**Chapter 9: Data Design**

After you have read Chapter 9, please answer the following questions (from p. 320).

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| 1. In the auto shop examples in Section 9.2.2, what are some problems that might arise in Mario’s system?  Why won’t Danica run into the same problems?  Provide specific examples in your answer. |
| Marios had a pronblem, but danica didnt. (i tried lol) |
| 2. What is a DBMS?  Briefly describe the components of a DBMS. |
| A database management is a collection of tools, and features that allows users to update manage access and analyze data in the database  The components are:  Interfaces for users it’s for people to interact with.  A physical data repository: data dictionary that gets turned into sub-schema.  A schema - |
| 3. Describe a primary key, candidate key, secondary key, foreign key, and a combination key.  Use your imagination to provide an example of each key that is *not* in the textbook. |
| Answer:   |  |  | | --- | --- | | **Primary key** description | A primary key is a field or combination of fields that uniquely and  minimally identifies a particular member of an entity. | | Example | a customer  table the customer number is a unique primary key because no two customers can  have the same customer number. | | **Secondary key** description | A field or combination of fields that can be used to access or retrieve records | | Example | to access records for only those customers in a specific postal code, the postal code  field would be used as a secondary key | | **Foreign key** description | A field in one table that must match a primary key value in another table in order to  establish the relationship between the two tables. | | Example | Carlton  Smith has advisor number 49. The value 49 must be a unique value in the ADVISOR  table because it is the primary key, but 49 can appear any number of times in the  STUDENT table, where the advisor number serves as a foreign key | | **Combination key** description | A type of data validation check that is performed on two or more fields to ensure that  they are consistent or reasonable when considered together. | | Example | the primary key must be a combination of student number and course ID. | |
| 4. What are entity-relationship diagrams and how are they used?  What symbol is used for a relationship?  What is an associative entity?  Provide an example. |
| An entity relationship diagram is a graphical model of the information system that depicts the  relationships among system entities.  A diamond symbol is used for a relationship.  An associative entity is an entity that has its own set of attributes and characteristics. Associative entities are used to link between many-to-many relationsjips |
| 5. What is cardinality?  What symbols do you use in the crow’s foot notation method? |
| Cardinality is detailed nature of relationships between entities.  Modality can be 1 and the symbol is placed on the inside, next to the cardinality symbol. For a cardinality of 1 a straight line is drawn. |
| 6. What are data warehousing and data mining?  How do businesses use these tools? |
| business intelligence tools that are used to turn information into actionable knowledge. and they use methods and processess for each use for its goal. |
| 7. What is an unnormalized design?  How do you convert an unnormalized design to 1NF?  In your answer, refer to specific pages and figures in this chapter. |
| an unnormalized design is a table with repeating groups you convert unnormalized design to 1NF, the table's primary key must be expanded to include the primary key of the group with repeats. |
| 8. How would you define second normal form?  How do you convert a 1NF design to 2NF?  In your answer, refer to specific pages and figures in this chapter. |
| Move part-key dependencies to another table  i would create a table for each rleated atrribute to ensure data. |
| 9. How would you define third normal form?  How do you convert a 2NF design to 3NF?  In your answer, refer to specific pages and figures in this chapter. |
| Move non-key dependencies to another table  i would move to another table. |
| 10. How would a specific date, such as April 27, 2015, be represented as an absolute date? |
| It's the total number of days from April 27, 2015 from whatever you set the base date is. |

*Extra Credit: Test Questions*

Please suggest two questions that you think should be on the Chapter 9 Quiz.

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| 1.what is a third normal form? |
| Move non-key dependencies to another table |
| 2.what is candidate key? |
| Any field that can serve as a primary key |