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Subject: Database Systems

Q: Short Questions.

Q1:

Ans: The ID and the cell attributes is the candidate key, we cannot add more data because we have the unique attributes.

Q2:

Ans: Data Redundancy:
Data redundancy is defined as the storing of the same data in multiple locations. An example of data redundancy is saving the same file five times to five different disks.

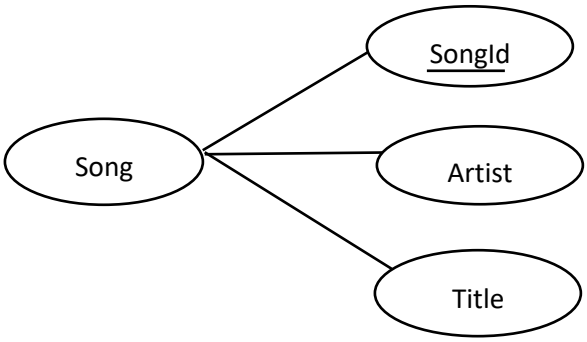
Data Integrity:
Data integrity is the overall accuracy, completeness, and consistency of data. When the integrity of data is secure, the information stored in a database will remain complete, accurate, and reliable no matter how long it's stored or how often it's accessed.

Q3:

Ans:

Composite attribute − Composite attributes are made of more than one simple attribute. For example, a student's complete name may have first_name and last_name.

Multi-value attribute − Multi-value attributes may contain more than one values. For example, a person can have more than one phone number, email_address, etc.



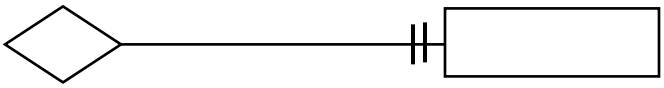
Here song is a composite multivalued attribute

Q4:

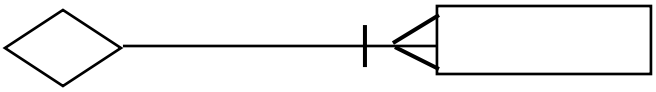
Ans: Most of processes within the system are encapsulated and reside inside the database engine, the behaviors maybe reused and incorporated into new behaviors in an ad hoc fashion. Also the ability to extend an existing class hierarchy means that the object database can be quickly extended to handle new classes of objects with the guarantee that these extensions will not affect any existing objects in the database.

Q5:

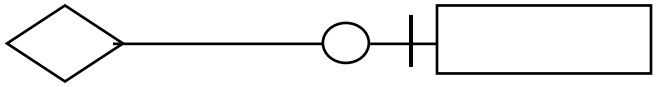
Ans: Mandatory one:



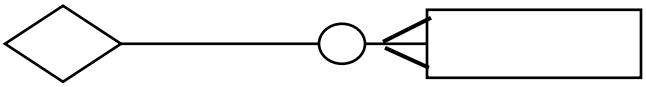
Mandatory many:



Optional one:



Optional many:



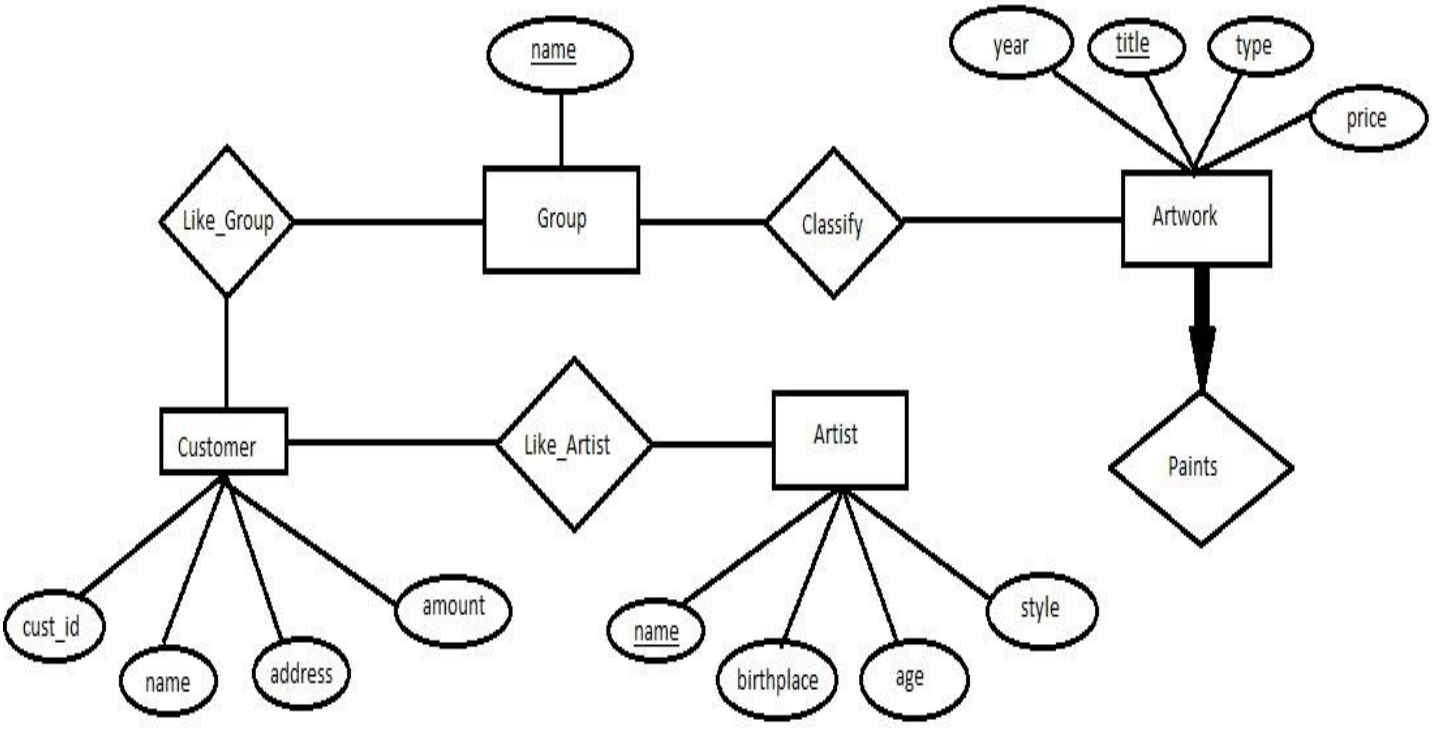
Q6:

Ans: 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.

Long Questions:

Q2:

Ans:



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)

Q3:

Ans: