File 2 of 4

Grand Quiz

Cs403 - DBMS

Solved by John

Correct Answers with references = 23

Not sure = 7
is used to manage the database and its users. A DBMS consist of different components or subsystems that we will study about later. Each subsystem or component of the DBMS performs different function(s), so a DBMS is a collection of different programs that work jointly to manage the data stored in the database and its users. In many books and
Question #2 of 30 (Start time: 01.08.37 AM, 09 July 2020)

If an entity is linked with itself, then it is called ________ relationship.

Select the correct option

- Binary
- Ternary
- Nary
- Recursive

Boyce - Codd Normal Form

A relation is in Boyce-Codd normal form if and only if every determinant is a candidate key. A relation R is said to be in BCNF if whenever X → A holds in R, and A is not in X, then X is a candidate key for R. It should be noted that most relations that are in 3NF are also in BCNF. Infrequently, a 3NF relation is not in BCNF and this happens only if

(a) the candidate keys in the relation are composite keys (that is, they are not single attributes),
(b) there are more than one candidate keys in the relation, and
(c) the keys are not disjoint, that is, some attributes in the keys are common.

The BCNF differs from the 3NF only when there are more than one candidate keys and the keys are composite and overlapping. Consider for example, the relationship:
Question # 5 of 30 ( Start time: 01:14:02 AM, 09 July 2020 )

Select the correct option

- Development, implementation operation of the physical database
- Creation of the system catalog
- Monitoring and controlling database security and authorization: Setting up controls to ensure compliance with security policies
- All of the above

Select the correct option
Question # 6 of 30 (Start time: 01:15:41 AM, 08 July 2020)

Which of the following Data Models is not record based?

Select the correct option

- Hierarchical Data Model
- Network Data model
- Semantic Data Model
- Relational Data model

- Record Based Data Model
  This is the second type of data models available to use and has three
**Theta Join:**

In theta join we apply the condition on input relation(s) rows are used in the cross product to be merged and in that normal cross product all the rows of one relation the rows of second relation, but here only selected rows product with second relation. It is denoted as under:

\[ R \bowtie S \]
**Question # 8 of 30 (Start time: 01:18:31 AM, 09 July 2020)**

When one entity instance needs instance of another entity for its existence, then it is called ____________.

<table>
<thead>
<tr>
<th>Select the correct option</th>
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</thead>
<tbody>
<tr>
<td>Existence dependency</td>
<td>Grand Quiz</td>
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<tr>
<td></td>
<td>Cs403 - DBMS</td>
</tr>
<tr>
<td></td>
<td>Solved by John</td>
</tr>
<tr>
<td>Identifier dependency</td>
<td></td>
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<tr>
<td>Referential dependency</td>
<td></td>
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<tr>
<td>Acceptance dependency</td>
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</tbody>
</table>
Conceptual Database Design

The outcome of analysis phase is the conceptual database through E-R model. This design is independent of any tool and can be implemented in multiple data models like network model.
Question # 11 of 30 ( Start time: 01:23:53 AM, 09 July 2020 )

Internal schema/view defines the ______ of the data.

Select the correct option

- Functionality
- Source
- Structure
  - Grand Quiz
  - Cs403 - DBMS
  - Solved by John
- Transaction

...
Unary Operations:
These are those operations, which involve only one relation or table. These are Select and Project.
From this lecture we are going to discuss the logical database design phase of the database development process. Logical database design, like conceptual database design is our database design; it represents the structure of data that we need to collect to fulfill the requirements of the users or organization for which we are developing a system. However, there are certain differences between the two that are presented in the table below.
The Three levels architecture is useful for:

- Arranging the data in an organized manner.
- Hiding the details of internal systems.
- Breaking the data access restriction.
- Storing definitions of the structures.

level, which is stored in a specific format at the internal level.

The Three levels architecture is useful for hiding the details of internal systems.
In __________, the domains of attributes of a relation are atomic, that is they consist of single units that cannot be broken down further.

Select the correct option

- First normal form
- Second normal form
- Third normal form
- Grand Quiz
- Cs403 - DBMS
- Solved by John

**First Normal Form:**
A relation is in first normal form if and only if every attribute is single valued for each tuple. This means that each attribute in each row, or each cell of the table, contains only one value. No repeating fields or groups are allowed. An alternative way of describing first normal form is to say that the **domains of attributes of a relation** are atomic, that is they consist of single units that cannot be broken down further. This is no multivalued (repeating group) in the relation multiple values create problems when performing operations like select or join. For example there is a relation of Students that...
**Binary Relationships**

Binary relationships are those, which are established between two entity type.

Following are the three types of cardinalities for binary relationships:
Data Flow Diagrams:
The most common tool used for designing database systems is Data Flow Diagrams (DFDs) used to design systems graphically and express different system design levels.

**DFDs show the flow of data between different processes of a specific system.**

DFDs are simple, and hide complexities.

**DFDs are Descriptive and links between processes describe the information flow.**
Question # 18 of 30 (Start time: 01:35:25 AM, 09 July 2020)

Which of the following is an advantage of using the Traditional File Organization?

<table>
<thead>
<tr>
<th>Select the correct option</th>
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<tbody>
<tr>
<td>Time consuming</td>
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<tr>
<td>Data security</td>
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<td></td>
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<tr>
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<tr>
<td>Simplicity</td>
</tr>
<tr>
<td>Efficiency</td>
</tr>
<tr>
<td>Select the correct option</td>
</tr>
<tr>
<td>---------------------------</td>
</tr>
<tr>
<td>Binary operator</td>
</tr>
<tr>
<td>Project operator</td>
</tr>
<tr>
<td>Join operation</td>
</tr>
<tr>
<td>Select Operator</td>
</tr>
</tbody>
</table>

The project operator operates on a single table vertically, that is, it produces a view of the table, extracting the values of specified columns, eliminating all duplicates.
Question # 20 of 30 (Start time: 01:38:24 AM, 09 July 2020)

In your opinion, why relational database is widely acceptable?

Select the correct option

- Due to its complexity
- Due to its approach
- Due to its dependencies
- Due to its strength

Not sure
The relationship between department to employees is

Select the correct option

- Many to many
- One to one
- One to many
- Many to one

Department = single
Employees = plural
One to many
Logical data independence provides independency to change _______ model.

Select the correct option

- external
- logical
- conceptual
- internal

Logical data independence

Logical data independence provides the independent changes in conceptual model do not affect the external simply it can be stated at the immunity of external changes at conceptual level.

Although we have data independence at different levels. There may be some changes which may
Which of the following is correct regarding Dataflow diagram?

Select the correct option

- Single DFD is required to represent a system
- Created at increasing levels of detail
- The dataflow must be bidirectional
- Used to represent the relationships among the external entities

Note: Sure

Data Flow Diagrams:
The most common tool used for designing database systems is Data Flow Diagrams (DFDs), used to design systems graphically and expresses different levels.

DFDs show the flow of data between different processes, and DFDs are simple, and hide complexities.

DFDs are Descriptive and links between processes describe...
Entities enrolled in a relationship are called its participants.

The participation of an entity in a relationship is total when all entities of that set must be participant in the relationship otherwise it is partial e.g. if every Part is supplied by a Supplier then the SUPP_PART relationship is total. If certain parts are available with more than one supplier than it is partial.
Theta Join:
In theta join we apply the condition on input relation(s) and then only those select rows are used in the cross product to be merged and included in the output. It means that in normal cross product all the rows of one relation are mapped/merged with the rows of second relation, but here only selected rows of a relation are made cross product with second relation. It is denoted as: \( R \times S \)
Not sure.

Confirm it.

Correct as per past papers.
By default, a non-key attribute in a relation can have _______ value.

Select the correct option:

- Binary
- Null
- Character
- Integer

Grand Quiz
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Not sure
<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
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<tbody>
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<td>User accessible catalog</td>
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<tr>
<td>Data processing</td>
<td></td>
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<td></td>
<td>Grand Quiz</td>
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<td></td>
<td>Cs403 - DBMS</td>
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<td></td>
<td>Solved by John</td>
</tr>
<tr>
<td>Authorization service</td>
<td></td>
</tr>
</tbody>
</table>

- **Recovery Services**

Recovery services mean that in case a database gets an inconsistent state due to any invalid action of some user, the DBMS should be able to recover itself to a consistent state, ensuring that the data loss during the recovery process of the database remains minimum.
**Question # 28 of 30 ( Start time: 01:52.01 AM, 09 July 2020 )**

Which feature of database provides conversion from inconsistent state of DB to a consistent state ensuring minimum data loss?

- User accessible catalog
- Data processing
- Recovery service
- Authorization service

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**P.47**

- **Recovery Services**

Recovery services mean that in case a database gets an inconsistent state to get corrupted due to any invalid action of someone, the DBMS should be able to **recover itself to a consistent state**, ensuring that the data loss during the recovery process of the database remains minimum.
<table>
<thead>
<tr>
<th>Select the correct option</th>
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</thead>
<tbody>
<tr>
<td>DFD</td>
</tr>
<tr>
<td>Database</td>
</tr>
<tr>
<td>Grand Quiz</td>
</tr>
<tr>
<td>Cs403 - DBMS</td>
</tr>
<tr>
<td>CASE tools</td>
</tr>
<tr>
<td>Solved by John</td>
</tr>
<tr>
<td>Cross Reference Matrix</td>
</tr>
</tbody>
</table>

- **Free Standing**

Second type of data dictionary is free standing data dictionary create by any CASE tool and then attached to the database management systems. A number of case tools are available for this purpose and help user designing the database and the database applications as well in some modern forms of the CASE tools.
A **join operator** is used to combine rows from two or more tables, based on a related column between them.

<table>
<thead>
<tr>
<th>Select the correct option</th>
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</thead>
<tbody>
<tr>
<td>Select operator</td>
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</tr>
<tr>
<td>Project operator</td>
<td></td>
</tr>
<tr>
<td><strong>Join operation</strong></td>
<td><strong>Grand Quiz</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Cs403 - DBMS</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Solved by John</strong></td>
</tr>
<tr>
<td>Delete operator</td>
<td></td>
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