

◆ Short Questions Answers:

Answer 1: In this table the ID and the CALL attribute is the candidate key for the table we cannot add more data because we have the unique attributes.

Answer 2:

Data Redundancy: Data redundancy is the replication of data. In other words, there are copies of the actual data at multiple places. It is a common issue in computer storage and database systems.

Data Integrity: Data integrity is the process of ensuring the accuracy and consistency of data over its entire life cycle. Data integrity helps to avoid unintentional changes to information. Moreover, data validation helps to maintain data integrity.

Answer 3: Before having the main solution we should know about Multivalued attribute.

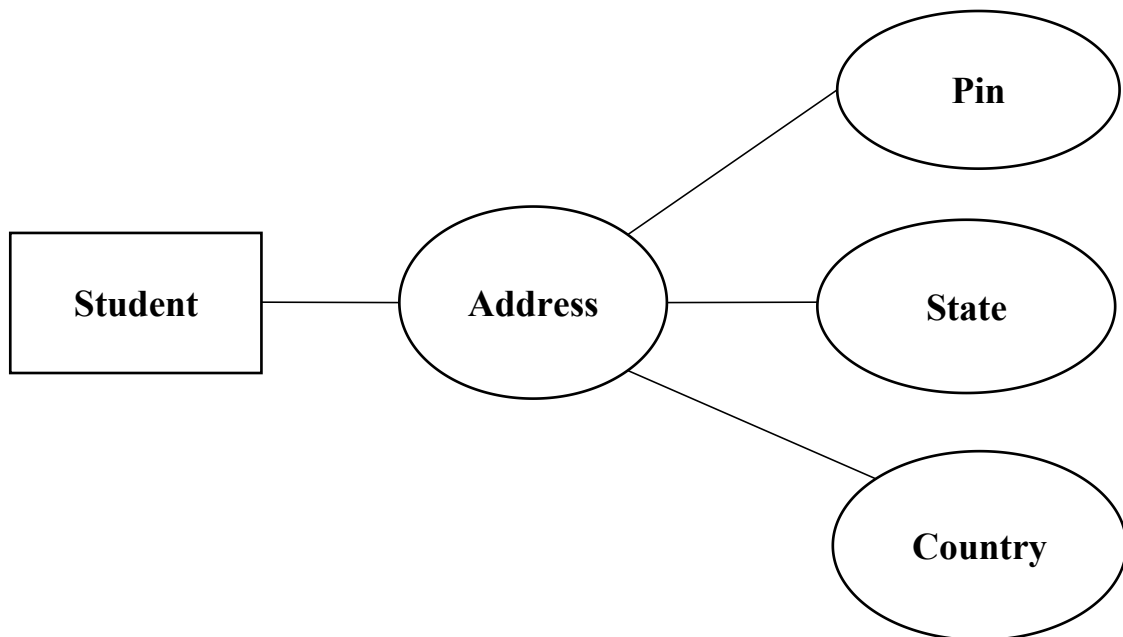
Conceptual Model:

Composite: Composite attributes are not atomic because they are assembled using some other atomic attributes. A typical example of a composite attribute is a person's address, which is composed of atomic attributes, such as City, Zip, and Street.

Multivalued attribute: A multivalued attribute can have more than one value at a time for an attribute. For ex., the skills of a surgeon is a multivalued attribute since a surgeon can have more than one skill. Another common example is the address field, which can have multiple values like zip code, street address, state, etc

The main aim of **conceptual model** is to establish the entities, their attributes, and their relationships. Logical data model defines the structure of the data elements and set the relationships between them.

A Physical Data Model describes the database specific implementation of the data model.



Answer 4: Reduced maintenance is ensured by the following steps:

- By not exposing the database tables to the users.
- By automating the database testing and thereby to maintain a good percentage of code coverage.
- By re-factoring the database properly without downtime.
- By ensuring the predictable performance of the queries which are written.
- By altering the new design over the old design as per the current requirements.
- By logging all the error messages effectively.
- By avoiding deadlock avoidance in the database.

Answer 5:

Mandatory one: It was represented by circled filled with color.



Mandatory many: It was represented by circled filled with color with many symbol.



Optional One: It was represented by circle not filled with any color.

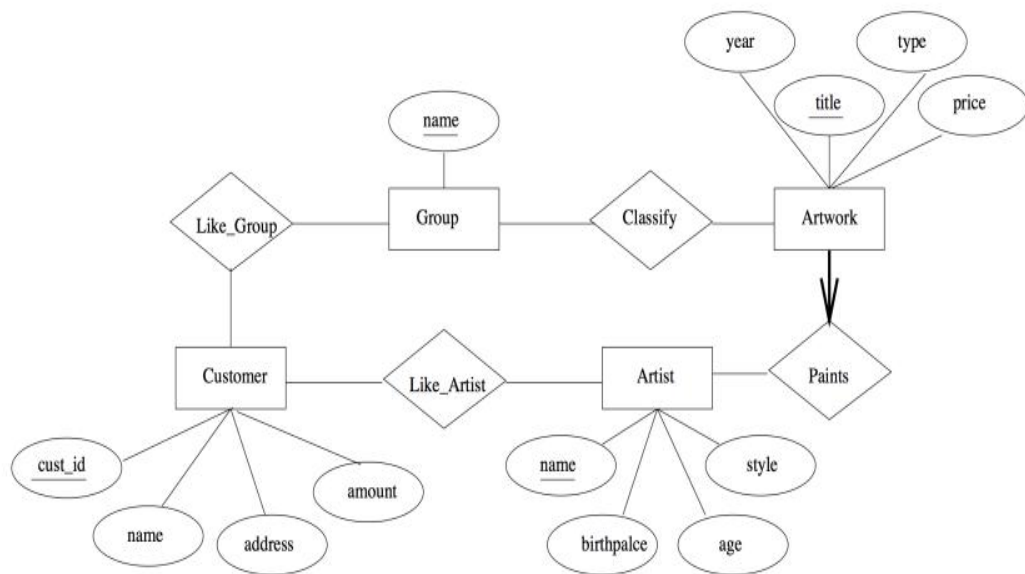


Optional Many: It was represented by circle not filled with any color with many symbol.



Answer 6: The explicit need of backup in database approach is because for a centralized shared database to be accurate and available all times, comprehensive procedure is required to be developed and used for providing backup copies of data and for restoring a database when damage occurs. A modern DBMS normally automates many more of the backup and recovery tasks than a file oriented system.

Q2 Answer:



A relational schema corresponding to the above ER diagram is given below.

Artist

(a name:string(10), birthplace:string(22), age:int, style:string)

artwork(title:string(10), year:int(10), type:string(10), price:real(50), a name:string(10))

customer(cust id:string(10), c name:string(25), address:string(100), amount:real(10))

a group (g name:string)(10)

classify(title:string(50), g name:string(10))

like group(cust id:string(10), g name:string(10))

like artist(cust id:string(10), a name:string(10))

Answer 3:

