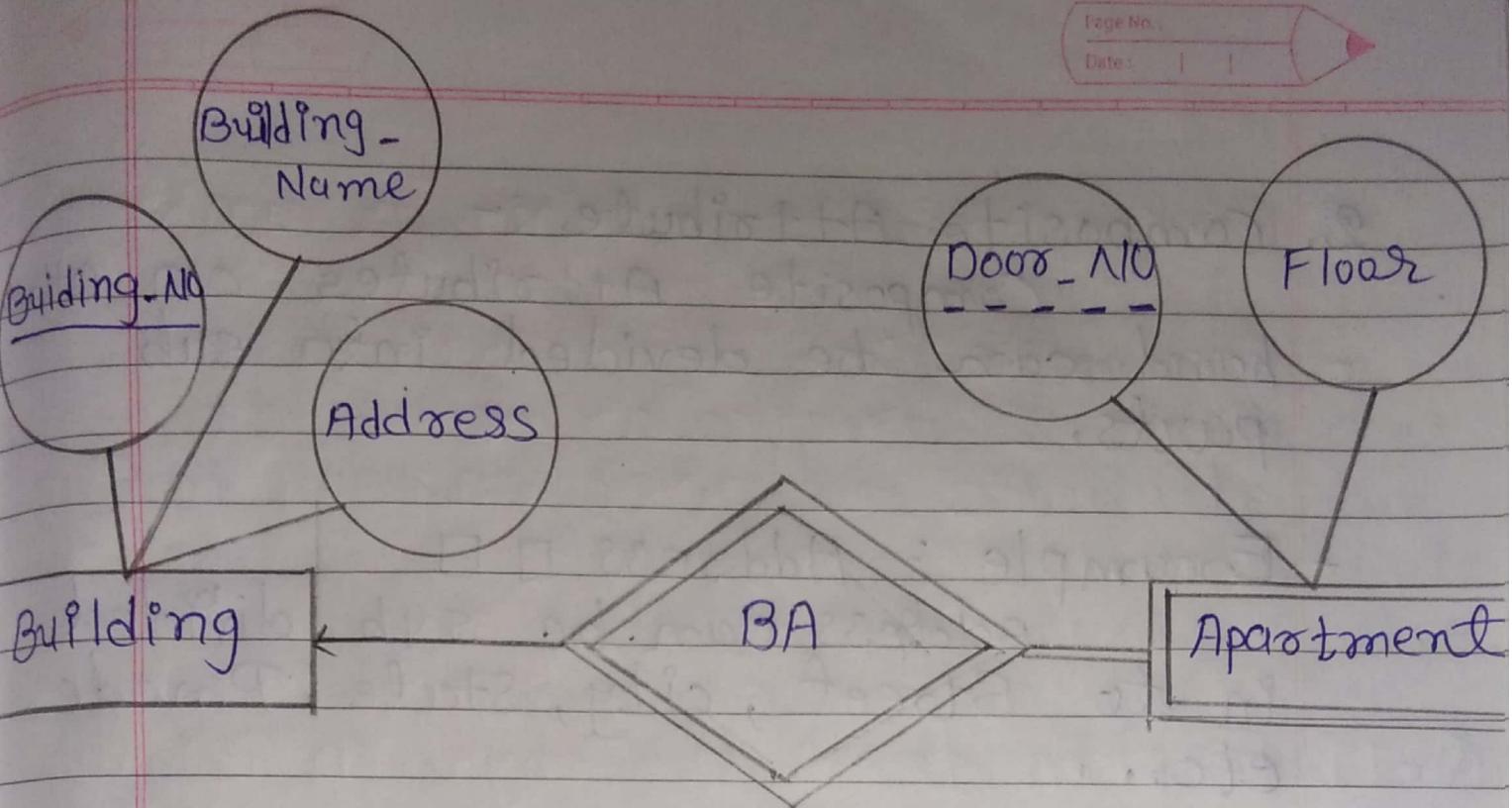


2. Weak Entity Set :-

- A weak entity set is an entity set that does not contain sufficient attributes to uniquely identify its entities.
- In other words, a primary key does not exist for a weak entity set.
- However, it contains a partial key.

called as a discriminator.

- Discriminator can identify a group of entities from the entity set.
- Discriminator is represented by underlining with a dashed line.
- Symbols Used :
 - A double rectangle is used for representing a weak entity set.
 - A double diamond symbol is used for representing the relationship that exists between the strong and weak entity sets and this relationship is known as identifying relationship.
 - A double line is used for representing the connection of the weak entity set with the relationship set.
 - Total participation always exist in the identifying relationship.
 - Example :-



→ Type of Attributes :-

1. Simple attributes
2. Composite attributes
3. Single valued attribute
4. Multi-valued attribute
5. Derived attributes
6. Key attribute
7. Null attribute

1. Simple Attribute :-

An attributes which are not divided into sub parts known as simple attribute.

- Example :- Customer_id , roll no etc

2. Composite Attribute :-

Composite Attributes on other hand can be divided into sub parts.

- Example :- Address □ □

Address can be subdivided into Street, city, state, Pinode, etc..

3. Single valued Attribute :-

Single value attributes have a single value for a particular entity.

- Example :- Loan number

4. Multi valued Attribute :-

Whereas multi value attributes have multiple value for a particular entity.

- Example :- Phone Number.

5. Derived Attribute :-

Value of this type of attributes is derived from the value of other related attributes or entities. Suppose that there is the customer Entity set has attribute Age that indicates customer's Age. If the customer entity set also has an attribute date of birth, we can calculate Age from the DOB. Thus Age is a derived attribute.

6. Key Attribute :-

Key Attributes are those attributes which can identify an entity uniquely in an entity set.

- Example :-

the attribute "Roll-no" (PK) is a key attribute as it can identify any student uniquely.

7. Null Attribute :-

An attribute is used when entity does not have the value for an attribute that can accept null value. Here null means entire

information is missing or unknown

- Example :-

IF particular value of attribute is unknown say contact no.

Q-11 Explain types of Keys in Database

→ Type of Keys :-

1. Super Key :-

An attribute or a combination of attribute that is used to identify the records uniquely is known as Super Key. A table can have many Super Keys.

2. Candidate Key :-

It can be defined as minimal Super Key or irreducible Super Key. In other words an attribute or a combination of attribute that identifies the record uniquely but none of its proper subset

can identify the records uniquely.

3. Primary Key :-

The Primary Key constraint uniquely identifies each record in a database table. Primary keys must contain UNIQUE values, and cannot contain NULL values. A table can have only one primary key, which may consist of single or multiple fields. When multiple fields are used as a primary key defined on any field, then you cannot have two records having the same value of that field.

4. Composite Key :-

If we use multiple attributes to create a Primary Key then that Primary Key is called Composite Key (also called a compound key or concatenated key).

5. Foreign Key :

A FOREIGN KEY is a key used to link two tables together.

A FOREIGN KEY is a field in one table that refers to the PRIMARY KEY in another table. The table containing the foreign key is called the child table, and the table containing the candidate key is called the referenced or parent table.

6. The Unique Key :

The UNIQUE Constraint prevents two records from having identical values in a column. The UNIQUE constraint ensures that all values in a column are different. Both the UNIQUE and PRIMARY KEY constraints provide a guarantee for uniqueness for a UNIQUE column or set of columns. A PRIMARY KEY constraint automatically has a UNIQUE constraint. However, you can have many UNIQUE constraints per

table, but only one PRIMARY KEY constraint per table.

Q-12. Explain Mapping Cardinalities with examples.

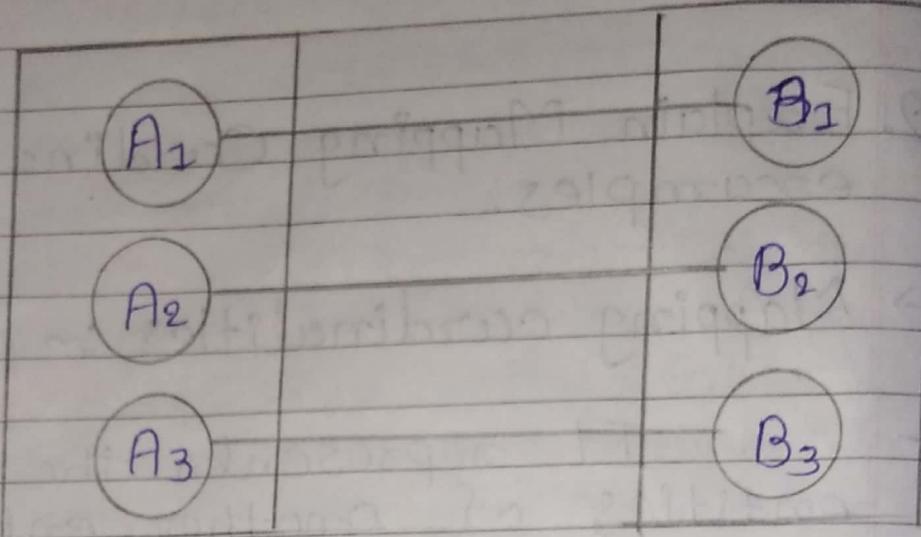
→ Mapping cardinalities :-

- It represents the number of entities of another entity set which are connected to an entity using a relationship sets.
- For a binary relationship set the mapping cardinality has type.
- It is most useful in describing binary relationship sets.

1. One to one relationship :-

An Entity in "A" is associated with at most one entity in "B" and an Entity in "B" is associated with at most one Entity with "A".

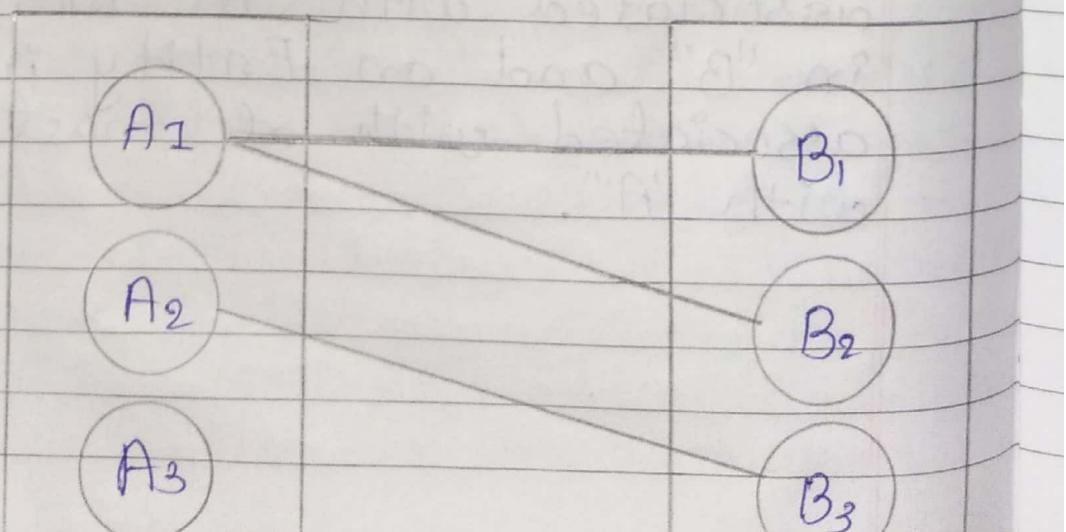
- Example :-



2. One to Many :-

An Entity in "A" is Associated with any number of entities in "B" and an Entity in "B" is Associated with at one Entity with "A".

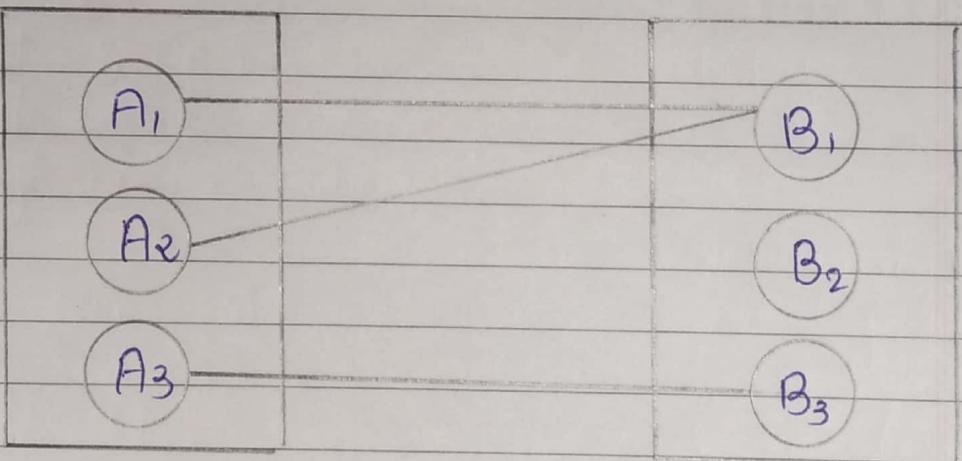
- Example :-



3. Many to one :-

An Entity in "A" is Associated with at most one entity in "B" and an Entity in "B" However can be associated with any number of entities in it.

- Example :-



4. Many to Many :-

An Entity in "A" is Associated with any number of entities in "B" and Entity in "B" is Associated with any number of entities in "A".

