Quiz 11

Due Nov 22 at 10pm **Points** 10 **Questions** 5 **Time Limit** None

Instructions

Answer the following questions in your own words. Do NOT simply cut and paste the information from the slides. You will receive a score of 0 if you copy the prose from the slides.

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	13 minutes	0 out of 10 *

* Some questions not yet graded

ⓘ Correct answers are no longer available.

Score for this quiz: **0** out of 10 *
Submitted Nov 22 at 9pm
This attempt took 13 minutes.

Question 1 — Not yet graded / 2 pts

Describe the four ACID properties

Your Answer:

1. Atomic: There should not be any transaction partially completed
2. Consistent: Transaction should not have any adverse effect on data inside the database.
3. Isolation: Transaction should not affect other transactions existence
4. Durability: The database should be durable and be able to hold data in case of any system failure.

A ***transaction*** must have ***ACID*** properties

Atomic - all steps complete successfully or no change

Consistent – both successful and unsuccessful transactions must leave the system in a consistent state

Isolated – the data involved in the transaction must be isolated from other users until the transaction is complete

Durable – the changes must survive permanently

Question 2

Not yet graded / 2 pts

How are keys and foreign keys used in relational databases?

Your Answer:

Keys in general can be candidate key, primary key, composite key, etc. They are usually used to identify each row independently in the database.

A foreign key is used to link tables while performing joins

A primary key in a relational database table is analogous to a dictionary key in that is helps the database to quickly find the row in the database table with that value in the field serving as the primary key.

A Foreign Key in table A, FK(A), is used to quickly identify a corresponding primary key in table B, PK(B), where the FK(A) in table A matches PK(B) a primary key in table B.

E.g. the Student table in the Student repository includes a primary key for the student's CWID. This primary key in the Student table is also a foreign key in the Grades table where the studentCWID field in the Grades table matches the student's CWID in the Student table.

Question 3

Not yet graded / 2 pts

Why are joins important in relational databases?

Your Answer:

Joins are important when we need to fetch or refer data which is usually not available in one table.

We can avoid data repetitions by keeping unique data in each table and then joining them. Hence joins can also be used to remove inconsistencies in the database.

Joins are important because they allow us to combine data across two or more tables. E.g. we joined the Instructor table with the Grades table to calculate the total number of students by course for each instructor. Without joins, we would be forced to duplicate data across tables which would complicate updates and adds.

Question 4

Not yet graded / 2 pts

What impact does a 'where' clause have on a select query? When should you use a 'where' clause?

Your Answer:

WHERE clause is used to filter irrelevant rows from the table. eg: information about people who are senior citizens can be achieved using where clause. (Eg: "where age >= 65")

We can apply to any field we want, it can be a primary key or any other key.

A 'where' clause restricts records in a select statement to include only those rows that match the 'where' clause.

Question 5

Not yet graded / 2 pts

Why do database designers split information across tables rather than putting all data in a single table? E.g. Why did we split the Projects and Employees tables?

Your Answer:

Many times data could be redundant when data is of type 1-many. We need to split such information because we assume storage is expensive and should not be wasted and redundant data wastes storage space and also leads to inconsistency.

Database tables are designed to store each bit of information in one place to minimize the space needed to save the data and to facilitate changes. E.g. if information is duplicated, then any change requires that all copies must be changed to keep the data consistent.

Quiz Score: **0** out of 10