

Q1: Write an SQL query to fetch the employee ID, name, join date, salary, and salary date of a particular employee (e.g., Employee_ID = 'E101') for salaries received 2, 4, 6, 8, and 10 years after joining.

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SELECT
    e.employee_id,
    e.employee_name,
    e.join_date,
    s.salary,
    s.salary_date
FROM Employee e
JOIN Salary s
ON e.employee_id = s.employee_id
WHERE e.employee_id = 'E101'
AND TIMESTAMPDIFF(YEAR, e.join_date, s.salary_date) IN (2, 4, 6, 8, 10);
```

Q2: Difference Between DBMS and RDBMS.

The following are the key differences based on features:

1. The Structure of Data

In a DBMS data is organized in a hierarchical or navigation format which looks like a tree with branches. In an RDBMS data is organized in a relational format which uses tables with clearly defined rows and columns.

2. How Data is Connected

A DBMS stores data as separate files that have no logical link or connection to each other. An RDBMS uses primary keys and foreign keys to create strong connections between different tables

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3. Handling Repeated Information

Data redundancy or the repetition of information is very common in a DBMS because it lacks organization. An RDBMS uses a process called normalization to eliminate duplicate data and make the system more efficient.

4. Accuracy and Reliability

A DBMS does not guarantee data accuracy if the system crashes or if two people try to change the same file. An RDBMS follows ACID properties which ensure that all database transactions are processed reliably and accurately.

5. Managing Large Volumes

A DBMS is best suited for simple applications and small businesses that do not have much data. An RDBMS is designed to handle massive amounts of data and complex queries for large organizations.

6. Security and Access Control

Security is very basic in a DBMS and usually only involves simple password protection for a single user. An RDBMS provides advanced security features like role based access control to manage what many different users can see.

7. Speed of Operations

Searching for a specific piece of information is slow in a DBMS because the system must look through individual files. Searching is very fast in an RDBMS because it uses indexing and a structured approach to find data quickly.

8. Use of SQL

A DBMS does not use a standard language like SQL and often requires specific programming to retrieve data. An RDBMS uses Structured Query Language or SQL which is a universal language for managing and querying data.

9. Multi User Collaboration

A DBMS is generally a single user system where only one person can edit the data at a time. An RDBMS supports multiple users working on the database at the same time without interfering with each other.

10. Hardware and Software Needs

A DBMS is a lightweight system that requires very low memory and basic computer hardware to run. An RDBMS is a heavy system that needs more powerful hardware and more complex software to function correctly.