

Lesson Plan

DBMS

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Index-Part-2

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-
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1. Introduction to DBMS [13 mcqs]

- 1. Data can be used to make decisions only if:-**It can be processed into information**
- 2. Which of the following is Data:Web page,Image shot from phone,Fingerprint
- 3. Anything which stores only unstructured data can be called a Database.-**False**
- 4. Which of the following is not True:-**Database and Database management system (DBMS) are the same**
- 5. Which of the following is the purpose of DBMS:-**Creation of database,Manipulation of data,Retrieving data from database**
- 6. File based systems faces data integrity issues because:-**Duplicate files may have different values**
- 7. What does same data being saved in multiple locations called-**Redundancy**
- 8. In File based systems it is easy to maintain concurrency control when multiple users are updating the same file:-**False**
- 9. File System in which each teacher of a college is maintaining their separate files concerning the same subjects taught in the course would lead to :-**High Data Redundancy**
- 10. If your laptop has the application like MS Access which is fetching data from some other system then it is an example of which type of architecture : **2 tier**
- 11. In a software architecture which of the following is responsible for computing the result and returning it:**Server**
- 12. What do you mean by Data Sharing in DBMS:-**Share information visible to everyone**
- 13. What is/are the drawback(s) of using DBMS:-**Requires training,Complex to use,It is costly**

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2. DataModels [15 mcqs]

- 1. Which of the following statements are correct regarding the data models?:-**Conceptual data model represents high level view of the data**

2. When asked to design a high level conceptual data model, the very first step is _____ requirement analysis_____.
3. Which one of the following is an example of the object-based logical model? Entity Relation model
4. Which of the following is true for conceptual model:-Independent of both H/w & S/w
5. Which of the following model tells how data will be on the disk?Physical Data Model
6. Data modelling helps in achieving abstraction in DBMS.:True
7. Which of the following data models describes the database at the highest level ?Conceptual DataModel
8. Which one of the following is a popular Representational Model?Relational Model
9. Database schema is part of which design process:-Logical Design
10. In 3 tier architecture, which of the following deals with the physical storage of data?Internal Schema
11. Which of the following shows only the relevant data to users and hides the rest?External Schema
12. Which of the following describes the design of a database and the relationship between data ?Conceptual schema
13. Which of the following changes whenever we modify any data?Database Instance
14. Which of the following is/are true with reference to 'view' in DBMS?
15. 1. A 'view' is a special stored procedure executed when a certain event occurs.
2. A 'view' is a virtual table, which occurs after executing a pre-compiled query. Only 2 is true

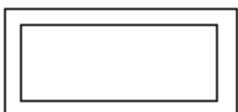
Documents:-C:\Users\N1606\Desktop\Rahim_CodingNinjas\MileStone-7\DBMS\2.Data Models

3. ER-Models [24 mcqs]

1. ER diagram represents which of the following data models::Conceptual
2. **ER diagrams are usually created after we design the databases.**State whether it's True/False? False
3. Why do we use ER diagrams?It acts as a blueprint for designing the database,It helps in the identification of entities, attributes, relationships between various entities,It can be translated into relational models
4. **Entities, attributes and relationships are the three important components of ER Diagram.**State whether it's True/False? True
5. For an entity Book, which attribute can be made the primary key?:Book_Code
6. Which of the following is true for entity?It can be related to another entity,It has a key attribute.,It can have one or many attributes
7. Any entity which does not have its own primary key is known as:-Weak Entity

How is a weak entity represented: -

a.



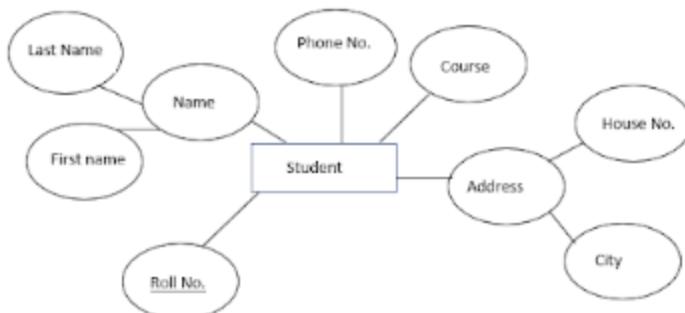
8.

9. An entity can be related to many other entities
10. For Library Management System, the Book_code, Book_name, Author_name, Book_price are all examples of :-Attributes
11. In a library management system a student can borrow maximum of 3 books in a semester, so in ER diagram the "Book_name" attribute should be represented as :

c.



For the following Student entity, identify the composite attributes:



12. Name,Address
13. A student can book a maximum of three books but each book can be booked by only one student, so the relationship between student and book is:1:N onetomany
14. Which of the following is used to represent the relationship in an E-R diagram:Diamond
15. Each student gets only one login ID for the online library system. So, the relationship between student and login ID is:1:1
16. Which of the following is considered best-practices for creating ER Diagram? Naming every entity , attribute and relationship

17. Which of the following is not true for ER Diagram?

MCQ - 17 (ER Diagram)

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Which of the following is not true for ER Diagram?

Options

Attempts left: 1/2

This problem has only one correct answer

- ER Diagram is a visual representation for ER model
- ER diagrams has three components: entities, relationships and attribu
- ER diagram is not a high level data model diagram
- All of the above

 Hurray! Correct Answer

Solution Description

ER Diagram is a high level data model diagram, which helps in visualising and designing the database components.

18. Which of the following is a type of abstraction in which entities with relationships come together to form higher level entity?Aggregation

19. If textbook, magazine, journal, encyclopedia entities are derived from the Book entity , then it is an example of:Specialization

20. Which is true for Generalisation:Bottom Up approach

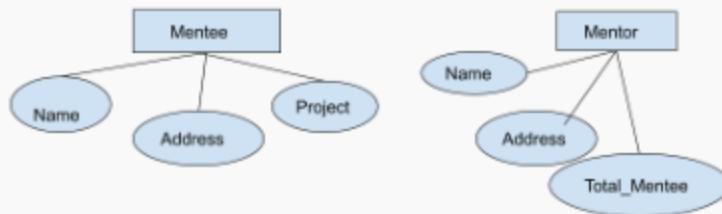
21. The process of designating sub groupings within the entity set is called as _____ .Specialization

22. There is a library system, which has a "Category" of "Book". A book *belongs* to a category and a "student" can make an inquiry on a specific "Book" as well as a "Category". It is an example of::Aggregation

Practice Assignment - 1

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Given above is an ER-Diagram, apply Generalization on Mentee and Member to form a new ER-diagram (Hint: both are Person)



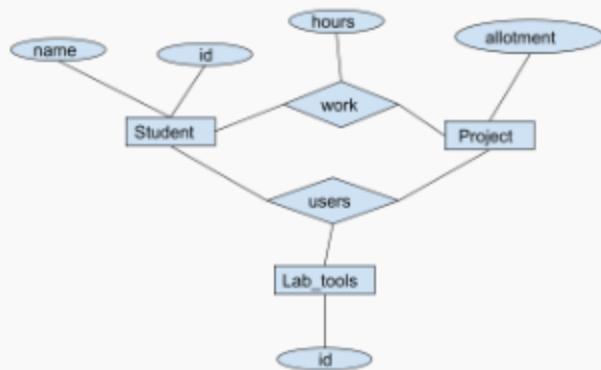
23.

Practice Assignment - 2

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Consider a Database with information about student who work on a particular project and use a number of lab tools doing that work. Relationships 'work' and 'uses' , could be combined into a single set. However, they shouldn't be, as this would obscure the logical structure of this scheme.

What could be an apt way to represent relationships among relationships?



24.

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4. Project ER Model [2]

 Project - ER Model
Deadline
Apr 20, 2023, 11:59 PM

Practice 100.0%
Score: 20.00/20
 Online Delivery System ER-Di... •

Practice 100.0%
Score: 20.00/20
 Online Doctor Consultation ER... •

Online Dilevery System ER-Diagram 

Create an ER Diagram for
Online delivery system:
Every commodity that needs to be delivered to a customer should be fetched from the warehouse where it is stored safely. Each warehouse has its unique ID , address, contact number. Every commodity to be delivered has a unique ID, height, weight, delivery date, destination, customer name. After getting the item from the warehouse it should be shipped by a vehicle which has vehicle number, type, route, charges.
Identify the entities, attributes, type of attributes, relationships, cardinalities and primary key.
Your project will be evaluated on following parameters -
ER-DIAGRAM (Max Score 10)
ER-Diagram

Project Submission 
Deadline Apr 20, 2023

Upload Project

Your Submission
 OnlineDeliverySystem.zip ✓ + Score: 100%

Assessment Report 
ER-DIAGRAM SCORE: 10/10
Diagram Image: "https://files.codingninjas.in/er1sol-13871.png"

Rate your Project Evaluation   

Online Doctor Consultation ER-Diagram 

Create an ER-Diagram for
Online doctor consultation system:
In this system the patients can book appointments with the doctor who can then share a prescription slip which will have the details of the medicine which needs to be purchased by the patient.
The patient must have basic details like a unique Id (Adhaar no.), first name, last name, DOB, contact number, gender.
The doctor will also have the a unique ID, first name, last name, years of experience, type (cardiologist, pediatrician etc) and contact number.
The prescription ship will have Slip number, date of generation, ID of doctor who generated it, ID of patient to which it is sent.
Medicine will have type, price, quantity, date of expiration.

Project Submission 
Deadline Apr 20, 2023

Upload Project

Your Submission
 OnlineDoctorConsultancy.zip ✓ + Score: 100%

Assessment Report 
ER-DIAGRAM SCORE: 10/10
Diagram Image:- "https://files.codingninjas.in/er2sol-13884.png"

Rate your Project Evaluation   

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BMS\4.Project ER Model

5. Relational Model [26]

This problem has only one correct answer.

Match the ER diagram components to their representation in the relational model

| | |
|----------------------------------|----------------|
| a. Entity | 1. Foreign key |
| b. Attribute | 2. Relation |
| c. Relationship between entities | 3. Columns |

a1 b2 c3

a2 b3 c1

a2 b1 c3

a3 b1 c2

Hurray! Correct Answer

- 1.
2. In a relational model, which of the following indicates the cardinality: Number of Tuples
3. Which of the following is true:- A relation and table are the same., An attribute and a column in relation means the same.

For the given relation Book, what is the degree:

| Book_name | Book_code | Book_Price | Author_name | Publish_date |
|-------------|-----------|------------|-----------------|--------------|
| Physics-1 | 011 | 180 | Dr. Raj Nag | 21-03-1998 |
| Chemistry-1 | 021 | 200 | Dr. Kiran Sethi | 25-2-2001 |
| Maths-1 | 031 | 175 | Vipul Sen | 1-6-2006 |

3

5

15

- 4.

5. Which of the following is not a property of the table:

Options

Attempts left: 0/2

This problem has only one correct answer

- Every column should have unique name
- An attribute can have multiple values for a row
- Column values should be of same type
- Sequence of rows is insignificant

The solution to this problem has been viewed

Solution Description

A relation should contain atomic values, so multiple values for an attribute should be avoided

Match the components of relational model which are same:

| | |
|-----------|----------------|
| a. Tuples | 1. Relation |
| b. Column | 2. Field |
| c. Table | 3. Rows/Record |

a2 b1 c3

a3 b2 c1

a1 b3 c2

a3 b1 c2

 Hurray! Correct Answer

6.

7. There is a set of permitted values for each attribute of a relation. These are known as:Domain
8. A null value of an attribute indicates which of the following:unknown

MCQ - 9[Send Feedback](#)

Attempts left: 0/2

Which of the following is true:

9.

10. A primary key should be:Unique and Not null

Options

This problem has only one correct answer

- A candidate key is a minimal super key.
- Candidate keys which do not become primary keys are called alternate keys.
- Any candidate key can become a Primary key.
- All of the above

 Hurray! Correct Answer

Solution Description

A candidate key is a minimal subset of super keys. It contains no redundant attribute. Hence, it is selected from the set of super keys given that those selected keys DO NOT have any redundant attributes. Candidate Key value should not be null. Any candidate key can be selected to be a primary key according to preference. The candidate keys that are not selected as the primary key are called the alternate keys.

Which of the following is true:

11.

12. A primary key with the help of foreign key creates a parent child relationship between the tables that connect them.:True
13. What does R refers to in CRUD operations:Read
14. Entity integrity states that primary key should be:Not null
15. Referential integrity constraint states that foreign key should have a matching primary key or it must be not Null:-False

- We can have multiple candidate keys

- We can have multiple primary keys

- The value of primary key can be same for 2 tuples

- Alternate key and primary key are the same.

 Hurray! Correct Answer

Solution Description

A relation can have multiple candidate keys, out of which one is selected as a primary key and the remaining ones are called alternate keys

In following table which integrity constraint is being violated:

| Book_name | Book_code | Book_price | Author_name | Publish_date |
|-------------|-----------|------------|-----------------|--------------|
| Physics-1 | 011 | 180 | Dr. Raj Nag | 21-03-1996 |
| Chemistry-1 | 021 | 200 | Dr. Kiran Sethi | 25-2-2001 |
| Maths-1 | 031 | 175 | Vipul Sen | 1-6-2006 |
| Grammar-1 | 021 | 150 | Dr. Jay | 11-6-2020 |

Note: Book_code is the primary key.

16.

17. For an attribute “Adhaar Number” which is defined as integer type, which constraint would be violated if we enter the PAN (has numbers and alphabets) in it:-Domain Constraint

Referential Integrity constraint

Entity Integrity constraint

Domain constraint

None of the above

Hurray! Correct Answer

Solution Description

The Book_code column has 021 value twice for two different books. So, it violates the Entity Integrity Constraint since every table should have a primary key to identify each row uniquely and in this table the primary key is not unique.

18.

Which of the following is not a key constraint:

Check

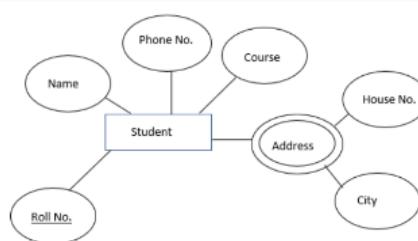
Not Null

Unique

None of the above

Hurray! Correct Answer

Which of the following relational database schemas is a correct representation for the following ER diagram:



Student(Name, Phone no., Course, Roll No., House no., City)

Student(Name, Phone no., Course, Roll No.) Address(House no., City,

Student(Name, Phone no., Course, Roll No., Address, House no., City,

All of the above

Hurray! Correct Answer

Solution Description

In the following ER diagram, The rectangle in the ER diagram represents entity sets. whereas the ellipsis represents attributes. Double ellipses

19.

20. Relational algebra is :Procedural query language

Which of the following is true for selection operator:

- It displays the specified columns
- It selects the specified columns
- It modifies the specified columns
- It deletes the specified columns

 Hurray! Correct Answer

21.

Which of the following should be used to list down all the names of the Book whose Book_price is less than 100 from the relation 'Book':

- $\sigma_{Book_name, Book_price < 100}(Book)$
- $\Pi_{Book_name}(\sigma_{Book_price < 100}(Book))$
- $\sigma_{Book_name}(\sigma_{Book_price < 100}(Book))$
- $\Pi_{Book_price < 100}(Book)$

 Hurray! Correct Answer

Solution Description

To list down all the names of the Book whose Book_price is less than 100 from the relation 'Book', we can use the projection operator(Π) on the book_name attribute which is used to display the output. Then use the Selection operator(σ) on the book price attribute to fulfill the condition present in the question. The selection operator will get the desired data.

22.

23. What will be the result if set difference operator is applied as B-A on relations A and B?--All rows of relation B which are not present in relation A

Relation A

| Sno | Auhtor_Name |
|-----|-------------|
| 1 | A |
| 2 | B |
| 3 | C |

Relation B

| Id | City | State |
|----|--------|---------|
| 4 | Agra | UP |
| 5 | Bhopal | MP |
| 6 | Imphal | Manipur |

What would be the result from cartesian product of Relation A and B (A X B)

24.

 You have max 2 attempts to score in this question.

Attempts left: 0/2

Options

This problem has only one correct answer

- The relation having 2 attributes and 6 tuples
- The relation having 5 attributes and 6 tuples
- The relation having 5 attributes and 9 tuples
- The relation having 2 attributes and 9 tuples

 Hurray! Correct Answer

Solution Description

The cartesian product is an operation used to combine each row in a given table with each row of another table. It is also known as the cross product. It means the product of the number of rows and the sum of the number of columns. So the Solution will be the cross product of A and B. As A has three rows and two columns, B has three rows and three columns. So Solution must be nine rows, and five columns as Columns and rows represent attributes and tuples. The answer must be 'c'.

QUESTION

Which of the following would rename the "class" attribute to "course" in a relation called University

- a. $\rho_{\text{class} \rightarrow \text{course}}(\text{University})$
- b. $\sigma_{\text{class} = \text{course}}(\text{University})$
- c. $\Pi_{\text{class}, \text{course}}(\text{University})$

25.

THIS PROBLEM HAS ONLY ONE CORRECT ANSWER

- a
- b
- c
- None of the above

 Hurray! Correct Answer

Solution Description

A rename operator, denoted by ' ρ ', will be used to rename the "class" attribute to "course" in a relation called University.

26.

Practice Assignment

[Send Feedback](#)

With the help of ER Diagram designed in the previous module convert the Online delivery system and online doctor consultation system into relational models.

(Hint: identify the tables, attributes, relationships between tables, primary key and foreign key for the tables)

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6. Project Movie Store

Documents:-C:\Users\h1606\Desktop\Rahim_CodingNinjas\MileStone-7\DBMS\6.Project Movie Store

7. Introduction to SQL[4Mcqs]

1. What is the full form of CRUD operations? CREATE READ UPDATE DELETE
2. Which of the following is true for SQL:sql is a programming language or Structured query language is a programming language that can be used to manipulate, retrieve, delete and store data into RDBMS.

This problem may have one or more correct answers

Which of the following is true:

- MySQL and SQL, both are programming language
- MySQL is an open-source DBMS✓
- MySQL is a programming language
- MySQL is a relational DBMS✓

 Hurray! Correct Answer

Solution Description

MySQL is an open-source Relational Database Management System.

3.

Problem Result

MCQ - 4

[Send Feedback](#)

Which of the following is True:

MYSQL is a type of RDBMS whereas SQL is a programming language

SQL is a type of RDBMS whereas MySQL is a programming language

None of the above

 Hurray! Correct Answer

Solution Description

MySQL uses the Client-Server model. In this model, a "client" is a front-end application that uses the services provided by a MySQL server. And this whole use of the services takes place through SQL Queries. The difference between SQL and MySQL is shown below

| SQL | MySQL |
|--|---|
| SQL is a Structured Query Language. It is useful to manage relational databases. | MySQL is an RDBMS to store, retrieve, modify and administrate a database using SQL. |
| SQL is a query language. | MySQL is used as an RDBMS database. |
| To query and operate database systems. | Allows data handling, storing, modifying, deleting in a tabular format. |

4.

5.

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8. SQL Datatypes[25Mcqs]

1. Data Type for strings can be stored as:Fixed and variable length

- What is/are the need for datatypes in SQL?
- 2.
- What are some common data-types available in MySQL?
- 3.
4. Keywords can be changed in MySQL.:False
5. Which datatype is more suitable for storing Gender for a person, having values like M/F/O?Fixed length CHAR

MCQ - 5

[Send Feedback](#)

Which of the following options are correct?

Options

Attempts left: 0/2

This problem may have one or more correct answers

- Fixed length data types are better in the real world because no one can change the length once fixed.
- Variable length data types are better in the real world because data in the real world is dynamic.✓
- Both Fixed length and variable length data types consume the complete memory which they are allocated.
- Variable length consumes only memory which is equal to data size.✓

 Hurray! Correct Answer

6.

7. Size of INT Data type?(in bytes):-4

8. Which data type is best for storing the population of the cities?BIGINT
9. Which datatype is best for defining the available Balance in a bank account?DECIMAL
10. Value range of BIT is? 1-64
11. By Default what is the nature of INT data type? (Signed/Unsigned)SIGNED
12. To store the City for the students in the table ‘Student_details’ we should: dECLARE CITY AS VARCHAR

- 13.
14. How will DECIMAL (7,2) be stored in MySQL? Total of 9 digits where 7 digits are significant digits/value and 2 digits after decimal

15.

16.

17. Timestamps can be used to track the changes done in the records or database.:True
18. Which of the following data type stores the value in format “0000-00-00”==Date
19. Timestamp data type provides both the date and the time value.--True

Which of the following is true:

This problem has only one correct answer

- Boolean or Bool data type is inbuilt in MySQL
- Bool data type can be implemented using TINYINT data type
- Bool data type cannot be implemented in MySQL
- Hurray! Correct Answer

Which of the following is true:

This problem may have one or more correct answers

- By default INT stores signed value
- Unsigned INT can store only positive values or 0
- Signed INT can be used to store the temperature of a city
- All of the above
- Hurray! Correct Answer

Which of the following statements is true ?

This problem may have one or more correct answers

- TimeStamp and Datetime Data types have different range✓
- TimeStamp and Datetime Data types consume different memory sizes.✓
- TimeStamp and Datetime Data types store different types of data

Blob is used to store, which of the following :

- Audio
- Video
- Images
- All of the above

 Hurray! Correct Answer

20.

21. Full form of BLOB is?Binary Large Object

22. To store the book titles in a table, which of the following should be preferred assuming that no

book title is longer than 60 characters:-Varchar(100)

23. Which of the following should be used to store geographical information ?Spatial datatype

24. Full form of JSON is :javascript object notation

25. Which data type is best suited to store Key:Value pair ? JSON Datatype

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9. SQL Commands[6Mcqs]

1. Which of the following deals with database schemas and table structure ::DDL

Which of the following is true:

- DROP command removes the complete table structure from the database✓
- TRUNCATE command removes the complete table structure from the database
- TRUNCATE command removes all the tuples from the table but not the table✓
- DROP can be used to remove the complete objects such as database, table, views and they cannot be rolled back.✓

 Hurray! Correct Answer

Solution Description

DROP command can be used to remove complete objects such as databases, tables, views and they cannot be rolled back, so it must be used

2.

3. ALTER command is a type of::DDL
4. Which of the following is not a part of Data Manipulation Language ::ROLLBACK
5. Which of the following keywords is not part of Transaction Control Language ?SAVE[There are mainly four types of TCL Command - 1. BEGIN TRANSACTION 2. COMMIT 3. ROLLBACK 4. SAVEPOINT]

MCQ - 6

[Send Feedback](#)

What is the significance of using Transaction Control Language in MySQL ?

Options

Attempts left: 0/2

This problem may have one or more correct answers

- To permanently save any transaction into the database.✓
- To temporarily save a transaction.✓
- You cannot save a transaction using TCL
- You can jump back to previous savepoint in a transaction✓

 Hurray! Correct Answer

Solution Description

The TCL can be utilized to permanently and temporarily save the transaction in the database, this could be done using COMMIT and SAVEPOINT. You can also jump back to previous transactions in TCL using ROLLBACK and you can definitely save the transaction using TCL.

6.

Documents:-C:\Users\h1606\Desktop\Rahim_CodingNinjas\MileStone-7\DBMS\9.SQL Commands

10. Filtering and Sorting Data[28Mcqs]

1. SELECT STUD_ID,FNAME,LNAME FROM STUDENT
2. SELECT STUD_ID,FNAME,LNAME,EMAIL,PH_NO FROM STUDENT WHERE JOINING_YEAR=2018;
3. SELECT * FROM STUDENT WHERE COURSE='CS400';
4. SELECT STUD_ID,FNAME,LNAME,EMAIL,PH_NO FROM STUDENT WHERE JOINING_YEAR>2000 AND LNAME='DAGA';
5. SELECT STUD_ID FROM STUDENT WHERE JOINING_YEAR=2016 OR COURSE='CS101';
6. SELECT * FROM STUDENT WHERE JOINING_YEAR BETWEEN 2009 AND 2011;
7. SELECT FNAME,LNAME,JOINING_YEAR,PH_NO FROM STUDENT WHERE DOB>='1998-11-02';
8. SELECT EMP_NAME,EMAIL FROM EMP_DATA WHERE CONTRACT='Intern';
9. SELECT * FROM EMP_DATA WHERE DEPT='D3' AND CONTRACT='FTE';
10. SELECT * FROM EMP_DATA WHERE DEPT='D1' OR DEPT='D3';
11. SELECT * FROM EMP_DATA WHERE DEPT IN (D1 OR D3);
12. SELECT * FROM EMP_DATA WHERE DEPT IN ('D1','D3');
13. SELECT * FROM EMP_DATA WHERE DEPT NOT IN ('D1','D2');
14. SELECT EMP_NAME,DEPT FROM EMP_DATA WHERE HOMETOWN IN ('Mumbai','Jalandhar') and EMP_ID <900;
15. SELECT FNAME,LNAME FROM STUDENT WHERE FNAME LIKE '_s%';
16. SELECT * FROM STUDENT WHERE EMAIL LIKE '%yahoo%';
17. SELECT * FROM EMP_DATA WHERE EMAIL LIKE 'fab%';
18. SELECT EMP_ID,EMP_NAME
FROM EMP_DATA

WHERE EMAIL LIKE '%bcd%' AND DEPT IN ('D3','D4') AND HOMETOWN NOT IN ('Himachal','Guwahati');
19. SELECT * FROM STUDENT ORDER BY LNAME ASC;
20. SELECT * FROM STUDENT ORDER BY LNAME DESC;
21. SELECT EMAIL FROM STUDENT WHERE JOINING_YEAR=2005 ORDER BY DOB DESC;

22. SELECT FNAME,LNAME FROM STUDENT WHERE COURSE='CS206' AND JOINING_YEAR=2019 ORDER BY DOB ASC;
 23. SELECT ORDER_ID,ORDERED_TIME FROM E_TRANSACTIONS ORDER BY ORDERED_TIME ASC;
 24. SELECT * FROM E_TRANSACTIONS ORDER BY SHIPPING_TIME DESC;
 25. SELECT * FROM E_TRANSACTIONS ORDER BY ORDERED_TIME DESC, SHIPPING_TIME ASC;
 26. SELECT * FROM E_TRANSACTIONS WHERE COST<5000 ORDER BY COST ASC;
 27. SELECT ORDER_ID,SHIPPING_TIME FROM E_TRANSACTIONS WHERE ORDERED_TIME<'2021-06-30'
 ORDER BY COST ASC,ORDERED_TIME DESC;
 28. SELECT *
 FROM E_TRANSACTIONS
 WHERE (ORDERED_TIME >= '2021-02-01' AND ORDERED_TIME < '2021-03-01') OR
 (ORDERED_TIME >= '2021-07-01' AND ORDERED_TIME < '2021-08-01')
 ORDER BY COST ASC;

Documents:-C:\Users\n1606\Desktop\Rahim_CodingNinjas\MileStone-7\DBMS\10.Filtering and Sorting Data

11. Grouping Data[32Mcqs]

1. GROUP BY clause in SQL is used to group rows that have:-Same value in a particular column
 2. Which of the following SQL statements we can use to find the distinct elements in the table?GROUP BY & DISTINCT
-
3. SELECT GENDER FROM CUSTOMER GROUP BY GENDER;
 4. SELECT YEAR_OF_JOINING FROM EMPLOYEE WHERE YEAR_OF_JOINING>2010 GROUP BY YEAR_OF_JOINING;
 5. SELECT DEPT_ID FROM EMPLOYEE WHERE SALARY>50000 GROUP BY DEPT_ID;

MCQ - 3[Send Feedback](#)

Attempts left:

Which of the following aggregate function can be used along by GROUP BY clause?

Options

This problem may have one or more correct answers

 SUM()✓

 COUNT()✓

 UPPER()

 MIN()✓

 LOWER()

Hurra! Correct Answer

Solution Description

Functions that take multiple values as input, perform calculations on them, return a single value as output is known as aggregate functions. Aggregate functions are often used along with the GROUP BY clause to perform calculations. Most commonly used aggregate functions are:

6.**MCQ - 4**[Send Feedback](#)

Attempts left: 4

Select the correct statements about the below query:

```
SELECT deptid, SUM(salary )
FROM Employees
GROUP BY deptid;
```

Options

This problem has only one correct answer

 SUM is a group by aggregate function because it performs addition on a group of employees working in a particular department.

 SUM is an aggregate function because it produces multiple results for every employee in every department.

 SUM is a single row function because it returns a single value for a particular department.

 SUM is a group by extension function because it uses GROUP BY clause to logically group the departments to find average salary.

Hurra! Correct Answer

Solution Description

SUM is a group by aggregate function that calculates the sum of salaries of a group of employees working in a particular department. It provides a sum of values of a group in a table.

7.

Table: Product

| Col_name | Datatype |
|----------|-----------------------|
| p_ID | Integer (Primary Key) |
| name | varchar() |
| min_age | integer |

The Product relation contains information about all the toys sold by the store.

The Product.p_ID column is the primary key for the relation.

Product.name is the name of each toy, and Product.min_age indicates the minimum age recommended playing with the toy.

Which of the following query will count the total number of rows of toys for children of age 10 years.

8.

You have max 2 attempts to score in this question.

Attempts left: 4

Options

This problem has only one correct answer

 SELECT MIN(*) FROM PRODUCT WHERE min_age = 10;

 SELECT MAX(*) FROM PRODUCT WHERE min_age = 10;

 SELECT SUM(*) FROM PRODUCT WHERE min_age = 10;

 SELECT COUNT(*) FROM PRODUCT WHERE min_age = 10;

Hurra! Correct Answer

Solution Description

The query:
SELECT COUNT(*) FROM PRODUCT WHERE min_age = 10;
Will count the total number of entries in table where the minimum age is 10. The COUNT(*) function basically counts the entries in the table, that satisfy the given condition.
The other aggregate function are :

9.

9. **SELECT CITY,COUNT(*) AS CUST_NUM**

FROM CUSTOMER

GROUP BY CITY;

10. **SELECT ADDRESS, SUM(TOTALORDERSYET)**

FROM CUSTOMER
GROUP BY ADDRESS;

11. SELECT PINCODE,MAX(TOTALORDERSYET)
FROM CUSTOMER
GROUP BY PINCODE;

12. SELECT GENDER, MIN(TOTALORDERSYET)
FROM CUSTOMER
GROUP BY GENDER;

13. SELECT CITY, AVG(TOTALORDERSYET)
FROM CUSTOMER
GROUP BY CITY;

14. SELECT CITY, COUNT(*) AS NUMBER
FROM CUSTOMER
GROUP BY CITY
ORDER BY NUMBER DESC;

15. SELECT ADDRESS, COUNT(*) AS ADDRESS_TIMES
FROM CUSTOMER
WHERE CITY='Jalandhar'
GROUP BY ADDRESS;

16. SELECT Job, COUNT(*) AS empnum
FROM EMPLOYEE_DATA
GROUP BY JOB;

17. SELECT JOB,DEPTCODE, COUNT(*) AS NUMBER_OF_EMPLOYEES
FROM EMPLOYEE_DATA

GROUP BY JOB,DEPTCODE;

18. SELECT JOB, MAX(SALARY)

FROM EMPLOYEE_DATA

GROUP BY JOB;

19. SELECT JOB, DEPTCODE, AVG(SALARY)

FROM EMPLOYEE_DATA

GROUP BY JOB, DEPTCODE;

20. SELECT JOB, DEPTCODE, AVG(SALARY)

FROM EMPLOYEE_DATA

GROUP BY JOB, DEPTCODE;

21. SELECT DEPT_ID,COUNT(DISTINCT EMP_ID) AS EMP_NUM

FROM EMPLOYEE

GROUP BY DEPT_ID;

22. Which clause has the same function as the HAVING clause in SQL?where

MCQ - 7

[Send Feedback](#)

Guess the output of the following query.

```
SELECT COUNT(*)  
FROM products_table  
WHERE product_quantity > 5;
```

Options

This problem has only one correct answer

Attempts left: 0/2

The query will give error.

It will return all the rows from products_table, having product quantity greater than 5.

It will return the product_quantity column from products_table that are having quantity greater than 5.

It will return the total number of rows in products_table with product quantity greater than 5.

 Huray! Correct Answer

Solution Description

COUNT(*) is used to count the number of rows that satisfies the given condition mentioned in the query. Hence, the query will count the number of rows with product_quantity > 5, and display the number in column name COUNT(*) .

23.

MCQ - 8[Send Feedback](#)

Attempts left

Examine the table structure as given.

employees:

| emp_id | emp_name | dept_id | salary | gender |
|--------|----------|---------|--------|--------|
|--------|----------|---------|--------|--------|

Which of the below query will give the department ID who have more than 6 employees working in it?

Options

This problem has only one correct answer

- SELECT dept_id FROM employees WHERE COUNT(*) > 6 GROUP BY dept_id;
 - SELECT dept_id FROM employees HAVING COUNT(*) < 9;
 - SELECT dept_id FROM employees GROUP BY emp_id HAVING SUM(*) < 9;
 - SELECT dept_id FROM employees GROUP BY dept_id HAVING COUNT(*) > 6;
- Hurray! Correct Answer

Solution Description

The output query should consist of a single column of department id grouped by department id in which the total number of employees in the department is greater than 6.

24.**MCQ - 9**[Send Feedback](#)

Attempts left: 02

Predict the outcome of the below query.

employees:

| emp_id | emp_name | dept_id | salary | gender |
|--------|----------|---------|--------|--------|
|--------|----------|---------|--------|--------|

SELECT dept_id, avg(salary)

FROM employees

HAVING avg(salary) > min(salary)

GROUP BY dept_id;

Options

This problem has only one correct answer

- It will throw an error because the aggregate functions used in the HAVING clause must be after the SELECT clause.
 - It will throw an error because the HAVING clause appears before the GROUP BY clause.
 - It will execute successfully and display the departments whose average salary is greater than the minimum salary of the department.
 - It will execute successfully and display the departments whose average salary is greater than the minimum salary of the organization.
- Hurray! Correct Answer

Solution Description

HAVING clause must be used after the GROUP BY clause. This is because the HAVING clause is used to filter the record from the groups based on the specified condition.

25.**MCQ - 10**[Send Feedback](#)

Attempts left: 1/2

Predict the outcome of the below query

SELECT dept_id, COUNT(name)

FROM Employee

WHERE job IN ('SALESMAN', 'MANAGER')

GROUP BY dept_id

HAVING AVG(salary) BETWEEN 1000 AND 4000;

Options

This problem has only one correct answer

- It will return an error because the AVERAGE function cannot be used in the HAVING clause.
 - It will return an error because HAVING and COUNT clauses cannot be used in the same SQL query
 - It will return an error because HAVING and WHERE clauses cannot be used in the same SELECT statement.
 - It will execute successfully.
- Hurray! Correct Answer

Solution Description

This query will execute successfully. The output will consist of two columns one displays department id and the other will display the count of employees in a specific department whose job is SALESMAN or MANAGER and the average salary of the department is between 1000 and 4000. The WHERE clause help to restrict the number of rows participating in group clause processing.

26.**27. SELECT ADDRESS,CITY,PINCODE**

FROM CUSTOMER

GROUP BY ADDRESS,CITY,PINCODE

HAVING COUNT(*) > 2;

28. SELECT

ADDRESS

FROM
CUSTOMER
WHERE
CITY = 'Guwahati'
GROUP BY
ADDRESS
HAVING
SUM(TOTALORDERSYET) > 7;

29. SELECT

JOB
FROM
EMPLOYEE_DATA
GROUP BY
JOB
HAVING
AVG(SALARY) > 3000;

30. SELECT

DEPTCODE
FROM
EMPLOYEE_DATA
GROUP BY
DEPTCODE
HAVING
SUM(SALARY) > 5000

ORDER BY

MIN(SALARY) ASC;

Problem Result

Managers
[Send Feedback](#)

You have been provided with the employee_data table. The sample for this table is provided below.

| | EmpCode | EmpName | EmplName | Job | Manager | HireDate | Salary | DeptCode |
|---|---------|---------|----------|-------------------|---------|------------|--------|----------|
| 1 | 9369 | TONY | STARK | SOFTWARE ENGINEER | 2902 | 1989-12-17 | 2800 | 20 |
| 2 | 9499 | TIM | ADOLF | SALESMAN | 7098 | 1981-02-20 | 1600 | 30 |
| 3 | 9566 | KIM | JAMES | MANAGER | 7039 | 1981-04-02 | 3570 | 20 |
| 4 | 9654 | SAM | MILES | SALESMAN | 7098 | 1981-09-28 | 1250 | 30 |
| 5 | 9782 | KEVIN | HILL | MANAGER | 7039 | 1981-06-09 | 2940 | 10 |

Problem Statement

List down the managers handling more than 2 employees, and make sure those employees don't belong to departments 10 and 20.

```
1 SELECT
2     MANAGER,
3     COUNT(*) AS 'Number of Employees'
4 FROM
5     EMPLOYEE_DATA
6 WHERE
7     MANAGER IS NOT NULL AND
8     DEPTCODE NOT IN ('10', '20')
9 GROUP BY
10    MANAGER
11 HAVING
12    COUNT(*) > 2;
```

31.

Problem Result

SQL query - 22
[Send Feedback](#)

Problem Statement:
For All the Analyst jobs list down the maximum salaries offered to them in different departments and under different managers, list all the details in ascending order based on the combined salary given out by that department.

Information about the table:
Attributes list:

EmpCode :- Unique code for each employee.
EmpFName :- Employee's First Name.
EmplName :- Employee's Last Name.
Job:- Designation in the company..
Manager :- Manager of each employee.
HireDate-> The date when the employee was hired.
Salary-: Salary offered in USD per month.

| | DATA TYPES |
|---|------------|
| 1 | INT |
| 2 | VARCHAR |
| 3 | VARCHAR |
| 4 | VARCHAR |
| 5 | CHAR |
| 6 | DATE |
| 7 | INT |

```
1 SELECT
2     JOB,
3     DEPTCODE,
4     MANAGER,
5     MAX(SALARY)
6 FROM
7     EMPLOYEE_DATA
8
9 WHERE
10    JOB = 'ANALYST'
11 GROUP BY
12    JOB,
13    DEPTCODE,
14    MANAGER
15 ORDER BY
16    SUM(SALARY) ASC;
```

32.

Documents:-C:\Users\h1606\Desktop\Rahim_CodingNinjas\MileStone-7\DBMS\11.Grouping Data

12. Queries with tables and constraints[13 Mcqs]

1. CREATE TABLE People(PID INT,LastName VARCHAR(255),FirstName VARCHAR(255),Address VARCHAR(255),CITY VARCHAR(255));

```
SELECT table_name,column_name,data_type  
FROM information_schema.columns  
WHERE table_name = 'People'  
ORDER BY column_name;
```

Problem Result

SQL Query -2

[Send Feedback](#)

Problem Statement :
Write a query for creating a table named **Patients**, which contains the attribute given in the table below:

Print the Table Schema once created as follows:

```
SELECT table_name, column_name, data_type  
FROM information_schema.columns  
WHERE table_name = 'your_table'  
ORDER BY column_name;
```

```
1 CREATE TABLE Patients(  
2     Patient_id INT PRIMARY KEY,  
3     Patient_title CHAR(50) NOT NULL,  
4     Patient_name CHAR(50) NOT NULL,  
5     admit_date DATE  
6 );  
7  
8 SELECT table_name, column_name, data_type  
9 FROM information_schema.columns  
10 WHERE table_name = 'Patients'  
11 ORDER BY column_name;
```

2.

Problem Result

SQL Query - 3

[Send Feedback](#)

Problem Statement:

Write multiple queries to create two tables named customer and contacts:

```
1 CREATE TABLE Patients(
2     Patient_id INT PRIMARY KEY,
3     Patient_title CHAR(50) NOT NULL,
4     Patient_name CHAR(50) NOT NULL,
5     admit_date DATE
6 );
7
8 SELECT table_name, column_name, data_type
9 FROM information_schema.columns
10 WHERE table_name = 'Patients'
11 ORDER BY column_name;
```

3.

4. Which of the following can accept NULL values?:Unique Key

MCQ - 2

[Send Feedback](#)

Which of the following is not a Key in MySQL?

Options

This problem has only one correct answer

Primary

Secondary

Alternate

Foreign

 Hurray! Correct Answer

5.

6.

Problem Result

MCQ - 3

[Send Feedback](#)

Which of the following statements regarding Foreign Key is Incorrect.

Statement - 1 : Foreign key is used to link two tables together.

Statement - 2 : Foreign key allows inserting NULL values.

Statement - 3 : Foreign key doesn't allow inserting NULL values.

Statement - 4 : Foreign key uniquely identifies tuples of a relation.

Options Attempts left: 0/2

This problem has only one correct answer

3 & 4

2 & 4

2, 3 & 4

1, 3 & 4

Hurray! Correct Answer

Solution Description

The foreign key is used to link two tables, via adjoining common column. The foreign key is the primary key of another table, and it is possible to have more than one foreign key in a particular table. Though NULL values are not allowed in the case of the primary key, it is allowed in the case of the foreign key. The Primary key uniquely identifies tuples of a relation. If there is another key uniquely identifying the tuples of relation, than that key will be called the Candidate key.

7.

Problem Result

SQL Query - 4

[Send Feedback](#)

Problem Statement:
Consider the tables given below:

1. The table **users** contains features like *id*, *full_name*, *enabled*, *last_login*. The attribute *id* here will be the *primary key*.

Attribute List(s):

| Attribute | Datatype |
|-------------------|-------------------|
| <i>id</i> | INT (Primary Key) |
| <i>full_name</i> | VARCHAR |
| <i>enabled</i> | CHAR |
| <i>last_login</i> | DATE |

```

1 CREATE TABLE users (
2   id INT PRIMARY KEY,
3   full_name VARCHAR(255) NOT NULL,
4   enabled CHAR(100) NOT NULL,
5   last_login DATE
6 );
7
8 SELECT table_name,column_name,data_type
9 FROM information_schema.columns
10 WHERE table_name='users';
11
12 CREATE TABLE addresses (
13   user_id INT PRIMARY KEY,
14   street VARCHAR(255) NOT NULL,
15   city VARCHAR(255) NOT NULL,
16   state VARCHAR(255) NOT NULL,
17   FOREIGN KEY (user_id) REFERENCES users (id)
18 );
19
20 SELECT table_name,column_name,data_type
21 FROM information_schema.columns
22 WHERE table_name='addresses';
23
24
25
26

```

Console

Problem
Result

SQL Query - 5

[Send Feedback](#)

Problem Statement:
Consider the tables given below and formulate a SQL query to create these tables with all the constraints.

- The table **books** contain features like *id*, *title*, *author*, *published_date*, *isbn*. The *id* should be declared as *PRIMARY KEY*. The *isbn* should be declared *UNIQUE*. The attributes *title*, *author* and *publish_date* should be declared *NOT NULL*.

| Attribute | Data type |
|-----------|-------------------|
| id | INT (PRIMARY KEY) |
| title | VARCHAR (100) |
| author | VARCHAR (100) |

8.

Problem
Result

SQL Query - 6

[Send Feedback](#)

Problem Statement :
Given a table named **members**, write a query to add a column named cc_number (Datatype - VARCHAR).
Note : Print the Table Schema once created as follows:

```

SELECT table_name, column_name, data_type
FROM information_schema.columns
WHERE table_name = 'your_table'
ORDER BY column_name;

```

9.

Problem
Result

```

1 CREATE TABLE books (
2     id INT PRIMARY KEY,
3     title VARCHAR(100) NOT NULL,
4     author VARCHAR(100) NOT NULL,
5     published_date TIMESTAMP NOT NULL,
6     isbn CHAR(12) UNIQUE
7 );
8
9 SELECT table_name, column_name, data_type
10 FROM information_schema.columns
11 WHERE table_name = 'books';
12
13 CREATE TABLE reviews (
14     id INT PRIMARY KEY,
15     book_id INT NOT NULL,
16     reviewer_name VARCHAR(255) NOT NULL,
17     content VARCHAR(255) NOT NULL,
18     rating INT,
19     published_date TIMESTAMP,
20     FOREIGN KEY (id) REFERENCES books(id)
21 );
22
23 SELECT table_name, column_name, data_type
24 FROM information_schema.columns
25 WHERE table_name = 'reviews';

```

```

1 ALTER TABLE members ADD cc_number VARCHAR(100) ;
2
3
4
5
6
7

```

| Problem | Result | | | | | | | | | | | | |
|--|--|-----------|-----------|-----------|-------------------|-----------|--------------|--------|-----|------------|---------------|----------|---------------|
| SQL Query - 7 Send Feedback | <pre>1 ALTER TABLE Bank CHANGE COLUMN person_id Pid VARCHAR(50); 2 DESC Bank;</pre> | | | | | | | | | | | | |
| Problem Statement : Given a table named Bank, write a query to change the existing column person_id to Pid VARCHAR(50). table Bank | | | | | | | | | | | | | |
| 10. | <table border="1"><thead><tr><th>Attribute</th><th>Data type</th></tr></thead><tbody><tr><td>person_id</td><td>INT (Primary Key)</td></tr><tr><td>full_name</td><td>VARCHAR (30)</td></tr><tr><td>acc_no</td><td>INT</td></tr><tr><td>last_trans</td><td>VARCHAR (200)</td></tr><tr><td>phone_no</td><td>VARCHAR (200)</td></tr></tbody></table> | Attribute | Data type | person_id | INT (Primary Key) | full_name | VARCHAR (30) | acc_no | INT | last_trans | VARCHAR (200) | phone_no | VARCHAR (200) |
| Attribute | Data type | | | | | | | | | | | | |
| person_id | INT (Primary Key) | | | | | | | | | | | | |
| full_name | VARCHAR (30) | | | | | | | | | | | | |
| acc_no | INT | | | | | | | | | | | | |
| last_trans | VARCHAR (200) | | | | | | | | | | | | |
| phone_no | VARCHAR (200) | | | | | | | | | | | | |
| Problem | Result | | | | | | | | | | | | |
| SQL Query - 8 Send Feedback | <pre>1 ALTER TABLE members DROP COLUMN member_dob; 2 3 4 5 6 SELECT table_name, column_name, data_type FROM information_schema.columns WHERE table_name = 'members' ORDER BY column_name;</pre> | | | | | | | | | | | | |
| Problem Statement : Given a table named members, write a query to remove a column named member_dob. Print the Table Schema once created as follows: | | | | | | | | | | | | | |
| <pre>SELECT table_name, column_name, data_type FROM information_schema.columns WHERE table_name = 'your_table' ORDER BY column_name;</pre> | | | | | | | | | | | | | |

| Problem | Result |
|---|--|
| <p>SQL Query - 9</p> <p>Send Feedback</p> <p>Problem Statement :</p> <p>Write a query to rename the Table consumers to Consumer_Data.</p> <p>Print the Table Schema once created as follows:</p> <pre>SELECT table_name, column_name, data_type FROM information_schema.columns WHERE table_name = 'your_table' ORDER BY column_name;</pre> | <pre>1 ALTER TABLE consumers RENAME TO Consumer_Data; 2 3 SELECT table_name, column_name, data_type 4 FROM information_schema.columns 5 WHERE table_name = 'Consumer_Data' 6 ORDER BY column_name;</pre> |

12.

Problem

Result

SQL Query - 10

[Send Feedback](#)

Problem Statement :
Write a SQL query to remove the attribute 'last_login' and rename the 'full_name' to 'customer_name' in the customer table.

Table **customer**

| Attribute | Data type |
|---------------|------------------------|
| customer_id | INT(11) AUTO_INCREMENT |
| customer_name | VARCHAR(30) |
| email | VARCHAR(50) |
| password | VARCHAR(100) |
| phone | INT(10) |
| address | VARCHAR(100) |
| city | VARCHAR(50) |
| state | VARCHAR(50) |
| zip_code | INT(10) |
| country | VARCHAR(50) |
| last_login | DATE |

```
1 ALTER TABLE customer
2 DROP COLUMN last_login;
3
4 ALTER TABLE customer
5 CHANGE COLUMN full_name customer_name VARCHAR(30);
6
7 DESC customer;
```

13.

14. Documents:-C:\Users\n1606\Desktop\Rahim_CodingNinjas\MileStone-7\DBMS\12.Queries with Tables and Constraints

13. Modifying Data[21 Mcqs]

1.

Problem Result

SQL Query - 1

[Send Feedback](#)

Problem statement :
Formulate a query to add records to table tutorials.

| Attribute | Data type | Value to be added |
|----------------|-----------|-------------------|
| tutorial_title | VARCHAR | "Learn MySQL" |

```
1 INSERT INTO tutorials(tutorial_title, tutorial_author ,submission_date)
2 VALUES("Learn MySQL", "Balachandra Raju", "01-09-2021");
3
4 SELECT * FROM tutorials;
5
```

2.

Problem Result

SQL Query - 2

[Send Feedback](#)

Problem Statement
Formulate a query to add a record, where you only fill in columns Roll_no, std_name, Age with the given data:

```
1 INSERT INTO Students (Roll_no, std_name, Age)
2 VALUES (7, 'Shantnu', 21);
3
4 SELECT * FROM Students;
```

3.

Problem Result

SQL Query - 3

[Send Feedback](#)

Problem Statement
Formulate queries to insert multiple rows into the table **BankAccount**: with the following values:

| Id | Name | cash_balance | Age |
|----|-------|--------------|-----|
| 1 | Ayush | 500 | 21 |
| 2 | - | 1000 | 18 |

```
1 INSERT INTO BankAccount (Id, Name, cash_balance, Age)
2 VALUES
3 (1,'Ayush',500,21),
4 (2, NULL,1000,18),
5 (4,'Muthu',NULL,25);
6
7 SELECT * FROM BankAccount;
```

Problem
Result

SQL Query - 4

[Send Feedback](#)

Problem Statement
 Write Queries to:
 1. Update the Age of Id 2 to 18.
 2. Update the cash_balance of Muthu to 2000.
 Note: These two are separate queries.

Information about the table
 Table BankAccount:

| Id | Name | cash_balance | Age |
|----|------|--------------|-----|
| | | | |

4. MCQ - 1

[Send Feedback](#)

Which of the following is the most efficient way to update the current value of "Semester" attribute by 1, for all the rows of the table 'Student':

Options Attempts left: 1/2

- Write 'n' update commands, if 'n' number of rows are present in the table.
- Instead of updating, insert all the records again in the table.
- Update Student SET Semester= Semester + 1;
- We cannot update all the rows at once.

Huray! Correct Answer

Solution Description
 We definitely can update all rows at once. This is possible as we have not used any WHERE condition to limit the rows on which we would like to perform UPDATE operation . For example in this case for all the rows of the Student table, the Semester column would get updated by 1.

MCQ - 2

[Send Feedback](#)

Attempts left: 12

A University has following dataset:

| Id | Name | Age |
|----|----------|-----|
| 1 | Lawrence | 21 |
| 2 | Aniket | 18 |
| 3 | Carla | 25 |

The dataset was last updated 1 year ago , which means the age of every person in the dataset is 1 year older now. Choose the most appropriate option to Update the dataset accordingly to store the correct age of every person.

Options

This problem has only one correct answer

- UPDATE * in University Age=Age+1;
- UPDATE University SET Age = Age+1;
- UPDATE University SET ALL Age=Age+1;
- We cannot update all the rows at once.

 **Hurray! Correct Answer**

Solution Description

In this question, we need to update the age of every person by one. So we can use the UPDATE query on the Database University and increase every element in the AGE column by one, hence we can do- UPDATE University SET Age = AGE +1.

6.

Problem

Result

SQL Query - 5

[Send Feedback](#)

Problem Statement:

Given a table named **stud_data**, formulate a query to change the **Fname and Age** of the already entered record to (**Neelabh, 22**) of **roll number 17**.

Information about the table

Table **stud_data** :

7.

```
1 UPDATE stud_data
2 SET Fname='Neelabh',Age='22'
3 WHERE roll_no=17;
4
5 SELECT * FROM stud_data;
```

Problem Result

SQL Query - 6 (Part -1)

[Send Feedback](#)

Problem Statement
Formulate a query to update the table accordingly and show the updated table.

As the company is celebrating its 5th anniversary, the company is updating the salaries of all people with positions "SDE" and "CA" to 150000.

Information about the table
Table Employee:

```
1 UPDATE Employee
2 SET salary=150000
3 WHERE position="SDE";
4
5 UPDATE Employee
6 SET salary=150000
7 WHERE position="CA";
8
9 SELECT *FROM Employee;
```

8.

Problem Result

SQL Query - 6 (Part -2)

[Send Feedback](#)

Problem Statement
Formulate a query to update the table accordingly and show the updated table.

The company has also decided to increase the current salary by 10000 for people with age 18,21 and 65.

Information about the table
Table Employee:

| id | name | age | gender | salary | position |
|----|---------|-----|--------|--------|---------------|
| 1 | Ryan | 21 | M | 100000 | SDE |
| 2 | Jessica | 28 | F | 242200 | HRD_Marketing |

```
1 UPDATE Employee
2 SET salary=salary+10000
3 WHERE age IN (18,21,65);
4
5 -- UPDATE Employee
6 -- SET salary=10000
7 -- WHERE age="21";
8
9 -- UPDATE Employee
10 -- SET salary=10000
11 -- WHERE age="65";
12
13 SELECT * FROM Employee;
```

9.

Problem Result

SQL Query - 7

[Send Feedback](#)

Problem Statement:
All those bank branches which are in Delhi and Bangalore are shifted to Noida due to its increasing popularity so update the branch accordingly.

Information about the table:
Table Bank :

| id | Name | branch | CustomerBase |
|----|-------|-----------|--------------|
| 1 | HCBC | Hyderabad | 100000 |
| 2 | GDFS | Bangalore | 150000 |
| 3 | ZCZCQ | Delhi | 250000 |

```
1 UPDATE Bank
2 SET branch='Noida'
3 WHERE branch IN ('Delhi', 'Bangalore');
4
5 SELECT * FROM Bank;
```

10.

Problem Result

SQL Query - 8

[Send Feedback](#)

Problem Statement:
Consider a table named products, formulate a query deleting the record where product_id = 596 or 700.

Information about the table:
Table products :

| product_id | pname | p_mfd |
|------------|---------|------------|
| 345 | oneplus | 2021-01-01 |
| 596 | iphone | 2021-07-22 |
| 132 | MI | 2021-03-09 |
| 482 | vivo | 2021-09-01 |
| 700 | oppo | 2021-04-14 |

```
1 DELETE FROM products WHERE product_id IN (596,700);
2
3
4
5 SELECT * FROM products;
```

11.

12.

SQL Query - 9

[Send Feedback](#)

Problem Statement:
Someone has mistakenly added the wrong data in the table as the data only for people above Age 20 was needed. You have to remove the data of all such people whose age is less than equal to 20 years.

Information about the table:
Table stud_data:

| roll_no | Fname | Age |
|---------|-------|-----|
| 17 | Rishi | 23 |

```
1 DELETE FROM stud_data WHERE Age<=20;
2
3 SELECT * FROM stud_data;
```


13.

SQL Query - 10

[Send Feedback](#)

Problem Statement :
It's a time of recession so a new startup company has to cut down on its employee base to reduce its expenses and it has decided to remove all those employees whose name contains "an" in their name and have salary more than 100000, so update the database accordingly.

Information about the table

```
1 DELETE FROM Employee WHERE name like '%an%' and salary>100000;
2
3 SELECT * FROM Employee;
```


MCQ - 3

[Send Feedback](#)

There are two tables Employee and Payment. The id of the Employee Table acts as a foreign key for the Payment Table.

Refer the tables given below:

Employee Table:

| id | Name | gender | hire_date |
|-----|--------|--------|------------|
| 101 | Bryan | M | 2015-08-26 |
| 102 | Joseph | M | 2014-10-21 |
| 103 | Mike | M | 2017-10-28 |
| 104 | Daren | M | 2006-11-01 |
| 105 | Marie | F | 2018-10-12 |

Payment Table:

| payment_id | id | amount | payment_date |
|------------|----|--------|--------------|
|------------|----|--------|--------------|

Options
This problem has only one correct answer

- We cannot update the id of the employee
- We should update the correct value of id in the employee table only
- We should make sure that if we are updating the correct value of id in the Employee table, it should also get updated in another table
- None of the above is correct

Hurray! Correct Answer

Solution Description
We can update the current_id of employees from 103 to 100 because the current_id of value 100 is not present in the database. current_id is a primary key so its value should be unique. If current_id = 100 consist before, then it is not possible to update but this is not the issue here.
We should update the correct value of current_id in the employee as well as the payment table. We should make sure that if we are updating the correct value of id in the Employee table, it should also get updated in the Payment table so that the data remains consistent.

15.

True/False - 1[Send Feedback](#)

Attempts left: 0/2

In the Delete cascade , deleting a row from the parent table will automatically delete the matching row from the child table.

Options

This problem has only one correct answer

 True False Hurray! Correct Answer**Solution Description**

When we use delete cascade on the parent table, it will delete that particular row or column from all over the database. So it will result in deletion of the matching row or column in the child database as the child table is linked with the parent's table.

16.

MCQ - 5[Send Feedback](#)

Attempts left: 0/2

There are two tables: Employee and Payment. Current Structure for both is as follows:

```
CREATE TABLE Employee (
    id int(10) NOT NULL,
    Name varchar(40) NOT NULL,
    gender varchar(10) NOT NULL,
    hire_date date NOT NULL,
    PRIMARY KEY (id);
```

```
CREATE TABLE Payment (
    payment_id int(10) PRIMARY KEY NOT NULL,
    id int(10) NOT NULL,
    amount INT NOT NULL,
    payment_date date NOT NULL,
    );
```

Now if we want to apply a feature such that deleting / updating in one table also affects the other table . Which of the following statements should be added to the Payment table to cause such an effect?

You have max 2 attempts to score in this question.**Options**

This problem has only one correct answer

 FOREIGN KEY (id) REFERENCES Employee (id) ON DELETE CASCADE , ON UPDATE CASCADE ; PRIMARY KEY (payment_id) REFERENCES Employee (id) ON DELETE CASCADE; FOREIGN KEY (id) REFERENCES Employee (id) ON DELETE CASCADE ON UPDATE CASCADE No change is required in the payment table. Hurray! Correct Answer**Solution Description**

The primary key is a field or a collection of fields in a table whose value is unique for every row in the table. This value cannot be NULL. Foreign Key is a field or a collection of fields in a table that makes a reference to the primary key of another table. The foreign key is used to create links between tables. In the following tables, the Foreign Key (id) of the payments table will reference the Primary key (id) of Employee tables for the Operation like UPDATE, DELETE, etc. This is the only link between the two tables. No link other than this can be created.

17.

Options

Attempts left: 0/2

This problem may have one or more correct answers

- Replace works as Insert command if duplicate data is not found in the table.✓
- Replace can act as Insert command as well as update command under specific conditions.✓
- If a matching value is already found in the table then Replace doesn't do anything.
- None of the above.

The solution to this problem has been viewed

18.

Problem Result

MCQ - 6

[Send Feedback](#)

Choose the correct statement:

This problem has only one correct answer

If the row which we want to replace is not present , replace will not do anything but update will add a new row.

Update delete the old data and then add new data while replace always makes changes in current data.

If the row is not present, replace will add a new row and update will not do anything.

Replace is faster than update because it always adds new data instead of making changes in existing one.

Hurra! Correct Answer

Solution Description

REPLACE adds new rows if they don't exist and updates old rows in case they already existed.

UPDATE make changes in existing rows.

Hence , A is not correct as Replace will insert the row and update will not do anything if row is not present.

B is not correct as Update makes changes in existing data while replace makes changes according to row presence or absence.

D is not correct as Update is faster because replace have to add new data while update have to make changes in current one.

19.

Problem Result

SQL Query - 11

[Send Feedback](#)

Problem Statement :

Data for id 103 has been incorrectly entered. As a school Data manager, you have to correct this data with the correct student name and admission data.

```
1 REPLACE INTO Student(id,Name,gender,admission_date)
2 VALUES(103, 'Lawrence', 'M', '2008-11-27');
3
4
5
6
7 SELECT * FROM Student;
```

20.

Problem Result

SQL Query - 12

[Send Feedback](#)

Problem Statement

Due to multiple issues due to the wrong data insertion of a person with id 305, the company needs to replace the data with its correct information. Formulate a query for the same.

```
1 REPLACE INTO Insurance(insurance_id,Name,insurance_amount,premium_date)
2 VALUES(305, 'Kev', 1750000, '2014-09-08');
3
4
5
6
7 SELECT * FROM Insurance
```

21.

Problem Result

SQL Query - 13

[Send Feedback](#)

Problem Statement

Given the table cities, form a query using REPLACE, to update/add the given data:

```
1 REPLACE INTO cities (id, cname, population) VALUES (4, 'Phoenix', 1768980);
2
3 SELECT * FROM cities;
```

Documents:-C:\Users\h1606\Desktop\Rahim_CodingNinjas\MileStone-7\DBMS\13.Modifying Data

14. Managing Database[5 Mcqs]

MCQ - 1

[Send Feedback](#)

Choose the query which should be used to create a Database while also being careful of duplication.

Options

This problem has only one correct answer

- CREATE DATABASE Market;
- CREATE DATABASE IF NOT EXISTS Market;
- CREATE DATABASE UNIQUE Market;
- CREATE DATABASE IF EXISTS Market;

 Hurray! Correct Answer

1.

2. Which DDL command is used to permanently delete the database.:DROP
3. What does The DROP DATABASE statement return?Total no of tables deleted

MCQ - 4

[Send Feedback](#)

Which of the following is the correct syntax of Dropping Database?

Options

Atte

This problem has only one correct answer

- DROP <database-name>;
- DROP DATABASE IF NOT EXISTS <database-name>;
- DROP DATABASE <database-name>;
- DROP DATABASE;

 Hurray! Correct Answer

4.

MCQ - 5

[Send Feedback](#)

Select the correct statement:

Statement 1: We can directly switch between databases by USE keyword.

Statement 2: The following query displays the list of all the Databases.

SHOW DATABASE;

Statement 3: The following query only removes particular database, but not tables in it.

DROP DATABASE <database-name>;

Statement 4: It is not possible to create 2 databases with same name.

5.

Attempts left:

Options

This problem may have one or more correct answers

1 ✓

2

3

4 ✓

Hurray! Correct Answer

Solution Description

1. Statement-1 is correct.
2. The correct query in Statement-2 should be- SHOW DATABASES;
3. The query in Statement-3 removes the database as well as the existing tables in it.
4. Statement-4 is correct.

Documents:-C:\Users\n1606\Desktop\Rahim_CodingNinjas\MileStone-7\DBMS\14.Manging Database

15. Joining Tables[24 Mcqs]

MCQ - 1

[Send Feedback](#)

Which of the following conditions has to be satisfied for INNER JOIN to work?

1.

Options

This problem has only one correct answer

The column joining the two tables must have same names.

The column joining the two tables must have different names.

The column joining the two tables can have same or different names.

The column joining the two tables must be referred by Alias name.

The solution to this problem has been viewed

Attempts left:

Solution Description

The adjoining column between the two tables can have the same or different names. It is also not compulsory to refer to the column names with ALIAS names.

MCQ - 2

[Send Feedback](#)

The following query is equivalent to:

```
SELECT * FROM Table_A JOIN Table_B  
USING(Column_Name);
```

Options

This problem has only one correct answer

- SELECT * FROM Table_A INNER JOIN Table_B USING (Column);
- SELECT * FROM Table_A OUTER JOIN Table_B USING (Column);
- SELECT * FROM Table_A LEFT OUTER JOIN Table_B USING (Column);
- None of the above.

 **Hurray! Correct Answer**

Solution Description

The normal JOIN is equivalent to INNER JOIN.

2.

SQL Query - 1

[Send Feedback](#)

Problem Statement:

Enlist all the employees ID's, names along with the Project allocated to them.

Information about the table:

Table Employee:

| EmpID | EmpFname | EmpLname | Age | EmailID | PhoneNo | City |
|-------|----------|----------|-----|--------------|----------|-------|
| 1 | Riya | Khanna | 21 | riya@abc.com | 98765443 | Delhi |

```
4 -- ON e.id=p.id;  
5  
6  
7 SELECT e.EmpID, e.EmpFname,e.EmpLname,p.ProjectID, p.ProjectName  
8 FROM Employee e  
9 INNER JOIN Project p  
10 ON e.EmpID = p.EmpID  
11
```

3.

SQL Query - 2

[Send Feedback](#)

Problem Statement:

Fetch out all the employee ID's and their contact detail who have been working from Delhi or have clients in Kolkata.

Information about the table:

Table Employee:

| EmpID | EmpFname | EmpLname | Age | EmailID | PhoneNo | City |
|-------|----------|----------|-----|---------------|-----------|--------|
| 1 | Riya | Khanna | 21 | riya@abc.com | 98765443 | Delhi |
| 2 | Sahil | Kumar | 32 | sahil@abc.com | 987657643 | Mumbai |

```
1 SELECT e.EmpID,e.EmailID,e.PhoneNo,c.ClientFname, c.ClientLname  
2 FROM Employee e  
3 INNER JOIN Client_d c  
4 ON e.EmpID=c.EmpID  
5 WHERE e.City IN ('Delhi','Kolkata');  
6  
7 -- SELECT e.EmpID,e.EmailID,e.PhoneNo,c.ClientFname, c.ClientLname  
8 -- FROM Employee e  
9 -- -- INNER JOIN Project p ON e.EmpID = p.EmpID  
10 -- INNER JOIN Client_d c  
11 -- ON e.EmpID = c.ClientID  
12 -- WHERE c.City = 'Delhi' OR c.City = 'Kolkata'
```

4.

5.

Problem
Result

SQL Query - 3

[Send Feedback](#)

Problem Statement:
List out all the project names with corresponding client's email id, for all the projects that were allocated after April 2021 and order them in descending order of the age of clients.

Information about the table:
Table Employee:

| EmpID | EmpName | EmpLname | Age | EmailID | PhoneNo | City |
|-------|---------|----------|-----|---------------|----------|--------|
| 1 | Riya | Khanna | 21 | riya@abc.com | 98765543 | Delhi |
| 2 | Sahil | Khanna | 23 | sahil@abc.com | 98765789 | Mumbai |

```

1 SELECT p.ProjectName, c.ClientEmailID
2 FROM Project p
3 INNER JOIN Client_d c
4 ON p.ClientID = c.ClientID
5 WHERE p.ProjectStartDate >= '2021-04-30'
6 ORDER BY c.Age DESC;

```

6.

Problem
Result

SQL Query - 4

[Send Feedback](#)

Problem Statement:
Write an SQL query to inner join all the three table(Supplier, SP and Product) and print all the elements of the table. The tables should be joined in the same order as stated above.

Information about the table:
Table Product:

| Pno | Pname | Colour | Weight |
|-----|-------|--------|--------|
|-----|-------|--------|--------|

Problem
Result

SQL Query - 5

[Send Feedback](#)

Problem Statement:
Write a SQL query to find the name, colour and quantity of the product supplied by sahil. The tables (Supplier, SP and Product) should be joined in the same order as stated above.

Information about the table:
Table Product:

| Pno | Pname | Colour | Weight |
|-----|-------|--------|--------|
|-----|-------|--------|--------|

```

1 SELECT p.Pname, p.Colour, sp.Qty
2 FROM Product p
3 INNER JOIN SP sp ON p.Pno= sp.Pno
4 INNER JOIN Supplier s ON sp.Sno = s.Sno
5 WHERE s.Sname = 'sahil'

```

8.

Problem
Result

SQL Query - 6

[Send Feedback](#)

Problem Statement:
Write an SQL query to find the number of products supplied by each colour.

Information about the table:
Table Product:

| Pno | Pname | Colour | Weight |
|-----|----------|--------|--------|
| 1 | pen | red | 5 |
| 2 | pencil | blue | 10 |
| 3 | sharpner | red | 3 |
| 4 | eraser | white | 6 |
| 5 | stapler | green | 10 |

```

1 SELECT p.Colour, COUNT(*) AS nop
2 FROM Product p
3 INNER JOIN SP sp ON p.Pno = sp.Pno
4 GROUP BY p.Colour

```


9.

Problem
Result

SQL Query - 7

[Send Feedback](#)

Problem Statement:
Write a SQL query to find the max quantity (Qty) supplied by each status. The tables (Supplier, SP and Product) should be joined in the same order as stated in bracket.
Note: Name the column with max quantity as 'm'

```

1 SELECT s.Status, MAX(sp.Qty) AS m
2 FROM Supplier s
3 INNER JOIN SP sp ON s.Sno = sp.Sno
4 GROUP BY s.Status

```


10.

Result

```

1 SELECT s.Sname, p.Pname, s.Status
2 FROM Supplier s
3 INNER JOIN SP sp ON s.Sno = sp.Sno
4 INNER JOIN Product p ON sp.Pno = p.Pno
5 ORDER BY sp.Qty ASC

```

11.

Problem
Result

SQL Query - 9

[Send Feedback](#)

Problem Statement:
Fetch out each project allocated to which employee.

Information about the table:

Table Employee:

| EmpID | EmpFname | EmplName | Age | EmailID | PhoneNo | City |
|-------|----------|----------|-----|---------------|-----------|--------|
| 1 | Riya | Khanna | 21 | riya@abc.com | 987655443 | Delhi |
| 2 | Sahil | Kumar | 32 | sahil@abc.com | 987657643 | Mumbai |

```

1 SELECT e.EmpFname,e.EmpLname,p.ProjectID,p.ProjectName
2 FROM Employee e
3 LEFT JOIN Project p
4 ON e.EmpID=p.EmpID
5

```

12.

Problem
Result

SQL Query - 10

[Send Feedback](#)

Problem Statement:
Write a SQL statement to make a report with buyer name, buyer city, product ID, purchased date, and amount in ascending order of the purchased date to find that either any of the existing customers have purchased any product

```

1 SELECT b.bname,b.bcity,p.pid,p.pdate,p.amount
2 FROM Buyer AS b
3 LEFT JOIN Product AS p
4 ON b.bId=p.bId
5 ORDER BY p.pdate ASC;
6

```

13.

Problem
Result

SQL Query - 11

[Send Feedback](#)

Problem Statement:
Write a SQL query to find those buyers whose budget is less than 3000 (or even NULL). Display the Buyer name, city, budget and Seller's name & city. The result should be in ascending order of

```

1 SELECT b.bname,b.bcity,b.budget,s.sname,s.scity
2 FROM Buyer b
3 LEFT JOIN Seller s
4 ON b.bId=s.sId
5 WHERE b.budget < 3000
6 ORDER BY b.bId ASC;
7

```

14.

Problem
Result

SQL Query - 12

[Send Feedback](#)

Problem Statement:
Write a SQL query to make a report, with buyer name, buyer city, product number, purchased date, amount, seller name and profit to find that either any of the existing buyer have purchased any product or not, by their seller.

```

1 SELECT b.bname,b.bcity,p.pid,p.pdate,p.amount,s.sname,s.profit
2 FROM Buyer AS b
3 LEFT JOIN Product AS p
4 ON b.bid=p.bid
5 LEFT JOIN Seller AS s
6 ON p.sid=s.sid;
7

```

MCQ - 3[Send Feedback](#)

Which of the following statement(s) is/are correct?

Options

This problem may have one or more correct answers

- The query written using LEFT JOIN can be written by using RIGHT JOIN as well.
 - The query written using RIGHT JOIN cannot be written using LEFT JOIN.
 - The table name and column name are case sensitive.
 - The column data is case sensitive.
-  Hurray! Correct Answer

Solution Description

1. The query with left join can be written by using right join and vice-versa.
For example,

SELECT +

```
1 SELECT p.ProjectID, p.ProjectName, e.EmpFname, e.EmpLname, e.EmailID
2 FROM Employee e
3 RIGHT JOIN Project p ON p.EmpID = e.EmpID
4
5
```

15.

[Problem](#)[Result](#)**SQL Query- 13**[Send Feedback](#)**Problem Statement:**

List out all the projects along with the employee's name and their respective allocated email ID.

16.

Information about the table:

```
1 SELECT c.ClientID,c.ClientFname,c.ClientLname,c.ClientEmailID,p.ProjectID,p.ProjectName
2 FROM Client_d AS c
3 RIGHT JOIN Project AS p
4 ON c.ClientID=p.ClientID
5 WHERE c.Age BETWEEN '25' AND '35'
6 ORDER BY c.Age ASC;
```

17.

Information about the table:

```
1 -- asc s
2 SELECT b.bname,b.bcity,b.budget,s.sname,s.scity
3 FROM Buyer b
4 RIGHT JOIN Seller s
5 ON b.sid=s.sid
6 ORDER BY s.sid ASC;
```

18.

SQL Query - 15[Send Feedback](#)**Problem Statement:**

Write a SQL statement to make a list in ascending order for the sellers, display the buyer's name, city, budget, and seller's name & city.

Information about the table:**Table Buyer:**

| bid | bname | bcity | budget | sid |
|-----|-------|-------|--------|-----|
|-----|-------|-------|--------|-----|

Problem
Result

SQL query - 16

[Send Feedback](#)

Problem Statement:
19. Write a SQL query to list all sellers along with the

```

1 SELECT b.bname,b.bcity,b.budget,s.sname,p.pid,p.pdate,p.amount
2 FROM Buyer b
3 RIGHT JOIN Seller s
4 ON b.sid=s.sid
5 RIGHT JOIN Product p
6 ON p.bid=b.bid;
7

```

20. Relation A has 5 tuples and 8 attributes. Relation B has 10 tuples and 7 attributes. When a CROSS JOIN is achieved between A and B, how many tuples would the resultant set have? 5*10

Problem
Result

SQL Query - 17

[Send Feedback](#)

Problem Statement:
List out all the combinations possible for the employee's name and projects that can exist(NULL included).

Information about the table:
Table Employee:

| EmplID | EmpFname | EmplName | Age | EmailID | PhoneNo | City |
|--------|----------|----------|-----|--------------|------------|-------|
| 1 | Riva | Khanna | 21 | riva@abc.com | 9876543210 | Delhi |

```

1 SELECT e.EmpFname, e.EmpLname,p.ProjectID
2 FROM Employee e
3 CROSS JOIN Project p
4 -- ON e.EmpID=p.EmpID;

```

21.

Problem
Result

MCQ - 5

[Send Feedback](#)

Consider the following employees table:

| Attribute | Data type |
|---------------|--------------|
| employee_id | INT |
| name | VARCHAR (50) |
| department_id | INT |
| manager_id | INT |

You want to display all the employee names with their corresponding manager names. Along with that, all the manager names should be listed even if any employee is not allotted one. The SQL query for that will be:

Options

This problem has only one correct answer

Attempts left: 02

- SELECT a.name AS "Employee name", b.name AS "Manager name" FROM employees a INNER JOIN employees b ON a.manager_id = b.emp
- SELECT a.name AS "Employee name", b.name AS "Manager name" FROM employees a LEFT JOIN employees b ON a.manager_id = b.emp
- SELECT a.name AS "Employee name", b.name AS "Manager name" FROM employees a RIGHT JOIN employees b ON a.manager_id = b.emp
- SELECT a.name AS "Employee name", b.name AS "Manager name" FROM employees a LEFT JOIN employees b ON a.manager_id = b.emp

Solution Description

A full outer join includes all records from the table listed on both sides of the join, even if no match is found.

22.

Problem
Result

SQL Query - 18

[Send Feedback](#)

Problem Statement:
Write a SQL query to make a list with the buyer's name, buyer's city, product id, purchased date and the amount for only those buyers in the table who must have a budget.

Information about the table:
Table Buyer:

| bld | bname | bcity | budget | sld |
|-----|-------|-------|--------|-----|
|-----|-------|-------|--------|-----|

```

1 SELECT b.bname,b.bcity,p.pid,p.pdate,p.amount
2 FROM Buyer b
3 LEFT JOIN Product p
4 ON b.bid=p.bid
5 WHERE budget IS NOT NULL
6
7 UNION
8
9 SELECT b.bname,b.bcity,p.pid,p.pdate,p.amount
10 FROM Buyer b
11 RIGHT JOIN Product p
12 ON b.bid=p.bid
13 WHERE budget IS NOT NULL;

```

23.

Problem
Result

SQL query - 19

[Send Feedback](#)

Problem Statement:
Formulate a MySQL query to list out all the projects(id, name) and employee's names (first, last) along with their respective Email id's irrespective of the fact if that project is assigned or not and whether an employee is assigned any project or none.

Information about the table:
Table Employee:

```

1 SELECT p.ProjectID, p.ProjectName, e.EmpFname, e.EmpLname, e.EmailID
2 FROM Project p
3 LEFT JOIN Employee e
4 ON p.EmpID = e.EmpID
5
6 UNION
7
8 SELECT p.ProjectID, p.ProjectName, e.EmpFname, e.EmpLname, e.EmailID
9 FROM Project p
10 RIGHT JOIN Employee e
11 ON p.EmpID = e.EmpID;
12
13
14

```

24.

Documents:-C:\Users\n1606\Desktop\Rahim_CodingNinjas\MileStone-7\DBMS\15.Joining Tables

16. Set Operations[18Mcqs]

Problem
Result

MCQ - 1
[Send Feedback](#)

Which of the following is true about UNION and UNION ALL operation?

Options

This problem may have one or more correct answers

UNION operation eliminates duplicate values and then returns the values. ✓
 UNION operation returns rows along with the duplicate values.
 UNION ALL operation eliminate duplicate values and then return the values.
 UNION ALL operation returns rows containing the duplicate values. ✓

Solution Description

The UNION operation is used to combine two or more select statements. It is accomplished using the UNION clause. It eliminates the duplicate values from the tables. The UNION ALL operation works the same as the UNION operation. The only difference is that it doesn't eliminate duplicate values when using the UNION ALL clause.

Attempts left: 12

1.

MCQ - 2

[Send Feedback](#)

Consider the tables given below and answer the questions below:

Table Order:

| Attribute | Data type |
|---------------|--------------|
| order_id | INT |
| order_title | VARCHAR (20) |
| order_details | VARCHAR (50) |

Table Order_yearly:

| Attribute | Data type |
|---------------|--------------|
| order_id | INT |
| order_title | VARCHAR (20) |
| order_details | VARCHAR (50) |

What will be the outcome of the following query?

2. `SELECT order_details`

MCQ - 3

[Send Feedback](#)

Consider a table employee and a table job_history with the following attributes:

Table employee:

| Attribute | Data type |
|-----------|--------------|
| emp_id | INT |
| job_id | INT |
| name | VARCHAR (30) |
| dept_id | INT |
| salary | INT |

Table job_history:

| Attribute | Data type |
|------------|-----------|
| emp_id | INT |
| job_id | INT |
| dept_id | INT |
| start_date | DATE |
| end_date | DATE |

3.

4. `SELECT * FROM Empdept1 UNION SELECT * FROM Empdept2;`

Options

This problem has only one correct answer

- The query will execute successfully, giving the correct results and including duplicate values
- The query will execute successfully, giving the correct results, excluding the duplicate values
- The query will throw an error
- None of the above
-  Hurray! Correct Answer

Solution Description

This query will run successfully and will provide order details from both the tables excluding the duplicate values in the table.

Attempt

Options

This problem has only one correct answer

- The query will provide all the columns from the employee table and specified columns from the job_history table as an output.
- The query will provide only the job_id, emp_id and dept_id from both the tables as an output.
- The query will throw an error.
-  Hurray! Correct Answer

Solution Description

The query will throw an error as the number of columns should be same during UNION operation in both the tables.

5.

Problem

Result

SQL Query - 2

[Send Feedback](#)

Problem Statement:

List down employees (all the details) from both the departments who work as Salesman.

```
1 SELECT * FROM Empdept1 WHERE Job='SALESMAN'  
2 UNION ALL  
3 SELECT * FROM Empdept2  
4 WHERE Job='SALESMAN';
```

6.

Problem Result

SQL Query - 3

[Send Feedback](#)

Problem Statement:
List out each employee name and employee code from both the departments and order them in ascending order by their code.

Information about the table:
Table **Empdept1:**

| EmpCode | EmpFName | EmpLName | Job |
|---------|----------|----------|-----|
|---------|----------|----------|-----|

```
1 SELECT s.EmpFName,s.EmpLName,s.EmpCode
2 FROM
3 (
4     SELECT e1.EmpFName,e1.EmpLName,e1.EmpCode
5     FROM Empdept1 e1
6
7     UNION ALL
8
9     SELECT e2.EmpFName,e2.EmpLName,e2.EmpCode
10    FROM Empdept2 e2
11 ) AS s
12 ORDER BY s.EmpCode ASC;
```

7.

Problem Result

SQL query - 4

[Send Feedback](#)

Problem Statement:
Write a SQL query to print the item name, item type and price of all the items present in both the shops in descending order of their price.

```
1 SELECT S.item_name,S.item_type,S.price
2 FROM(
3     SELECT s1.item_name,s1.item_type,s1.price
4     FROM shop_1 s1
5     UNION ALL
6     SELECT s2.item_name,s2.item_type,s2.price
7     FROM shop_2 s2
8 ) AS S
9 ORDER BY S.price DESC;
```

8.

Problem Result

SQL query - 5

[Send Feedback](#)

Problem Statement:
Write a SQL query to get the item_name, price of items in shop_1 and shop_2 where price is greater than 25.

```
1 SELECT S.item_name,S.price
2 FROM(
3     SELECT s1.item_name,s1.price
4     FROM shop_1 s1
5     UNION ALL
6     SELECT s2.item_name,s2.price
7     FROM shop_2 s2
8 ) AS S
9 -- ORDER BY S.price DESC;
10 WHERE S.price>25;
```

MCQ - 4[Send Feedback](#)

What is true regarding the intersect operator?

Options

This problem has only one correct answer

- INTERSECT operation returns rows from the combined queries and NOT NULL values.
- INTERSECT operation returns columns for the combined queries after eliminating duplicates.
- INTERSECT operation returns the common rows from the combined queries.
- INTERSECT keyword is available in MySQL.

 Hurray! Correct Answer

Solution Description

INTERSECT operation returns only common rows in both queries after sorting them and removing duplicates.

9.

[Problem](#)[Result](#)**SQL query - 6**[Send Feedback](#)**Problem Statement:**

Find out all the details of employees that work for both the departments.

```
1 SELECT DISTINCT EmpCode,EmpFName,EmpLName,Job  
2 FROM Empdept1 INNER JOIN Empdept2 using (EmpCode,EmpFName,EmpLName,Job);
```

10.

[Problem](#)[Result](#)**SQL query - 7**[Send Feedback](#)

```
1 SELECT item_name,item_type  
2 FROM shop_1 INNER JOIN shop_2 using (item_name,item_type)  
3 WHERE item_type='stationery';  
4 |
```

11.

Problem Statement:[Problem](#)[Result](#)**SQL query - 8**[Send Feedback](#)

```
1 SELECT DISTINCT item_name,price  
2 FROM shop_1 INNER JOIN shop_2 using (item_name,price)  
3 WHERE price>20;
```

12.

Problem Statement:

Write a SQL query to find the name and price of items whose price is greater than 20 and available in both the shops.

Attempts left

MCQ - 5

[Send Feedback](#)

What of the following is TRUE regarding the MINUS operator?

Options

This problem has only one correct answer

- MINUS operation returns rows only from the first query but not from the second query.
- MINUS operation returns columns from the first query but not from the second query.
- MINUS operation returns non-duplicate rows after combining both the queries.
- MINUS operation returns duplicate columns from the combined queries ignoring the NULL values.

 Hurray! Correct Answer

Solution Description

MINUS operation returns only the rows present in the first table that don't appear in the second table after sorting them and removing duplicates.

13.

MCQ - 6

[Send Feedback](#)

When SET operators are used, where can we use the ORDER BY clause?

Options

This problem has only one correct answer

- When we combine queries, we can use the ORDER BY clause after the SET operator.
- We can use the ORDER BY clause only in the first query.
- We can use the ORDER BY clause at the end of the compound query.
- None of the above.

 Hurray! Correct Answer

Solution Description

If the ORDER BY clause is used in between any of the queries joined using the SET operators. It will throw an error. So, the ORDER BY clause always be used at the end of the compound query while using SET operators.

14.

MCQ - 7

[Send Feedback](#)

What is the order of precedence of the set operators:

Options

This problem has only one correct answer

- UNION ALL > UNION > INTERSECT > MINUS
- MINUS > INTERSECT > UNION > UNION ALL
- UNION > INTERSECT > UNION ALL > MINUS
- UNION = UNION ALL = INTERSECT = MINUS (They have the equal precedence)

 Hurray! Correct Answer

Solution Description

All the set operators have the same order of precedence.

15.

16.

SQL query - 9

[Send Feedback](#)
Problem Statement:

List down all the details of employees working in dept1 but not in Dept2.

Information about the table:
Table Empdept1:

| EmpCode | EmpFName | EmplName | Job |
|---------|----------|----------|-------------------|
| 9369 | TONY | STARK | SOFTWARE ENGINEER |
| 9469 | TIM | ADOLF | SALESMAN |
| 9666 | KIM | JARVIS | MANAGER |
| 9664 | SAM | MILES | SALESMAN |

Table Empdept2:

| EmpCode | EmpFName | EmplName | Job |
|---------|----------|----------|-------------------|
| 9369 | TONY | STARK | SOFTWARE ENGINEER |
| 9469 | TIM | ADOLF | SALESMAN |
| 9666 | KIM | JARVIS | MANAGER |
| 9664 | SAM | MILES | SALESMAN |

```

3 -- LEFT JOIN Empdept2 e2 using (e2.EmpCode,e2.EmpFName,e2.EmpLName,e2.Job
4 -- WHERE e2.EmpCode,e2.EmpFName,e2.EmpLName,e2.Job IS NULL;
5
6 SELECT e1.*
7 FROM Empdept1 e1
8 LEFT JOIN Empdept2 e2 ON e1.EmpCode = e2.EmpCode
9 WHERE e2.EmpCode IS NULL;
```

17.

SQL query - 10

[Send Feedback](#)
Problem Statement:

Write a SQL query to print the item name, item type of only the items which are available in shop 1 but not in shop 2 in the ascending order of item name.

Information about the table:
Table shop_1:

| item_id | item_name | item_type | price |
|---------|-----------|------------|-------|
| 1 | pencil | stationery | 10 |

```

3 -- LEFT JOIN shop_2 s2 ON s1.item_id = s2.item_id
4 -- WHERE s2.item_id IS NULL;
5
6 SELECT s1.item_name, s1.item_type
7 FROM shop_1 s1
8 LEFT JOIN shop_2 s2 ON s1.item_name = s2.item_name
9 WHERE s2.item_name IS NULL
10 ORDER BY s1.item_name ASC;
```

18.

SQL query - 11

[Send Feedback](#)
Problem Statement:

Write a SQL query to print the item name, price of only the items which are available in shop 2 but not in shop 1 whose price is greater than 50.

Information about the table:
Table shop_1:

| item_id | item_name | item_type | price |
|---------|-----------|------------|-------|
| 1 | pencil | stationery | 10 |
| 2 | soap | toiletries | 25 |
| 3 | eraser | stationery | 5 |

```

3 -- LEFT JOIN shop_2 s2 ON s1.item_id = s2.item_id
4 -- WHERE s2.item_id IS NULL;
5
6 SELECT s2.item_name, s2.price
7 FROM shop_1 s1
8 RIGHT JOIN shop_2 s2 ON s1.item_name = s2.item_name
9 WHERE s1.item_name IS NULL AND s2.price > 50;
```

Documents:-C:\Users\n1606\Desktop\Rahim_CodingNinjas\MileStone-7\DBMS\16.Set Operations

17. Sub Queries[27Mcqs]

MCQ - 1

[Send Feedback](#)

Suppose a user has 3 queries Q1, Q2 and Q3. These queries are written in a way i.e. Q1(Q2(Q3)). Which query will be executed first?

Options

Attempts left: 4

This problem has only one correct answer

Q1

Q2

Q3

All are updated at the same time

 Hurray! Correct Answer

Solution Description

Subqueries is a way of using queries within a particular query. It is accomplished using the parenthesis. The inner query is always executed first, followed by the execution of the outer query. Inner query results in a single value or set of values as an output. In the above example, Q3 is the innermost query, so it should be executed first.

1.

MCQ - 2

[Send Feedback](#)

Which of the following are the clauses in which subqueries exist?

Options

This problem may have one or more correct answers

INSERT clause

FROM clause ✓

WHERE clause ✓

 Hurray! Correct Answer

Solution Description

Subqueries exist mainly in 3 clauses

1. Inside a WHERE clause
2. Inside a FROM clause
3. Inside a SELECT clause

2.

3. `SELECT Qty FROM SP WHERE Sno IN(SELECT Sno FROM Supplier WHERE Sname IN ("rachit","anjali"));`

4.

Problem
Result

SQL query - 2

[Send Feedback](#)

Problem Statement:
Write a SQL query to display the supplier name and city of the supplier who supplies parts with Pno IN (1,5)

```

1 SELECT Sname, City FROM Supplier WHERE Sno IN (
2 SELECT Sno FROM SP WHERE Pno IN (
3 SELECT Pno FROM Product WHERE Pno IN (1,5)
4 )
5 );

```

5.

Problem
Result

SQL query - 3

[Send Feedback](#)

Problem Statement:
Write a SQL Query to get the colour of parts supplied by Supplier with Sno 1,3,6

Information about the table:
Table Product:

| Pno | Pname | Colour | Weight |
|-----|----------|--------|--------|
| 1 | pen | red | 5 |
| 2 | pencil | blue | 10 |
| 3 | sharpner | red | 3 |
| 4 | eraser | white | 6 |

```

1 -- SELECT Sno FROM Supplier WHERE
2 -- SELECT Sno FROM SP WHERE Pno IN(SEL
3
4 SELECT Colour
5 FROM Product
6 WHERE Pno IN
7 (
8   SELECT Pno
9   FROM SP
10  WHERE Sno IN
11  (
12    SELECT Sno
13    FROM Supplier
14    WHERE Sno IN (1, 3, 6)
15  )
16 );

```

6.

Problem
Result

SQL query - 4

[Send Feedback](#)

Problem Statement:
Write a SQL query to get the colour of parts supplied by all the employees except rachit and kashish.

Information about the table:
Table Product:

| Pno | Pname | Colour | Weight |
|-----|--------|--------|--------|
| 1 | pen | red | 5 |
| 2 | pencil | blue | 10 |

```

1 SELECT Colour
2 FROM Product
3 WHERE Pno IN
4 (
5   SELECT Pno
6   FROM SP
7   WHERE Sno IN
8   (
9     SELECT Sno
10    FROM Supplier
11    WHERE Sname NOT IN ('rachit','kashish')
12   )
13 );

```

7. `SELECT s.sname,s.age FROM sailors s WHERE age=(SELECT MAX(age) FROM sailors);`

MCQ - 3

[Send Feedback](#)

The given below relation schema is used to store information about the employees of a company, where **empId** is the primary key and **deptId** indicates the department of the employee.

Emp(empId, name, gender, salary, deptId)

Guess the output of the following Query:

```
SELECT name, MIN(salary) FROM Emp GROUP BY deptId HAVING MIN(salary) > (SELECT min(salary) FROM employees WHERE deptId = 20);
```

Options

This problem has only one correct answer

- It gives the names and minimum salary greater than department 20 of all employees.
- It gives the name and salaries of the employees in department 20
- It gives the names and minimum salaries of all the employees.
- It throws an error.

Solution Description

It will execute successfully. After the SELECT clause, we have written name, min(salary) the output table will have two columns of names and the minimum salary of every department. The table will contain the name and minimum salary of the departments which have a minimum salary greater than the minimum salary of department 20.

Attempts left: 1/2

8.

MCQ - 4

[Send Feedback](#)

The given below relation schema is used to store information about the employees of a company, where **empId** is the primary key and **dept_id** indicates the department of the employee.

Emp(empId, name, gender, salary, dept_id);

What will be the output of the following query?

```
SELECT SUM(AVG(salary)) FROM Emp GROUP BY dept_id;
```

Options

This problem has only one correct answer

- The query will provide the sum of salaries of all departments in the Emp table, and calculate its average.
- The query will throw an error as one aggregate function cannot be used inside another aggregate function.
- The query will throw an error because dept_id cannot be grouped as dept_id is not used in the SELECT list.
- The query will provide the sum of the average salary of each department in Emp table

Solution Description

The SQL query is incorrect as the aggregate functions cannot be nested.

9.

10. **SELECT Sname FROM Supplier WHERE Sno IN (SELECT Sno FROM SP WHERE Qty>10 AND Pno IN (SELECT Pno FROM Product WHERE Pname='pencil'));**

11.

SQL query - 7

[Send Feedback](#)

Problem Statement:

```
1 | SELECT EmpName FROM Employee
2 | WHERE Salary > (SELECT Salary FROM Employee WHERE EmpName='Monica Geller');
```

12.

SQL query - 8

[Send Feedback](#)

Problem Statement:

List down all the employees whose job is the same as Phoebe Buffay.

```
1 | SELECT e.EmpName,e.Salary,e.DeptCode,e.Job FROM Employee e WHERE Job=
2 | SELECT Job FROM Employee WHERE EmpName='Phoebe Buffay'
3 | );
```

13.

Sub query - 9

[Send Feedback](#)

Problem Statement:

Print out all the employees with their respective

```
1 |
2 |
3 | SELECT EmpName, DeptCode FROM Employee WHERE EXISTS (SELECT DeptCode FROM Employee WHERE Salary > 4000);
```

14.

Problem

Result

SQL query - 10

[Send Feedback](#)

Problem Statement:

Find the name of boats and their respective colors of the sailors with minimum age.

Information about the table:

Table sailors: :

| sid | sname | rating | age |
|-----|--------|--------|-----|
| 22 | dustin | 7 | 25 |
| 29 | brutus | 1 | 33 |

```

1  SELECT bname,color
2  FROM boats
3  WHERE bid
4  IN(
5      SELECT bid
6      FROM reserves
7      WHERE sid
8      IN(
9          SELECT sid
10         FROM sailors
11        WHERE age=(SELECT MIN(age)
12          FROM sailors
13      )
14  ));

```

15.

Problem

Result

SQL query - 11

[Send Feedback](#)

Problem Statement:

Find the IDs of sailors and their daytook for sailors with highest rating.

Information about the table:

Table sailors: :

| sid | sname | rating | age |
|-----|--------|--------|-----|
| 22 | dustin | 7 | 25 |
| 29 | brutus | 1 | 33 |

```

1  SELECT sid,daytook
2  FROM reserves
3  WHERE sid IN(
4      SELECT sid
5      FROM sailors
6      WHERE rating=(SELECT MAX(rating)
7        FROM sailors
8      )
9  );
10 );
11 );

```

Problem **Result**

MCQ - 5

[Send Feedback](#)

Consider a table bank_records given below:

| Customer | Bank Manager | Amount |
|----------|--------------|--------|
| Ram | Anchit | 100000 |
| Shyam | Gopal | 50000 |
| Makhan | Anchit | 70000 |

What will be the output of the following query?

```
SELECT count(*) FROM ( ( SELECT Customer,
    Bank_Manager FROM bank_records) as s JOIN ( SELECT
    Amount FROM bank_records) as t);
```

Options

This problem has only one correct answer

- 5
- 9
- 6
- 3

Hurray! Correct Answer

Solution Description

The Joined table would be:

16.

Problem **Result**

MCQ - 6

[Send Feedback](#)

The given below relation schema is used to store information about the employees of a company, where **emp_Id** is the primary key and **dept_Id** indicates the department of the employee.

Employee(emp_Id, name, gender, salary, dept_Id)

Consider the following SQL query:

```
SELECT emp_Id, name from (select * from Employee
WHERE salary>avg(salary)) as e;
```

What will be the output of the query?

Options

This problem has only one correct answer

- It will provide the employee id and name of the employee whose salary is greater than the average salary of all the employees.
- It will provide the employee id and name of the employee whose salary is less than the average salary of all the employees.
- It will provide the name of the employee whose salary is greater than the average salary of all the employees.
- It will provide the employee id of the employee whose salary is less than the average salary of all the employees.

Hurray! Correct Answer

Solution Description

After the SELECT clause, we have written emp_id and name. So, the output consists of 2 columns emp_id and name. The table will be derived from the subquery using FROM clause. In the subquery, we are selecting all the values from employees whose salary is greater than the average salary of all the employees.

17.

Problem **Result**

MCQ - 7

[Send Feedback](#)

The given below relation schema is used to store information about the employees of a company, where **emp_Id** is the primary key and **dept_Id** indicates the department of the employee.

Employee(emp_Id, name, gender, salary, dept_Id)

Consider the following Query:

```
SELECT emp_id FROM ( SELECT Employee.emp_id FROM
Employee ORDER BY Employee.dept_id DESC) as e;
```

What will be the output of the Following query

Options

This problem has only one correct answer

- It will provide the employee id of all the employees in ascending order of department id.
- It will provide the department id of all employees in ascending order of employee id.
- It will provide the employee id of all the employees in descending order of department id.
- It will provide the department id of all employees in descending order of employee id.

Hurray! Correct Answer

Solution Description

After the SELECT clause, we have written emp_id. So, output consist of one column i.e. emp_id. The table will be derived from the subquery using FROM clause. In the subquery, we are sorting the table in the descending order of department id.

18.

19.

Problem
Result

SQL query - 12

[Send Feedback](#)

Problem Statement:
Write a SQL query for the red-colored products whose original weight is less than 10 units; displaying information in the output table as: product name, colour and 20 times the original weight as 'w'.

```
1 SELECT Pname,Colour, Weight*20 AS w
2 FROM Product
3 WHERE Colour='red' AND Weight<10;
```

20.

Problem
Result

SQL query - 13

[Send Feedback](#)

Problem Statement:
List down the employee details with their annual salary, given that the annual salary of the employees being listed should be greater than

```
1 SELECT EmpCode,EmpName,Salary,Salary*12 AS A_Sal
2 FROM Employee
3 WHERE Salary*12>30000;
```

MCQ - 8

[Send Feedback](#)

What is true about correlated subqueries?

Attempts left: 1/2

Options

This problem has only one correct answer

- The tables used in the main query are also used in a correlated subquery
- Subqueries that necessarily use tables other than those used in the main query are called correlated subqueries.
- The subquery that references a column used in the main query is called a correlated subquery
- A subquery written without parentheses is called a correlated subquery

✓ Hurrah! Correct Answer

Solution Description

The correlated subquery references a column in the outer query and runs the subquery once for each row of the outer query, while the uncorrelated subquery runs the subquery first and passes the price value for the outer query.

21.

Problem
Result

SQL query - 14

[Send Feedback](#)

Problem Statement:
Print the employee details for all employees who earn more than the average salary and having an "e" in their name.

Information about the table:
Table Employee:

```
1 SELECT EmpCode,EmpName,Salary
2 FROM Employee
3 WHERE Salary>(SELECT AVG(Salary) FROM Employee) AND EmpName LIKE '%e%';
```

22.

Problem Result

SQL query - 15

[Send Feedback](#)

Problem Statement:
Find the ids and names of sailors who have reserved at least two different boats.

Information about the table:
Table **sailors**:

| sid | sname | rating | age |
|-----|-------|--------|-----|
|-----|-------|--------|-----|

```
1 SELECT s.sid,s.sname
2 FROM sailors s
3 WHERE (
4   SELECT COUNT(DISTINCT r.bid)
5   FROM reserves r
6   WHERE r.sid=s.sid
7 )>=2;
```

23.

Problem Result

SQL query - 16

[Send Feedback](#)

Problem Statement:
Fetch out the color, sailor id and boat id of the boats reserved by the Sailor having 2nd highest rating. Order the result based on the bid in descending order.

Information about the table:
Table **sailors**:

| sid | sname | rating | age |
|-----|-------|--------|-----|
|-----|-------|--------|-----|

```
1 SELECT b.color, r.sid, r.bid
2 FROM sailors s
3 JOIN reserves r ON s.sid = r.sid
4 JOIN boats b ON r.bid = b.bid
5 WHERE s.rating = (
6   SELECT DISTINCT rating FROM sailors s ORDER BY rating DESC LIMIT 1 OFFSET 1
7 )
8 ORDER BY r.bid DESC;
```

24.

Problem Result

SQL query - 17

[Send Feedback](#)

Problem Statement:
Display all the sailor id, boat id and sailor name which are reserved by Sailors who have ratings more than the average rating in the reserves table.

Information about the table:

| sid | bid | rating |
|-----|-----|--------|
|-----|-----|--------|

```
1 | 
2 SELECT s.sid, r.bid, s.sname
3 FROM sailors s
4 JOIN reserves r ON s.sid = r.sid
5 JOIN (
6   SELECT AVG(s.rating) AS avg_rating
7   FROM sailors s
8   JOIN reserves r ON s.sid = r.sid
9 ) AS t
10 WHERE s.rating > t.avg_rating
11 ORDER BY s.sid, r.bid;
```

25.

26.

Problem
Result

SQL query - 18

[Send Feedback](#)

Problem Statement:
Display all the sailor id, boat id, sailor name and boat color which are reserved by Sailors who have ratings less than the average rating in the

```

1 |SELECT r.sid, r.bid, s.sname,color
2 |FROM sailors s, reserves r, boats b
3 |WHERE s.sid = r.sid
4 |AND r.bid = b.bid
5 |AND s.rating<(
6 |SELECT AVG(rating)
7 |      FROM reserves
8 |      INNER JOIN sailors
9 |      WHERE s.sid = r.sid
10|);

```


Problem
Result

MCQ - 9

[Send Feedback](#)

Which of the following statements are FALSE?

Statement-1: The JOIN clause does not contain additional queries. It connects two or more tables and selects data from them into a single result set.

Statement-2: A subquery is easier to write than a join query.

Statement-3: A join query is easier to write than a subquery.

Statement-4: Simple subqueries do not rely on the columns in the outer query, whereas correlated subqueries refer to data from the outer query.

Statement-5: More joins in a query means the database server has to do less work, which means that it is a less time-consuming process to retrieve data.

You have max 2 attempts to score in this question.

Attempts left: 2

Options
This problem has only one correct answer

- Statement 1, 2, 4 & 6
- Statement 2, 4 & 5
- Statement 3 & 5
- Statement 3, 4 & 5
- Hurray! Correct Answer

Solution Description
Statement-1 is correct, as the Join clause connects two or more tables and gives a single result set, which is done using one single query.
Statement-2 is correct as subquery is easier to write when we split a long query into subparts, whereas it becomes very tricky in joins to conclude which particular join comes into play for which particular query.
Therefore, statement-3 will also be incorrect.
Statement-4 is correct, as we can use the keywords IN or EXISTS in correlated subqueries to refer the data from the column in the outer subquery.

27.

28.

Documents:-C:\Users\N1606\Desktop\Rahim_CodingNinjas\MileStone-7\DBMS\17.Sub Queries

18. Cheat Sheet

Documents:-C:\Users\N1606\Desktop\Rahim_CodingNinjas\MileStone-7\DBMS\18. Cheat Sheet

Part-2

1.Transaction Statement[8]

1. Which of the following is a sequence of SQL operations which are treated as a single unit of work: Transaction

Problem Result

MCQ - 2
[Send Feedback](#)

Which command performs the end of a successful transaction.

COMMIT TRANSACTION
 ROLLBACK TRANSACTION
 COMMIT WORK
 All of the mentioned

The solution to this problem has been viewed

Solution Description

There is mainly four types of TCL Command:

1. BEGIN TRANSACTION: This TCL command basically starts the transaction.
2. COMMIT TRANSACTION: This TCL command makes changes done to the transaction permanent. It saves all the changes done to a transaction.
3. ROLLBACK TRANSACTION: This TCL command uncommit or cancels all the changes done to a transaction and restores the current state to any previously saved state.
4. SAVEPOINT TRANSACTION: This TCL command saves the current state into a saving point. That savepoint can later be accessed.

2.
3. You can roll back after performing the commit in MySQL.

4. You can roll back after performing the commit in MySQL.:False

Attempts left: 1

Problem Result

MCQ - 4

[Send Feedback](#)

Suppose we have created a savepoint named Spt1, which of the following commands can be used to rollback the transactions executed after creating the savepoint :

RELEASE SAVEPOINT Spt1

COMMIT Spt1

ROLLBACK TO Spt1

ROLLBACK

Hurray! Correct Answer

Solution Description

ROLLBACK transaction - This TCL commands undo all the changes or restore the current state to any previously saved state.

General form:

ROLLBACK: This rollback the previously committed command to its initial state

ROLLBACK TO savepoint: This undoes the current state and restores it to the savepoint

5.

Attempts left: 1

LQ - 5

[Send Feedback](#)

Which of the following is the query to apply Read Lock on table Employees.

LOCK TABLE Employees READ;

LOCK TABLE Employees READ|WRITE;

LOCK TABLE Employees PRIORITY READ;

LOCK TABLE Employees READ ONLY;

Hurray! Correct Answer

Solution Description

READ LOCK allows a user to only read the data from a table. The syntax for READ LOCK is: LOCK TABLES T_name READ

6.

Problem Result

MCQ - 6

[Send Feedback](#)

Choose the correct command to view the operations currently being performed by MySQL.

Options

This problem has only one correct answer

Attempts left: 1/2

- SHOW WAITLIST;
- SHOW PROCESSLIST;
- SHOW OPERATIONS;
- None

 Hurray! Correct Answer

Solution Description

The 'SHOW PROCESSLIST' command in MySQL displays all the running threads or processes information associated with the current user account. This command is extremely useful when the MySQL server returns too many connection error messages.

7.

Problem Result

MCQ - 7

[Send Feedback](#)

Attempts left: 1/2

Which of the following written queries will produce error when working in the same session.

Table: cricket(Id integer, Name varchar, Position varchar, Status integer)

Options

This problem has only one correct answer

- LOCK TABLE cricket READ; INSERT INTO cricket('score') VALUES('200');
- LOCK TABLE cricket WRITE; INSERT INTO cricket('score') VALUES('200');
- LOCK TABLE cricket READ; SELECT * FROM cricket;
- None.

 Hurray! Correct Answer

Solution Description

READ LOCK: This lock allows a user to only read the data from a table.
WRITE LOCK: This lock allows a user to do both reading and writing on a table.

In the query, LOCK TABLE cricket READ; INSERT INTO cricket('score') VALUES('200'): we applied READ LOCK on the cricket table and in the next query the INSERT operation is done which is basically a write operation. This will result in an error as when we READ LOCK, we can only do READ operation
In other options, B, C, D, ee have done READ operation after READ LOCK, and WRITe operation after WRITE LOCK, hence they would not have error.

8.

9.

Documents:-C:\Users\n1606\Desktop\Rahim_CodingNinjas\MileStone-8\DBMS\1.Transaction Statement

2.Import/Export [4]

1. Out of the following, what data file can mysql workbench import data from?[1,2]]

1. csv
2. json
3. ORC
4. Protocol
5. Parquet

2.

Problem Result

MCQ - 2
[Send Feedback](#)

Choose the correct query for importing data, from the following.

Options
This problem has only one correct answer

LOAD DATA INFILE 'c:/tmp/football.csv' INTO TABLE Zalton FIELDS TERMINATED BY ',' ENCLOSED BY "" LINES TERMINATED BY '\n' IGNORE 1 ROWS;

LOAD DATA INFILE 'c:/tmp/football.csv' INTO TABLE Zalton

LOAD DATA INFILE 'c:/tmp/football.csv' INTO Zalton FIELDS ENCLOSED BY "" LINES TERMINATED BY '\n' IGNORE 1 ROWS;

LOAD INFILE "c:/tmp/football.csv" INTO DATABASE Zalton AS TABLE his_goals FIELDS TERMINATED BY ',' ENCLOSED BY "" LINES TERMINATED BY '\n' IGNORE 1 ROWS;

Huray! Correct Answer

Solution Description
When importing from a local computer, the client program reads the file on the client and sends it to the MySQL server. The file will be uploaded into the database server operating system. Query - LOAD DATA LOCAL INFILE 'c:/tmp/xyz.csv' INTO TABLE T_name FIELDS TERMINATED BY ',' ENCLOSED BY "" LINES TERMINATED BY '\n' IGNORE 1 ROWS;
In the above Query, FIELDS TERMINATED BY, ENCLOSED BY, LINES TERMINATED BY, IGNORE ROWS is a part of the File and Line handling process. FIELDS TERMINATED BY is used when the text file we are importing is having values separated by commas. ", ". ENCLOSED BY is used when we want to specify that we want to load the files under these symbols. LINES TERMINATED BY is to terminate the specific line while importing the data. IGNORE ROWS is used to ignore the specific row from a CSV file.

3.

MCQ - 3

[Send Feedback](#)

Before exporting data, we must ensure that:

Options

This problem has only one correct answer

- write access should be provided to the target folder that contains the target DATA file.
- The target DATA file must not exist.
- Both a and b
- None.

 **Hurray! Correct Answer**

Solution Description

To export our data in CSV file we must ensure that

1. The write access should be provided to the folder containing the target data file.
2. The Target data file must not already exist.

Also, The query should be properly written and the target filename should be unique which we are writing in the query.

4.

MCQ - 4

[Send Feedback](#)

Attempts left: 0/2

Choose the correct query for Exporting data, from the following.

Options

This problem has only one correct answer

- `SELECT * FROM UFC WHERE id = 1 INTO OUTFILE 'C:/tmp/conner_vs_khabib2.csv' ;`
- `SELECT * FROM UFC WHERE id = 1 INTO OUTFILE 'C:/tmp/conner_vs_khabib2.csv' FIELDS ENCLOSED BY "" TERMINATED BY '\'' ESCAPE '\'';`
- `SELECT * FROM UFC WHERE id = 1 INTO OUTFILE 'C:/tmp/conner_vs_khabib2.csv' FIELDS TERMINATED BY ',' ENCLOSED BY "" LINES TERMINATED BY '\n';`
- `SELECT * FROM UFC WHERE id = 1 LOAD DATA OUTFILE 'C:/tmp/conner_vs_khabib2.csv' FIELDS TERMINATED BY ',' ENCLOSED BY "" LINES TERMINATED BY '\n';`

 **Hurray! Correct Answer**

Solution Description

To export our data into a CSV file.
Query:- `SELECT column_name(s) FROM T_name WHERE id = 1 INTO OUTFILE 'C:/tmp/xyz_exported.csv' FIELDS ENCLOSED BY "" TERMINATED BY '\'' ESCAPED BY '\"' LINES TERMINATED BY '\n';`

In the above Query, FIELDS ENCLOSED BY, ESCAPES BY, LINES TERMINATED BY, TERMINATED BY is a part of the File and Line handling process

1. FIELDS ENCLOSED BY is used when we have to export the data from the specific field

Documents:-C:\Users\n1606\Desktop\Rahim_CodingNinjas\MileStone-8\DBMS\2.Import Exports

3.Normalization[20]

1.

MCQ - 1

[Send Feedback](#)

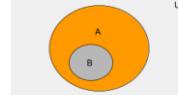
What is trivial functional dependency?

- If $A \rightarrow B$ holds where B is a subset of A.
 - If $A \rightarrow B$ holds where B is not an intersection of A.
 - If $A \rightarrow B$ holds where B is an intersection of A.
- Hurray! Correct Answer

Solution Description

Let there be a set of attributes A which determines a set of attributes B (i.e. $A \rightarrow B$). Now if the dependent (i.e. B) is a subset of the determinant (i.e. A). i.e. If $A \rightarrow B$ and $B \subseteq A$. Hence, we call this a trivial functional dependency.

Here is a Venn diagram below for this trivial dependency:



2.

MCQ - 2

[Send Feedback](#)

Attempts left: 10

The rule which states that addition of same attributes to the right side and left side will result in other valid dependency is classified as:

Options

This problem has only one correct answer

- reflexive rule
 - augmentation rule
 - transitivity Rule
 - Sigma Rule
- Hurray! Correct Answer

Solution Description

The augmentation rule states that the addition of the same attributes to the right side and the left side will result in another valid dependency. If can be determined from A, then adding an attribute to this functional dependency won't change anything. i.e. If $A \rightarrow B$ holds, then $AM \rightarrow BM$ holds too. 'M' being a set of attributes.

3.

MCQ - 3

[Send Feedback](#)

Attempts left: 1

A relation R has the following tuples:

| A | B | C |
|---|---|---|
| 1 | 2 | 3 |
| 4 | 2 | 3 |
| 5 | 3 | 3 |
| 2 | 4 | 4 |

Options

This problem has only one correct answer

- $A \rightarrow B$
 - $AB \rightarrow C$
 - $C \rightarrow B$
 - $B \rightarrow C$
- Hurray! Correct Answer

Solution Description

Explanation: Here , if we observe carefully for $C \rightarrow B$, we would notice that for attribute 'C', value 3 is appearing multiple times and it is pointing to different values of attribute 'B'. So, if we consider value 3 of attribute 'C' , then it can point to value 2 as well as value 3 of attribute 'B'. Hence, 'C' cannot determine 'B' uniquely.
Hence $C \rightarrow B$ does NOT hold.

MCQ - 4[Send Feedback](#)

Attempts left: 1

$R=\{A, B, C, D, E\}$ is the given schema, the FD's for the same are as follows:

 $A \rightarrow B$ $A \rightarrow C$ $CD \rightarrow E$ $B \rightarrow D$ $E \rightarrow A$

Identify the illegal relation from the following.

4.

Options

This problem has only one correct answer

 $BC \rightarrow CD$ $AC \rightarrow BC$ $EC \rightarrow AC$ $BD \rightarrow CD$

Hurray! Correct Answer

Solution Description

Using Armstrong's axiom of Augmentation, which states that, If Y can be determined from X , then adding an attribute to this functional dependency won't change anything.

i.e. If $X \rightarrow Y$ holds, then $XM \rightarrow YM$ holds too. ' M ' being a set of attributes.

Therefore, here all the relation stated holds but not $BD \rightarrow CD$. As there is no FD stating $B \rightarrow D$.

MCQ - 5[Send Feedback](#)

$R=\{A, B, C, D, E\}$ is the given schema, the FD's for the same are as follows:

 $A \rightarrow B$ $A \rightarrow C$ $CD \rightarrow E$ $B \rightarrow D$ $E \rightarrow A$

Is the relation $CD \rightarrow AC$ legal one?

5.

Options

This problem has only one correct answer

 Yes No Cannot say

Hurray! Correct Answer

Solution Description

We know $CD \rightarrow E$ and $E \rightarrow A$. Therefore, $CD \rightarrow A$ (using transitive rule)

Also it is evident that $C \subseteq CD$ therefore, $CD \rightarrow C$.

Hence, Combining $CD \rightarrow A$ and $CD \rightarrow C$, we can state, $CD \rightarrow AC$.

MCQ - 6[Send Feedback](#)

Attempts left: 0

A functional dependency of the form $A \rightarrow B$ is trivial if:

6.

Options

This problem has only one correct answer

 $A \subseteq A$ $A \subseteq B$ $B \subseteq A$ $A \subseteq B$ and $B \subseteq A$

Hurray! Correct Answer

Solution Description

Let there be a set of attributes A which determines a set of attributes B (i.e. $A \rightarrow B$). The functional dependency will be trivial if the dependent (i.e. B) is a subset of the determinant (i.e. A). i.e. If $A \rightarrow B$ and $B \subseteq A$.

7.

MCQ - 7[Send Feedback](#)

Attempts left: 1

Which of the following anomalies can a relation have if it contains data redundancies.

Options

This problem has only one correct answer

- Insertion
- Deletion
- Update
- All of them

Hurray! Correct Answer

Solution Description

Data Redundancy means having the same copies of data in a database. This mostly happens in the database when the data is not normalised. Anomalies that can be caused due to Data Redundancy are mostly on the WRITE anomalies that are insertion anomaly, deletion anomaly, update anomaly, etc.

8.

MCQ - 8[Send Feedback](#)

Consider the following table:

| Employee_ID | Name | Department | Clubs |
|-------------|-----------|------------|-----------------|
| 1 | Navdeep | Content | Fitness Freaks |
| 2 | Shubhangi | Marketing | Marketing Club |
| 3 | Shubhangi | Marketing | Management Club |
| 4 | Gaurav | CIS | Technology Org. |
| 5 | Gaurav | CIS | Fitness Freaks |

Answer the following question with the help of above data. Keep in mind that an employee may be added to various clubs, but only one department.

While creating the database, the column "Clubs" was defined so that null values are not allowed. A new intern is hired by the company. No departments or clubs are assigned to him beforehand. What kind of anomaly might occur due to this restriction?

You have max 2 attempts to score in this question.

Options

This problem has only one correct answer

- Updation Anomaly
- Deletion Anomaly
- Insertion Anomaly
- None of the above

Hurray! Correct Answer

Solution Description

A new employee without a club affiliation cannot be added into the database.

9.

MCQ - 9[Send Feedback](#)

Consider the following table:

| Employee_ID | Name | Department | Clubs |
|-------------|-----------|------------|-----------------|
| 1 | Navdeep | Content | Fitness Freaks |
| 2 | Shubhangi | Marketing | Marketing Club |
| 3 | Shubhangi | Marketing | Management Club |
| 4 | Gaurav | CIS | Technology Org. |
| 5 | Gaurav | CIS | Fitness Freaks |

Answer the following question with the help of above data. Keep in mind that an employee may be added to various clubs, but only one department.

If the club Fitness Freak is disbanded and the data is not handled properly, what anomaly might occur?

Options

This problem has only one correct answer

- Updation Anomaly
- Deletion Anomaly
- Insertion Anomaly
- None of the above

Hurray! Correct Answer

Solution Description

Deletion of instances of the club Fitness Freak will lead to the complete loss of employee information having Employee_ID as 1.

MCQ - 10[Send Feedback](#)

Consider the following table:

| Employee_ID | Name | Department | Clubs |
|-------------|-----------|------------|-----------------|
| 1 | Navdeep | Content | Fitness Freaks |
| 2 | Shubhangi | Marketing | Marketing Club |
| 3 | Shubhangi | Marketing | Management Club |
| 4 | Gaurav | CIS | Technology Org. |
| 5 | Gaurav | CIS | Fitness Freaks |

Answer the following question with the help of above data. Keep in mind that an employee may be added to various clubs, but only one department.

Gaurav has recently decided to switch to the Tech Team and has put in an official request for department change. What anomaly might occur in the above database if the database manager doesn't realize the one to many relation between employee and clubs?

10.

MCQ - 11[Send Feedback](#)

Katherine was the assistant to the DBMS professor at her college. She was given a simple task of converting composite attributes into individual attributes for a table. What normalization is she performing?

11.

MCQ - 12[Send Feedback](#)

Which of the following is not required for a table to be in 1NF?

12.

Options

This problem has only one correct answer

- Updation Anomaly
- Deletion Anomaly
- Insertion Anomaly
- None of the above

Hurray! Correct Answer

Solution Description

Updating the department may lead to the data inconsistency and partial update as multiple entries are present for Gaurav. All rows should be updated with a new department for Gaurav.

Options

This problem has only one correct answer

- First
- Second
- Third
- None of the above

Hurray! Correct Answer

Solution Description

First Normal Form (1NF) is the first step of the normalization process. For a relation to justify 1NF, it needs to satisfy 4 basic conditions:

1. Each attribute should contain atomic values. (i.e. no multivalued attributes)
2. Each Value stored in an attribute should be of the same type.
3. All the attributes in a table should have unique names.
4. The order of the data stored in the table doesn't matter.

In the given question Katherine was given the task of converting composite attributes to individual attributes for a table. So it is in the First normal form.

Options

This problem has only one correct answer

- Attributes to have unique names
- Free from Transitive dependencies
- Single valued attribute
- Each value in an attribute is of a similar type.

Hurray! Correct Answer

Solution Description

For a relation to justify 1NF, it needs to satisfy 4 basic conditions:

1. Each attribute should contain atomic values.
2. Each Value stored in an attribute should be of the same type.
3. All the attributes in a table should have unique names.
4. The order of the data stored in the table doesn't matter.

13.

MCQ - 13 (First Normal Form)

[Send Feedback](#)

We are given a table products:

| cust_id | products_ordered | price |
|---------|------------------|-------|
| 20 | Mobile cover | 499 |
| 27 | Bag, Earphones | 1399 |
| 33 | Laptop | 35000 |
| 35 | camera | 5490 |

Identify which Normal form it doesn't satisfy, and type answer as 3NF, 2NF... separated by commas.

A way to fix this is, Split the table into two tables one containing the cust_id with the price paid and other one containing the cust_id and the products_ordered.

Here, splitting the table is a better option as the customer buying the products have certain number of products in the cart and we only know the final price. We are not aware of the price of individual product_ordered like Bag or earphones, so we would not be able to insert them as separate rows (one for Bag and another for Earphone) inside the Product table.

Table Price:

| cust_id | price |
|---------|-------|
| 20 | 499 |
| 27 | 1399 |
| 33 | 35000 |
| 35 | 5490 |

Table Orders:

| cust_id | product |
|---------|--------------|
| 20 | Mobile cover |
| 27 | Bag |
| 27 | Earphone |
| 33 | Laptop |
| 35 | Camera |

14.

MCQ - 14

[Send Feedback](#)

For a relation to be in 2NF it has to:

Problem **Result**

You have max 2 attempts to score in this question.

Options

This problem has only one correct answer

a. Be in 1 NF

b. Shouldn't have transitive dependencies

c. Shouldn't have partial dependencies

Both c and a

Both a and b

Hurray! Correct Answer

Solution Description

For a relation to justifying 2NF, it needs to satisfy two important rules:

1. It should be in the First Normal Form.
2. It should not have any partial dependencies i.e. when a nonprime attribute is derivable from only a part of a candidate key.

MCQ - 15 (Second Normal Form)[Send Feedback](#)

For a given table employee, assume an employee can work for multiple teams.

| Emp_id | Team | Emp_age |
|--------|-----------|---------|
| 34324 | Design | 22 |
| 34324 | Content | 22 |
| 54355 | Content | 21 |
| 77445 | Technical | 25 |
| 77445 | Design | 25 |

Identify the prime attributes. Write them as comma separated.

15.

MCQ - 16 (Second Normal Form)[Send Feedback](#)

For a given table employee, assume an employee can work for multiple teams.

| Emp_id | Team | Emp_age |
|--------|-----------|---------|
| 34324 | Design | 22 |
| 34324 | Content | 22 |
| 54355 | Content | 21 |
| 77445 | Technical | 25 |
| 77445 | Design | 25 |

What normal form does this table violates?

16.

Answer

Type here

2NF

Solution Description

Non-prime: Emp_age (it is dependent on Emp_id)

Prime attributes: (Emp_id, Team)

17.

MCQ - 17 (Second Normal Form)

[Send Feedback](#)

For a given table employee, assume an employee can work for multiple teams.

| Emp_id | Team | Emp_age |
|--------|-----------|---------|
| 34324 | Design | 22 |
| 34324 | Content | 22 |
| 54355 | Content | 21 |
| 77445 | Technical | 25 |
| 77445 | Design | 25 |

How will you fix the violation? Write in bullet format.

It should not have partial dependencies

Solution Description

To fix this we should split the above table into two:

Table Emp_detail:

| Emp_id | Emp_age |
|--------|---------|
| 34324 | 22 |
| 54355 | 21 |
| 77445 | 25 |

Table Team_data:

| Emp_id | Team |
|--------|-----------|
| 34324 | Design |
| 34324 | Content |
| 54355 | Content |
| 77445 | Technical |
| 77445 | Design |

18.

MCQ - 18

[Send Feedback](#)

Which of the following dependencies leads to violation of 3NF.

Options

This problem has only one correct answer

- Transitive Dependency
 - Partial Dependency
 - Both a and b
 - None of them
-  Hurray! Correct Answer

Solution Description

For a table to be in third normal form, first it should be in 2NF and second no transitive dependencies.

MCQ - 19 (Third Normal Form)

[Send Feedback](#)

Given a table subjects as shown below:

| Sub | Department | Instructor |
|-----|------------|------------|
| S1 | Dep1 | Ins1 |
| S3 | Dep1 | Ins2 |
| S2 | Dep1 | Ins1 |
| S4 | Dep2 | Ins3 |
| S5 | Dep2 | Ins4 |

Identify the normal it violates. Also, give the ways to fix them.

Note: Write the normal form(s) comma separated and give the ways to fix them in bullet form from the next line.

19.

Here, on observing we can say,

Sub-> Instructor (A subject is taught by instructor)

And Instructor-> Department (an instructor belongs to certain department)

So we can say Sub --> Department (using transitive rule.)

Hence, transitive dependency from the primary key.

Hence Violating 3NF.

Let's fix this by splitting the above table into two as below:

Table Ins_dep:

Instructor | Department

| | |
|-------|-------|
| ----- | ----- |
| Ins1 | Dep1 |
| Ins2 | Dep1 |
| Ins3 | Dep2 |
| Ins4 | Dep3 |

Table Sub_Ins:

Sub | Instructor

| | |
|-------|-------|
| ----- | ----- |
| S1 | Ins1 |

20.

Problem

Result

MCQ - 20

[Send Feedback](#)

Consider the following table Book_records with attributes (Book, Author, Genre) and the functional dependencies as:

(Book, Author)-> Genre

(Book, Genre)-> Author

Author-> Genre

Also, the Candidate keys for the table are : (Book, Author) and (Book, Genre)

| Table: Book_records | | |
|---------------------|-------------|---------------|
| Book | Author | Genre |
| Flying Monkeys | Anjali Sen | Non Fiction |
| The Emperor | Anjali Sen | Non Fiction |
| Flying Monkeys | Pawan Kumar | Honor Fiction |
| The Emperor | R. Dubey | Honor Fiction |

Which of the following statement is true?

You have max 2 attempts to score in this question.

Attempts left: 1/2

Options

This problem has only one correct answer

- The above relation is in BCNF.
- The above relation is in 3NF but not in BCNF.
- It is in BCNF but not 3NF.
- None of the above.

Hurray! Correct Answer

Solution Description

The given table is in 3NF as for the functional dependency Author -> Genre, Genre is prime attribute and for (Book, Author) -> Genre, (Book, Genre) -> Author, both the (Book, Author) and (Book, Genre) are super keys.
So, all the Functional Dependencies hold good for 3NF.

We know what for a table to be in BCNF, if every functional dependency $X \rightarrow Y$, X is the super key of the table.
If we observe the given table, we can check that for the Functional Dependency (Author->Genre), Author is not a Super key. Hence it is not in BCNF.

Documents:-C:\Users\n1606\Desktop\Rahim_CodingNinjas\MileStone-8\DBMS\3.Normalization

4.Projects

Project Movie Library

Now as you might remember one of our ninjas opened up a movie store, inspired by him one of the other ninjas also decided to open up a Movies library.

To maintain the record of the movies rented from his library he created a database but as you know opening up a new store can be quite hassling. So, he created a database without taking care of the anomalies that can be present in the data.

Here's a view of the main and the only table from his database:-

| customer_name | title | Address | Movie Rented |
|-----------------|-------|--|-----------------------|
| Lokesh Daga | Mr. | 403-B monrovia nagar, Noida, Rajasthan | Race 2, Radhe, Bharat |
| Nimelabh Shukla | Mr. | 419-M kota nagar, Noida, Rajasthan | Daddy's Little Girls |
| Lokesh Daga | Mr. | 57 Ashok Nagar, Bikaner, Rajasthan | The Notebook |
| Rashi Sharma | Ms. | 109 Ram Nagar, Naupur, Rajasthan | Fanna, The Notebook |

Now, could you help the ninja with the tasks as listed below.

Q1. Identify the basic issue with the table currently and convert it into 1NF normal form and explain your

Project Submission

EVALUATED

Deadline May 11, 2023

Upload Project

Your Submission

Movie Library.zip ✓

Score: 100%

Assessment Report

QUESTION 2 SCORE: 3/3
Correct identification of keys. 3/3

QUESTION 6 SCORE: 2/2
Identify if tables are required to be converted to next higher form or not? 2/2

QUESTION 5 SCORE: 6/6
New Tables:- "https://files.codingninjas.in/pro3_3-13883.png" 2/2

1.

Project Online store Startup

Consider that you have got an internship in an upcoming unicorn startup. The organisation wants to create an online survey feature for the different categories of the products sold by them to help with their business intelligence and make out useful strategies to improve.

Now, you are given the very first task which is to design a database schema for this scenario to store the necessary data.

Few of the requirements for the survey are as follows:

1. The survey can be reused to get feedback for multiple products. It would contain the ratings given by the buyer.
2. A customer is the registered user to whom the shopping account belongs. A customer will take up a survey when he/she will purchase a product.
3. A survey will have multiple questions. These questions are selected from a large dataset containing

Project Submission

PENDING EVALUATION

Deadline May 11, 2023

Upload Project

Your Submission

OnlineStoreStartup.zip ✓

Evaluation Criteria (Total Score: 60)

| | |
|------------|---------------|
| QUESTION 1 | Max Score: 14 |
| QUESTION 2 | Max Score: 14 |
| QUESTION 3 | Max Score: 12 |
| QUESTION 4 | Max Score: 10 |
| QUESTION 5 | Max Score: 10 |

2.

Documents:-C:\Users\n1606\Desktop\Rahim_CodingNinjas\MileStone-8\DBMS\4.Project S

5.Transaction

1.

MCQ - 1

[Send Feedback](#)

When dealing with transactions, any DBMS should be capable of ensuring:

Options

This problem has only one correct answer

Parts of a transaction are not lost due to a failure.

Transactions are free from interference from other users.

Transactions do not make the database inconsistent.

All of the above.

Hurray! Correct Answer

Solution Description

When dealing with transactions, any DBMS should be capable of ensuring that:

1. Transactions are free from interference from other users.
2. Parts of transactions are not lost due to program failures.
3. Transactions don't make the database inconsistent.
4. Incomplete transactions never occur in the database.

MCQ - 2

[Send Feedback](#)

Which of the following is a part of ACID properties of transactions?

Options

a. Duration

b. Atomicity

c. Isolation

d. Only a,b

e. Only b,c

Hurray! Correct Answer

Solution Description

ACID stands for:

1. **Atomicity** : It is also known as the "All or nothing rule". It ensures that either the transaction occurs completely or it will not occur at all.
2. **Consistency** : It ensures that data remains consistent before and after the transaction.
3. **Isolation** : It ensures that parallel transactions remain consistent when they are converted into serializable form.
4. **Durability** : It ensures that data is not lost during the transactions.

2.

MCQ - 3[Send Feedback](#)

Attempts left:

If the system crashes just after the transaction is executed, we don't lose the changes made to the database due to:

Options**This problem has only one correct answer**

- Transactions endurance
- Transactions are atomic, so they are saved
- Durability property
- Isolation property, as the transaction is isolated it doesn't get affected by anything happening in the surroundings.

Hurray! Correct Answer

Solution Description

Durability property ensures all the changes or updates to the database have been recorded and have been stored and will be never lost even if the system crashes.

3.

4. At which state is transaction considered permanent in the database?:Committed
5. In case of any shut down during transaction before commit, which of the following statements is done automatically?:Rollback
6. If the checks by the database recovery system fails, then the transaction is in which state?:Failed

MCQ - 7[Send Feedback](#) c. Failed d. Partially Committed e. Only a,d f. Only b,d g. Only b,c,d

Hurray! Correct Answer

Solution Description

When the transaction is executing, it can only be in two states

1. **Active State**:- The very first state of the life cycle of the transaction, all the read and write operations are being performed and if they execute without any error the transaction comes to a 'partially committed' state, although if any error then it leads to 'failed' state.
Note: All the changes made by the transaction now are stored in the buffer in the main memory.
2. **Partially Committed State**:- After the transaction is executed the changes are saved in the buffer in Main Memory. If the changes made are permanent on the database then the state will transfer to the 'committed' state and if there is any kind of failure, The transaction will go to the 'failed' state

7.**MCQ - 8**[Send Feedback](#)

Attempts left:

When a transaction doesn't complete its execution successfully. We call it:

Options**This problem has only one correct answer**

- Terminated
- Closed
- Failed
- Aborted

Hurray! Correct Answer

Solution Description

Aborted State: When the transaction reaches the failed state, all the changes made in the buffer are reversed. After that the transaction rollback completely. The transaction reaches an aborted state after that. After reaching the aborted state, the failed transaction get removed from the database

8.

Documents:-C:\Users\h1606\Desktop\Rahim_CodingNinjas\MileStone-8\DBMS\5.Transactions

6.Indexing

1.

MCQ - 1
[Send Feedback](#)

An index helps to speed up which operation?

Options

This problem has only one correct answer

- SELECT queries
- WHERE clauses
- Both A and B
- UPDATE Query

Solution Description

Indexing is a method that helps us to locate a record or data present in the memory faster. Indexing boosts the efficiency by minimising the number of disk accesses required when we process a query. This will help to speed up operations with READ operations like- SELECT queries, WHERE clause etc.

2.

MCQ - 2
[Send Feedback](#)

The index consists of

Options

This problem has only one correct answer

- a. list of keys
- b. pointers to the key in the table
- c. both (a) and (b)
- d. none

Solution Description

The index is a data structure that we use to perform indexing. Indexes contain a few database columns:

1. The first column consists of a search key, which contains the copy of the primary key of the table so that the data access time could be reduced which means data can be accessed quickly. The order of the key may or may not be sorted.
2. The second column is the data reference. It contains pointers holding the address of the disk block where the value corresponding to the key is stored.

3.

MCQ - 3
[Send Feedback](#)

Which of the following is true.

1. Sparse indices can be used only if the relation is stored in sorted order of the search key.
2. It is generally faster to locate a record if we have a dense index rather than a sparse index.

Options

This problem has only one correct answer

- Only 1
- Only 2
- None
- Both 1 and 2

Solution Description

Indexing is a method that helps us to locate the data present in the memory efficiently. There are two types of primary indexing:

1. Sparse indexing
2. Dense indexing

In the above question, the main focus is on the sparse indexing technique, a variety of index columns stores an equivalent block address. When data is retrieved, the block address is going to be fetched. That is why sparse indices are smaller in size in comparison to dense Indices. That is why it is generally faster to locate a record if we have a dense index rather than a sparse index. Sparse indices can be used only if the relation is stored in the sorted order of the search key.

4.



MCQ - 4

[Send Feedback](#)

Primary index is further divided into dense index and sparse index. Which of the following is true about both.

- Dense index is not space friendly.
 - Sparse index is not space friendly.
 - Sparse index is faster than Dense index.
 - a and c
- Hurray! Correct Answer

Solution Description

The difference between dense index and sparse index is shown below:

| Dense Index | Sparse Index |
|---|--|
| Space taken for the index table is large. | Space taken for the index table is smaller. |
| Time taken to locate the record is less in comparison | Time taken to locate the record is more. |
| The records in the data file are in specific order and need not be in any kind of cluster or chunk. | The records in the data file are in specific order but the data records are in a cluster or chunk. (i.e. pointers from the index table point to certain data records, and all records between those pointers are considered in one cluster or chunk.) |

5.

MCQ - 5 (Indexing Numerical)

[Send Feedback](#)

A block can hold either 6 records or 12 key pointers. A database contains 48 records, then how many blocks is required to hold the data file and the dense index?

Answer

Type here

72

Solution Description

Ans: 12

Explanation: We know, the database contains 48 records and a block can hold 6 records or hold 12 key pointers. Therefore, how many blocks can hold 48 records?

$$48/6 = 8$$

Similarly, how many blocks for 12 key pointers?

$$48/12 = 4$$

Hence, total blocks = $8+4=12$.

MCQ - 6 (Indexing Numerical)[Send Feedback](#)

Suppose a block can hold either 5 records or 10 (key, pointer) pairs. If there are x number of records and dense indexing is used then how many blocks do we need to hold a data file and dense index?

Answer

Type here

15

6.

Solution Description

Ans : $3*x/10$

Explanation: Total no. of records given = x.

A block can hold 5 records.

We know in dense indexing the number of rows in the index table is the same as those in the main table.

So, How many blocks to hold x records?

$x/5$

Similarly, a block can hold 10 key pointers. So,

How many blocks to hold x key pointers?

$x/10$

Therefore, Total blocks = $x/5 + x/10 = 3*x/10$

MCQ - 7[Send Feedback](#)

Attempts left: 1

Which of the following indexes is defined on an ordered data file and created on a non-key field?

7.

Options

This problem has only one correct answer

- Primary index
- Secondary index
- B-trees
- Clustering index
- Hurray! Correct Answer

Solution Description

Clustering Index is the index that is created and ordered on the basis of the non-primary key attributes of the table. These attributes are not unique for each record. In Clustering index, to fetch a record we group two or more attributes together to get the unique values and create an index out of them. Clustering index is an ordered data file which is created on a non-key field.

8.

MCQ - 8

[Send Feedback](#)

Attempts left: 0

Which of the following will be considered as multi level indexing?

Options

This problem has only one correct answer

- Clustering indexing
- Secondary indexing
- Primary Indexing
- All of them

 Hurray! Correct Answer

Solution Description

Secondary index is taken into consideration when the size of datafile increases i.e. when the size of the table increases, sparse indexing starts to slow down. To overcome this we introduce another level of indexing that is known as secondary indexing. In this, we select a huge chunk of columns initially and put it up at the first level of indexing which is known as primary level indexing. The data of primary level indexing is stored in primary memory. After this, each chunk is divided into smaller ranges. This is known as the second level of indexing, this is stored in the secondary memory along with the actual data file. Secondary indexing is also known as multilevel indexing.

9.

MCQ - 9

[Send Feedback](#)

Attempts

Which of the following operations does indexing slows down.

1. DELETE
2. INSERT
3. SELECT
4. READ

Options

This problem has only one correct answer

- Only 1,3
- Only 2,4
- Only 1,2
- Only 1,2,4

 Hurray! Correct Answer

Solution Description

Indexing results in the reduction of the speed of execution of write operations in the memory. Major Write operations are INSERT, UPDATE and DELETE operations.

10.

Documents:-C:\Users\n1606\Desktop\Rahim_CodingNinjas\MileStone-8\DBMS\6.Indexing

Options

Attempts left: 0

This problem has only one correct answer

- Primary Indexing
- Secondary Indexing with key
- Clustered Indexing
- Secondary Indexing with non-key

 Hurray! Correct Answer

Solution Description

When the indexing is done on the basis of the primary key of the data file it is known as the primary indexing. During the primary indexing, the data file is already ordered to support the primary key. Primary Index is an ordered file whose records are of fixed length with two fields. The primary field of the index replicates the primary key of the information entered in an ordered manner, and therefore the second field of the ordered file contains a pointer that points to the data block where a record containing the keys is available.

7.NoSQL

MCQ - 1

[Send Feedback](#)

NoSQL databases are used usually for handling large volumes of _____ data.

Options

Attempts left: 1/2

This problem has only one correct answer

- Structured
- Semi-structured
- Unstructured
- None of the above

 Hurray! Correct Answer

Solution Description

NoSQL is popularly misunderstood as No SQL but it actually means Not only SQL database. NoSQL is also claimed as the next-generation database. The Relational databases we use are not designed to manage all kinds of data efficiently, like large volumes of unstructured data whereas NoSQL databases are designed to manage these data efficiently.

1.

MCQ - 2

[Send Feedback](#)

Attempts left: 1

What is true for NoSQL database ?

Options

This problem has only one correct answer

- NoSQL cannot store structured data
- NoSQL is a database that is built on ways and means to store data in format other than tables.
- NoSQL uses tables to store data and is an enhanced form of RDBMS.
- None

 Hurray! Correct Answer

Solution Description

NoSQL is a schema-free database. The data structure is used for storing is different from what we learned in relational databases. Data structures used here are more flexible than the relation used in relational databases. Also, the data is not stored in a table format. In NoSQL, data is stored in document databases, key-value stores, wide-column databases, and graph databases.

2.

MCQ - 3

[Send Feedback](#)

NoSQL stands for:

Options

This problem has only one correct answer

- Advance SQL
- Not SQL
- Not Only SQL
- New Optimized SQL

 Hurray! Correct Answer

Solution Description

NoSQL, popularly misunderstood as No-SQL but it actually means Not Only SQL database.

3.

MCQ - 4

[Send Feedback](#)

NoSQL databases are often referred to as:

Options

This problem has only one correct answer

- Object-oriented databases
- Network databases
- Relational databases
- Distributed databases

 Hurray! Correct Answer

Solution Description

NoSQL Databases are referred to as distributed databases. It's a mechanism for storing and retrieving data and is also claimed as the next-generation database. They are used in real-time web applications and big data and their usage is peaking over time. NoSQL databases go against the conventional attitude of storing information at a single location, instead, it distributes and stores information over a set of multiple servers.

4.

MCQ - 5

[Send Feedback](#)

Most NoSQL databases support automatic _____ meaning that you get high availability and disaster recovery.

Options

This problem has only one correct answer

- processing
- scalability
- replication
- all of the mentioned

 Hurray! Correct Answer

Solution Description

NoSQL databases are highly available due to their auto replication feature i.e. whenever any kind of failure happens data replicates itself to the preceding consistent state. This helps in high availability and data recovery.

5.

MCQ - 6

[Send Feedback](#)

What do we call a phenomenon when we add more computational power to our existing machine?

Options

This problem has only one correct answer

- Sharding
- Scale up
- Horizontal Scaling
- None of the above

 Hurray! Correct Answer

Solution Description

Explanation: Vertical scaling means that you scale by adding more power (CPU, RAM) to an existing machine. It is also known as Scaling up.

6.

7.

MCQ - 7
[Send Feedback](#)

What are the advantages of NoSQL?

Can scale up to great extent

All of the above

None

 Hurray! Correct Answer

Solution Description

Advantages of NoSQL are

1. **Horizontal Scaling:** Scaling out means distributing the database throughout multiple computers when the load increases. Therefore, it can handle more traffic simply by adding more servers to the database. It can scale up to great extent.

2. **High Availability:** NoSQL databases are highly available due to their auto replication feature i.e. whenever any kind of failure happens data replicates itself to the preceding consistent state. It is available for all types of data including semi-structured and volatile data.

3. **Less management:** NoSQL databases require minimum to zero management, they are equipped to auto-repair data distribution and due to it having flexible data models that result in reducing administration and performance difficulties. This results in very high throughput in read/write operations.

4. **Flexible Schema:** Relational databases are used to have a defined schema, which is quite an issue because in case you need to make any modification or addition to the database we need to change the schema as well every time.

8.

MCQ - 8
[Send Feedback](#)

Attempts left: 0/2

What does RDBMS ensure but NoSQL doesn't?

Options

This problem has only one correct answer

ACID properties

No Redundancy

Both

None

 Hurray! Correct Answer

Solution Description

When compared to SQL or relational databases, NoSQL database is designed for storing data of many types but it lacks functionalities like it doesn't support transaction properties like ACID, etc.

Data Redundancy means having the same copies of data in a database. It is not accomplished in NoSQL but it is done in RDBMS.

9.

MCQ - 9
[Send Feedback](#)

Attempts left: 4/4

Which of the following is usually not a feature in NoSQL?

Options

This problem has only one correct answer

Easy scaling

Creating fixed schema

High availability

None

 Hurray! Correct Answer

Solution Description

Relational databases are used to have a defined schema, which is quite an issue because in case you need to make any modification or addition to the database we need to change the schema as well every time. To overcome this NoSQL creates a flexible schema.

10.

MCQ - 10

[Send Feedback](#)

What are the disadvantages of NoSQL?

- b. If the data requirements are not clear, we can use a flexible schema.
- c. NoSQL databases don't have the reliability functions which Relational Databases have.
- d. a.b
- e. a.c
- f. All of the above
- g. None

 Hurray! Correct Answer

Solution Description

The disadvantages of NoSQL:

1. When compared to SQL or relational databases, a NoSQL database is designed for storing data of many types but it lacks functionality like it doesn't support transaction properties like ACID.
2. The process of managing big data on NoSQL is quite complex as compared to RDBMS.
3. It doesn't support data entry with constraints like RDBMS
4. Other concerns for NoSQL are standardization, Interfaces and Interoperability and also less community support.
5. It is also not compatible with SQL, although few NoSQL databases do use SQL but many don't.

11.

MCQ - 11

[Send Feedback](#)

Redis is a database type based on:

Options

This problem has only one correct answer

Attempts left:

- SQL
- Key-value NoSQL
- Relational data model
- JSON Database

 Hurray! Correct Answer

Solution Description

A key-value pair consists of a value that is basically any piece of data or information is saved with a key to identify its location at the time of operation. Database which stores data in the form of key-value pair is known as key-value No-SQL database. Redis is a popular key-value NoSQL database. The other examples of key-value databases are Amazon AWS, DynamoDB, Oracle NoSQL, Aerospike.

12.

MCQ - 12

[Send Feedback](#)

Key-value NoSQL, is designed for managing:

Options

This problem has only one correct answer

- Associative arrays
- Unstructured data
- Json data files
- All of them

 Hurray! Correct Answer

Solution Description

Explanation: In Key-Value database, we can store any type of data in the value.

Attempts left: 

MCQ - 13

[Send Feedback](#)

Key Value database should not be used, if there are:

Options

This problem has only one correct answer

- Heavy updates on the data.
- Small data chunks of different format to be stored.
- Heavy reads on the data.
- None

 **Hurray! Correct Answer**

Solution Description

When there are heavy write operations (insert, update, delete, etc) on the database key-value pair database should not be used because of the reason that query is performed on one key at a time. It takes a lot of time to do heavy write operations on the database. It's difficult to find the key-value pair we want to update because we cannot search using the value.

13.

MCQ - 14

[Send Feedback](#)

In what database, while recording the data, the timestamp of entering that data is also recorded.

Options

This problem has only one correct answer

- Relational Database with a counter
- Key-value database
- Column based NoSQL database
- All of them

The solution to this problem has been viewed

Solution Description

Column based No-SQL database records the timestamp of data, while recording the database.

14.

MCQ - 15

[Send Feedback](#)

What is a unique identifier of the data in a columnar database?

Options

This problem has only one correct answer

- Row id
- Key
- Timestamp
- Can be any column

 **Hurray! Correct Answer**

Solution Description

Columnar NoSQL Database stores data in columns instead of rows. It speeds up the read and write process from the memory to return a query faster. It stores data in a way that greatly improves disk I/O performance. So, the unique identifier in the data become the row_id of the database

15.

MCQ - 16[Send Feedback](#)

Attempts left

Which property of the columnar database makes it apt for a content management system.

16.

Options

This problem has only one correct answer

- Aggregation
- Scalability
- Flexible
- Compression

 Hurray! Correct Answer

Solution Description

Explanation: Compression: Column stores are very efficient at data compression and this is why it is used for content management systems.

17.

MCQ - 17[Send Feedback](#)

Attempts left: 12

In Document based NoSQL database, data models contains:

Options

This problem has only one correct answer

- Tables
- Documents
- Key value pair
- None

 Hurray! Correct Answer

Solution Description

Document Based NoSQL database are very similar to key-value databases. Here information is stored in a document along with a key pair. It uses the internal structure of the document for identification and storage. The data is saved as an instance in the database in comparison to how we do it in relational databases i.e. in tabular form. This method of storing data makes it easier for users to map the data in the database.

18.

MCQ - 18[Send Feedback](#)

Attempts

Which of the following implements ACID transactions:

Options

This problem has only one correct answer

- a. Key-value Nosql database
- b. Relational database
- c. Document based nosql database
- d. b and c

 Hurray! Correct Answer

Solution Description

ACID property is implemented by: Relational as well as Document-based NoSQL database. Key-value pair doesn't implement ACID properties.

MCQ - 19[Send Feedback](#)

Attempts left: 12

eBay has many of its projects running on MongoDB, which kind of database is being used?

Options**This problem has only one correct answer**

- Columnar Nosql database
- Key-value Nosql database
- Document based nosql database
- none

Hurray! Correct Answer

Solution Description

MongoDB is a type of Document type database. It stores data in the form of JSON format. MongoDB is developed by MongoDB Inc. and licensed under the Server Side Public License. Some real-life applications of document-based databases:

1. Blogging sites like Twitter
2. Analytical platforms
3. E-commerce platforms like Amazon, eBay.
4. Content management systems.

19.

MCQ - 20[Send Feedback](#)

Attempts left: 11

Which of the following databases contains edges and nodes?

Options**This problem has only one correct answer**

- Columnar NoSQL database
- Key-value NoSQL database
- Document based NoSQL database
- Graph based NoSQL database

Hurray! Correct Answer

Solution Description

Graph Based NoSQL is a collection of related objects. Each node in the graph represents an entity, where all of them are interconnected, the edge through which nodes are connected defines relationships among them.

20.

MCQ - 21[Send Feedback](#)

When we need to store a database of social websites like Facebook, what database should be used?

Options**This problem has only one correct answer**

- Columnar NoSQL database
- Graph based NoSQL database
- Key-value NoSQL database
- Document based NoSQL database

Hurray! Correct Answer

Solution Description

Real-Life applications where Graph-based database is used:

1. It can work really well when working on social networks.
2. It can be used to support transportation systems as well.
3. It can be used to detect fraud in transactions.
4. It can be used to store criminal network data.

21.

22.

Problem Result

MCQ - 22

[Send Feedback](#)

Which of the following can be stored using graph-based NoSQL database?

Medical history of a person ✓

Fraud Detection ✓

Recommendation engine ✓

Network and IT operations ✓

Hurray! Correct Answer

Solution Description

The graph-based representation will help understand all these situations better because it will help define the relationship (if any). Like for network and IT operations, how are employees connected. Professionals these days actively use LinkedIn to connect.

For the Recommendation Engine, it will depend upon the searches/purchases we have made, a relationship will be established between them and hence recommendations will be made.

For the medical history of a person, there could be cases where certain diseases make a person prone to other diseases as well. So that relationship could be established. It could also be used to explain a condition if anything is being inherited in the genes.

For Fraud detection, it works if any odd amount of money is being withdrawn from the account. Now to get that judgement of odd, the database contains previous all the transactions made, along with the time they were made.

These form a relationship in-between them and if something is observed out of trend/rules of relationship, fraud is detected.

Any other database will make this process of forming relationships very tedious, hence graph-based databases are used which are quite simple to

Attempts left: 4/4

23.

MCQ - 23

[Send Feedback](#)

Out of the following, which is an apt reason to use an SQL database?

It can easily store unstructured data.

It can enable development in the cloud

It's ACID-compliant

None

Hurray! Correct Answer

Solution Description

Some of the reasons why we should use SQL databases.

1. SQL databases are long-established with a fixed schema design and a set structure.
2. SQL databases are ideal for applications that require multi-row transactions such as an accounting system or for legacy systems that were built for a relational structure.
3. SQL databases are in accordance with ACID properties.

Attempts left: 4/4

24.

MCQ - 24

[Send Feedback](#)

Which of the following databases is ideal for being used for User's session data retrieval?

Columnar Nosql database

Graph based nosql database

Key-value Nosql database

Document based nosql database

Hurray! Correct Answer

Solution Description

Explanation: Key-value stores are ideal for storing and retrieving session data at high speeds. The unique Id generated by cookies act as a key while the other information such as user profiles act as a value.

25.

MCQ - 25

[Send Feedback](#)

Which situation from the following will be apt to use key-value stores?

Options

This problem has only one correct answer

- Blogging
- Managing Web Advertisements
- Google maps
- Manage data warehouse

 Hurray! Correct Answer

Solution Description

Explanation: Key-Value databases are mainly used by web advertisement companies. On the basis of users' online activity, web advertisement companies decide which advertisement to show to the user. It is also important to note that serving advertisements should be fast enough. It is important to target the right advertisement to the right customer in order to receive more clicks and hence to maximize the profits. Combination of factors such as user's tracked activity online, language and location determine what a user is interested in forms the key while all other factors that are needed to serve the advertisement better are kept as the value in key-value databases.

Attempts left:

26.

MCQ - 26

[Send Feedback](#)

Which database is a smart choice for data warehousing and big data processing?

Options

This problem has only one correct answer

- Columnar Nosql database
- Graph based nosql database
- Key-value Nosql database
- Document based nosql database

 Hurray! Correct Answer

Solution Description

Explanation: A columnar database stores data by columns rather than by rows, which makes it suitable for analytical query processing, faster retrieval and thus for data warehouses

27.

MCQ - 27

[Send Feedback](#)

Which of the following databases will be the best choice to maintain the Images data if required for any sort of project?

Options

This problem has only one correct answer

- Columnar Nosql database
- Graph based nosql database
- Key-value Nosql database
- Document based nosql database

 Hurray! Correct Answer

Solution Description

Explanation: CouchDB, will contain a bucket for the JSON documents containing the metadata about each image. Another bucket can also be used to store the thumbnail of the image which might work as key for the data data structure.

28.

MCQ - 28

[Send Feedback](#)

Attempts left:

Out of the following, for which situation a graph based database will be apt?

Options

This problem has only one correct answer

- Semantic Search
- Leaderboard for online games
- Content management
- Shopping cart at any online e-commerce website.

 Hurray! Correct Answer

Solution Description

Explanation: Semantic search is search with meaning, as opposed to "normal" search where the search engine looks for literal matches of the queried words without understanding the overall meaning of the query.

It takes into account the context of search, location and the intent of queries. It understands the searcher's intent and the contextual meaning of terms in the Web, or on an enterprise data storage, and provides more relevant results.

Hence, graph based database will be able to workout these relationships and come up with better results.

Documents:-C:\Users\N1606\Desktop\Rahim_CodingNinjas\MileStone-8\DBMS\7.NoSQL

8. Database Types

1.

MCQ - 1

[Send Feedback](#)

Attempts left: 

Choose the correct option to fill in the blanks.

Database _____ is the logical design of the database, and the database_____ is a snapshot of the data in the database at a given instant in time.

Options

This problem has only one correct answer

- Instance, Schema
- Relation, Schema
- Relation, Domain
- Schema, Instance

 Hurray! Correct Answer

Solution Description

A **database schema** provides a logical view of the database. It is like a skeleton structure for the database. A database schema is also known as the design of the database. The **database instance** is also known as the current state or database state. Database instance provides us with information about what data is stored in a database at a particular moment.

MCQ - 2
[Send Feedback](#)

Which of the following is TRUE regarding Referential Integrity?

Options

This problem has only one correct answer

- Every primary-key value must match a primary-key value in an associated table
- Every foreign-key value must match a primary-key value in an associated table
- Every foreign-key value must match a foreign-key value in an associated table
- Every primary-key value must match a foreign-key value in an associated table

 Hurray! Correct Answer

Attempts left: 0

2.

MCQ - 3
[Send Feedback](#)

Which of the following is true concerning an OODBMS?

Options

This problem has only one correct answer

- They are overtaking RDBMS for all applications.
- They have the ability to store complex data types on the Web.
- They are most useful for traditional, two-dimensional database table applications.
- None of the above

 Hurray! Correct Answer

Solution Description

Explanation: OODBMS can handle complex data relations and more variety of data types than standard relational databases.

3.

MCQ - 4
[Send Feedback](#)

Attempts left: 02

Which of these is most like a hierarchical database?

Options

This problem has only one correct answer

- Spreadsheet
- Family tree
- Book
- All of the above

 Hurray! Correct Answer

Solution Description

In the hierarchical database, the data is stored in the form of records and organised into a tree-like structure, in which a node can have as many sub-nodes as it wants, connected through edges. Some examples of hierarchical databases are IBM's Information Management System (IMS) and the RDM Mobile. Hierarchical Databases structurally look like a family tree.

4.

MCQ - 5
[Send Feedback](#)

Attempts left:

What is the basic relationship in a hierarchical database?

Options

This problem has only one correct answer

- Siblings
- Grandparent-grandchild
- Data is not related
- Parent-child

 Hurray! Correct Answer

Solution Description

The hierarchical database model mandates that every child record has just one parent, whereas each parent record can have one or more child records, so as to retrieve data from a hierarchical database, the entire tree must be traversed ranging from the basis node.

5.

6.

MCQ - 6
[Send Feedback](#)

Network models are complicated by physical keys, but the Relation model is :

Options

This problem has only one correct answer

- faster because it uses logical keys
- slower because it uses physical keys
- faster because it uses physical keys
- slower because it uses logical keys

 Hurray! Correct Answer

Solution Description

Explanation: logical keys here refer to primary key and foreign key which are more apt for relational models to work.

7.

MCQ - 7
[Send Feedback](#)

Attempts left: 

A network structure _____.

Options

This problem has only one correct answer

- is conceptually simple
- is a physical representation of the data
- allows a many-to-many relationship
- will be the dominant database of the future

 Hurray! Correct Answer

Solution Description

A network database is a modified form of hierarchical database in which a member entity (similar to child entity in a hierarchical database) can have multiple relations with different owner entities (similar to parent entity in hierarchical database). Hence allowing a many-to-many relationship.

Documents:-C:\Users\N1606\Desktop\Rahim_CodingNinjas\MileStone-8\DBMS\8.Database Types

9.Database Optimization

1.

MCQ - 1
[Send Feedback](#)

A transaction can proceed only after the concurrency control manager _____ the lock to the transaction.

Options

This problem has only one correct answer

- Acquires
- Allocates
- Grants
- None

 Hurray! Correct Answer

Solution Description

A transaction can proceed only after the concurrency control manager grants the lock to the transaction.

MCQ - 2[Send Feedback](#)

Which of the following concurrency control protocols ensure both conflict serializability and free from deadlock?

This problem has only one correct answer

- a. Timestamp ordering
- b. 2 Phase locking
- c. Both (a) and (b)
- d. None

Hurray! Correct Answer

Solution Description

2-phase locking is a concurrency control method that ensures conflict serializability. The protocol utilizes locks, applied by a transaction to data, which may block other transactions from accessing the same data during the transaction's life. The timestamp-based concurrency control algorithm is a non-lock concurrency control method. This method also ensures conflict serializability.

We know that deadlock is a situation where the transactions try to access lock on already locked data items. So, 2 phase locking may lead to deadlock states that can result in the mutual blocking of two or more transactions. But in timestamp, each transaction is allocated with the time slot. Hence it can't enter a deadlock. So Timestamp ordering ensures both the conflict serializability and is free from deadlocks

2.

MCQ - 3[Send Feedback](#)

Attempts left:

Concurrency control in RDBMS is important for which of the following reasons ?

Options

This problem has only one correct answer

- To ensure data integrity when updates occur to the database in a single -user environment.
- To ensure data integrity when reads occur to the database in a single-user environment.
- To ensure data integrity when updates occur to the database in a multi-user environment.
- To ensure data integrity when reads occur to the database in a multi-user environment.

Hurray! Correct Answer

Solution Description

Concurrency control is the management procedure that controls concurrent execution of the multiple operations done by multiple users at the same time on the same database. We need concurrency control to manage these concurrent executions of the operations and help maintain consistency in the database

3.

MCQ - 4[Send Feedback](#)

Consider the transactions:

| T1 | T2 | T3 |
|----------|----------|----------|
| Read(X) | Read(Z) | Read(X) |
| Write(Y) | Write(W) | Write(P) |
| Write(Z) | Read(X) | |

Which of these is are in conflict?

This problem has only one correct answer

- T1 and T2, T1 and T3
- T1, T2 and T3
- T1 and T3, T2 and T3
- T1 and T2

Hurray! Correct Answer

Solution Description

Two operations are said to be conflicting if all conditions satisfy:

1. They belong to different transactions.
2. They operate on the same data item.
3. At Least one of them is a write operation.

We can see that T1 is reading X and writing on Y and Z . Similarly T2 is reading Z and X plus writing on W. We can notice that both the transactions have Z in common, which can lead to conflict. While X is also common for both the transactions, it would not lead to conflict as both T1 and T2 are only performing read on it

4.

MCQ - 5[Send Feedback](#)

Attempts left:

Which of the following Concurrency controls is prone to deadlocks.

Options

This problem has only one correct answer

- a. Timestamp Based Concurrency Control
- b. Lock Based Concurrency Control
- c. Both (a) and (b)
- d. None

Hurray! Correct Answer

Solution Description

Explanation: Deadlock, a situation where the transactions try to access lock on already locked data items. Whereas in timestamp, each transaction is allocated with the time slot. Hence it can't enter a deadlock.

5.

6.

MCQ - 6
[Send Feedback](#)

Which of the following is not an advantage of database clustering?

- Data Redundancy
- Increased Availability
- Decreased Availability
- Hurray! Correct Answer

Solution Description

Clustering is the process of combining more than one server or instance holding the same database. We can say a cluster is a set of replicated servers.

Clustering helps us with a lot of features like

1. **Data Redundancy:** Clustering databases helps with data redundancy, as we store the same data at multiple servers. The redundancy that clustering offers is required and is quite certain due to the synchronization.
2. **Load Balancing:** Clustering of databases also helps the servers with the load balancing i.e., if there's only one server and there are a lot of requests coming in to access the database then it may become difficult for a server to handle all the requests. Clustering helps to reduce load balancing.
3. **Increased Availability:** An availability of a database is defined as the time when we can access the database. Now as we have clusters of servers available, even if one of the databases is going through a transaction, now the other servers can be used to access the database with the help of a load balancer. Also, even if a server fails, the database will be available. Hence, due to clustering, the databases have high availability.

Options

This problem has only one correct answer

- a. Replication
- b. Sharding
- c. Both (a) and (b)
- d. None

Hurray! Correct Answer

Attempts left: 0/2

Solution Description

Sharding is a method of partitioning and storing a single logical set of data in multiple databases which is stored on multiple servers. It is an extension of horizontal partitioning. Databases use sharding to support deployments with very large data sets by dividing the data over multiple servers.

7.

MCQ - 7
[Send Feedback](#)

Database uses _____ to support deployments with very large data sets by dividing the data over multiple servers.

Options

This problem has only one correct answer

- a. Dealing with huge dataset, which one server alone cannot handle.
- b. The requests to database access are taking longer time to be accepted i.e. long response time.
- c. Both (a) and (b)
- d. None of the Above

Hurray! Correct Answer

Attempts left: 0/2

Solution Description

Partitioning is a technique that is used to divide stored database objects into separate servers. Due to this, there is an increase in performance as well as the increase in controllability of the data. We can manage huge chunks of data optimally. Partitioning is committed when we are dealing with a huge dataset or the request are taking more time than expected.

8.

9.

MCQ - 9

[Send Feedback](#)

Some of the columns of a relation are at different sites in which of the following techniques?

Options

This problem has only one correct answer

Data Replication

Horizontal Partitioning

Vertical Partitioning

Horizontal and Vertical Partitioning

Hurray! Correct Answer

Solution Description

To partition the data there are two techniques:

1. Vertical Partitioning: In this, we partition the given data vertically i.e column-wise. So, if we are provided with table students with attributes student id, name, courseid, address, we can store this data by distributing it among servers where studentid, name is one server, courseid in another and address in the third one.
2. Horizontal Partitioning: In this, we partition the given data horizontally i.e. row-wise. So, have chunks of a certain size of data stored at different servers.

10.

MCQ - 10

[Send Feedback](#)

A distributed database is which of the following?

Options

This problem has only one correct answer

A loose collection of file that is spread to multiple locations and is interconnected by a network.

A loose collection of file that is limited to one location.

A single logical database that is limited to one location.

A single logical database that is spread to multiple locations and is interconnected by a network.

Hurray! Correct Answer

Attempts left: 4

Solution Description

A distributed database is not limited to at least one system, it covers different sites, i.e., on multiple computers or over a network of computers. A distributed database system is found on various sites that don't share physical components. This might be required when a specific database must be accessed by various users globally. It must be managed in such a way that for the users it's like one single database.

11.

MCQ - 11

[Send Feedback](#)

Which of the following is true about the process of sharding?

Options

This problem has only one correct answer

a. RDBMS locking method

b. Extension of Horizontal Partition

c. Technique for partitioning the data

d. both (b) and (c)

Hurray! Correct Answer

Attempts left: 4

Solution Description

Sharding is a method of partitioning and storing a single logical set of data in multiple databases which is stored on multiple servers. It is an extension of Horizontal partitioning. The smaller chunks of the data that are created after sharding are called Shards.

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10.SQL queries Assessment

1. ALTER TABLE transactions ADD COLUMN transaction_type VARCHAR(225);DESC transactions;
2. CREATE TABLE customers (

```
customer_id VARCHAR(20) PRIMARY KEY,  
customer_name VARCHAR(225),  
phone_no INT,  
city VARCHAR(200),  
pin_code INT  
);
```

DESC customers;

3. SELECT * FROM product WHERE seller LIKE '_____n' ;
4. SELECT COUNT(*) AS orders_delivered

FROM orders

WHERE YEAR(est_delivery_date) = 2021
AND MONTH(est_delivery_date) = 12;

5. SELECT COUNT(*) AS orders_delivered

FROM orders

WHERE YEAR(est_delivery_date) = 2021
AND MONTH(est_delivery_date) = 12;

6. CREATE TABLE giftList LIKE product;

INSERT INTO giftList SELECT * FROM product;

```
SELECT table_name, column_name, data_type  
FROM information_schema.columns  
WHERE table_name = 'giftList'  
ORDER BY column_name ASC;
```

7. SELECT * FROM product LIMIT 3, 6;
8. SELECT price AS maximum_price
- FROM product
- WHERE price < (SELECT MAX(price) FROM product)
- ORDER BY price DESC
- LIMIT 1;
9. SELECT *
- FROM product
- ORDER BY price DESC
- LIMIT 1 OFFSET 6;
10. SELECT *
- FROM product
- WHERE item_id<=(SELECT COUNT(item_id)/3 FROM product);
11. SELECT seller,COUNT(*) AS nop
- FROM product
- GROUP BY seller;
12. SELECT DISTINCT price
- FROM product
- ORDER BY price ASC
- LIMIT 5;
13. SELECT DISTINCT price
- FROM product
- ORDER BY price DESC
- LIMIT 5;

14. SELECT (SELECT COUNT(*) FROM product WHERE youSave > 4000 AND
INSTOCK = 'Y') * 100 / (SELECT COUNT(*) FROM product WHERE INSTOCK = 'Y')
AS percentage
15. SELECT * FROM product LIMIT 20,4;
16. SELECT product_id, seller, COUNT(*)
FROM product
GROUP BY product_id, seller
HAVING COUNT(*) > 1;
17. SELECT Distinct p.product_id, p.p_name, p.inStock, p.seller, q.countSame
FROM product p
INNER JOIN (SELECT product_id, p_name, inStock, COUNT(*) as countSame
FROM product
GROUP BY product_id, p_name, inStock
HAVING COUNT(*) > 1
AND inStock = "Y") q
ON p.product_id = q.product_id
AND p.p_name = q.p_name
AND p.inStock = q.inStock
ORDER BY p.product_id, p.p_name, p.inStock, p.seller;
18. SELECT AVG(youSave) AS AVG(TOTAL)
FROM orders o
JOIN product p ON o.product_id = p.product_id
JOIN seller s ON p.seller_id = s.seller_id
WHERE s.seller IN ('Maple store', 'Kukreja Telecom Store');

19. SELECT product_id, p_name, MIN(price), (AVG(youSave)*100)/SUM(youSave) AS avgP
FROM product GROUP BY product_id, p_name HAVING COUNT(*)>1;

20. SELECT DISTINCT p.p_name, o.customer_id, c.customer_name
FROM product p
JOIN orders o ON p.product_id = o.product_id
JOIN customer c ON o.customer_id = c.customer_id;

21. SELECT product_id, count(product_id)
FROM orders GROUP by product_id;

22. SELECT t.transaction_id, o.product_id
FROM transactions t
JOIN orders o ON t.transaction_id = o.transaction_id;

23. SELECT p.p_name, t.payment_date, t.delivery_date
FROM transactions t
JOIN orders o ON t.transaction_id = o.transaction_id
JOIN product p ON o.product_id = p.product_id
ORDER BY t.delivery_date;

24. SELECT o.order_id, o.product_id, o.customer_id, t.transaction_id
FROM orders o
INNER JOIN transactions t ON o.transaction_id = t.transaction_id
WHERE t.transaction_status = 'not completed';

25. SELECT DISTINCT p.p_name, o.payment_date, o.est_delivery_date, t.transaction_status
FROM
product AS p
INNER JOIN

```
orders AS o  
ON p.product_id = o.product_id  
INNER JOIN  
transactions AS t  
ON  
o.transaction_id = t.transaction_id  
ORDER BY  
payment_date;
```

26. SELECT c.customer_name, o.order_id

```
FROM orders o  
JOIN customer c ON o.customer_id = c.customer_id  
WHERE c.customer_name LIKE '%d%';
```

27. SELECT c.customer_id, SUM(o.checkout_price) AS totalpayment

```
FROM customer as c  
LEFT JOIN orders as o ON o.customer_id = c.customer_id GROUP BY customer_id;
```

28. -- Create a clone of the "product" table

```
CREATE TABLE cloneListPro LIKE product;
```

```
-- Print the schema of the "cloneListPro" table
```

```
SELECT column_name, data_type  
FROM information_schema.columns  
WHERE table_name = 'cloneListPro'  
ORDER BY column_name;
```

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