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IST 659

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Q1- Makeup

The following SQL code is an example of:

0 out of 1 points

```
create
table
 departments (


    department_id
int
identity
not
null
,


    department_name
varchar
(
20
)
not
null
,


    department_school
varchar
(
50
)
not
null
,


    department_address
varchar
(
50
)
not
null
,


constraint
 pk_departments_department_id
primary
key
 (department_id),


constraint
 u_departments_department_name unique (department_name)


)
```

Selected Answer: ✗ the conceptual data model

Answers: the conceptual data model

                  the graph implementation model

                ✓ the internal data model

                  the document implementation model

             the column-oriented implementation model

                  the logical data model

                  the physical data model

I selected that the above SQL code is an example of the conceptual data model simply because I

got confused between a conceptual and internal model. The conceptual model reflects the overall

view from the user's perspective of the database specifications. Things in the conceptual model represent what needs to be achieved, and conceptual designs act as a medium for communication between the designer of the database and its clients. There is no implementation of the database or model, just the requirements in the conceptual model. On the other hand, the internal model is how the database looks when implemented in the DBMS. This is where the requirements are implemented, hence using the creating tables function. This sql code displays the create tables function which is part of the internal data model, so the internal data model is the correct answer.

Question 4

Referential integrity allows us to build and maintain logical relationships between tables to maintain integrity or prevent errors to keep data accurate and consistent within the relationship. This means if there is a foreign key in a table, it must have a matching primary key coming from another table. In this question, I chose column 4 as the column that maintains referential integrity for column 4 that represents the primary key. I did not look carefully and notice the values did not match and also assumed the first column of Table B would be the foreign key. In this diagram there are no columns that has referential integrity for column 1 because by looking at the values for each column in table B, none of them match all the values in column 1. For example, in column 4, there is no K, I, or G so that will not count as foreign key for column 1 as those values are included. This goes the same for the other columns not being able to reference column 1 as a foreign key, hence why no columns has referential integrity.

Question 5

A natural key is a unique key of values beyond the database. These are real keys that act as the primary key such as a person's social security number, passport or license numbers, and the VIN number of vehicles. This helps maintain entity integrity because no values can be duplicated as every person's social security is unique and so forth. I picked that a unique key constraint can establish entity integrity without a natural key as a unique constraint ensures all values in a column are difference. However, after re-reading chapter 2, I caught that a natural key is also a candidate key. A candidate key is a column or set of columns that can establish entity integrity in the table. Employee_ssn can be an example of a candidate key as it has unique values (if by any chance it is duplicated in a table, one can assume it's the same employee). This is similar to a natural key, so candidate key can also satisfy entity integrity, hence being the correct answer.

Question 6

A tuple is an ordered set of data elements. For example, a table can have the column titles City, State and its corresponding rows would be {New York, NY}, {Los Angeles, CA} and that would be a tuple so its elements are ordered. Because it's an ordered set, {CA, Los Angeles} would not be valid. I picked atomic data because initially I had the wrong idea of what atomic data is. Atomic data cannot be broken into smaller units or divided. I interpreted this be an ordered set as it cannot be broken up and consist of atomic values, hence me thinking it was similar to a tuple. This was not the case as atomic data is just a single unit. I misread the question where it asked what a tuple is an example of, not what it consists of. The correct answer is composite data, which is data that can be broken up into more than one atomic value, hence a tuple. For example, an address can be broken up into street name, city, state, and zip code, or a tuple as it's an ordered set. The correct answer is that a tuple is an example of composite data as it can be broken up into an ordered set.