**Module 3 (Testing on Live Application)**

• What is RDBMS?

A relational database management system (RDBMS) is a program used to create, update, and manage relational databases. Some of the most well-known RDBMSs include MySQL, PostgreSQL, MariaDB, Microsoft SQL Server, and Oracle Database

• What is SQL?

* SQL stands for Structured Query Language
* SQL lets you access and manipulate databases
* SQL became a standard of the American National Standards Institute (ANSI) in 1986, and of the International Organization for Standardization (ISO) in 1987

• Write SQL Commands

* SELECT - extracts data from a database.
* UPDATE - updates data in a database.
* DELETE - deletes data from a database.
* INSERT INTO - inserts new data into a database.
* CREATE DATABASE - creates a new database.
* ALTER DATABASE - modifies a database.
* CREATE TABLE - creates a new table.

• What is join?

A JOIN clause is used to combine rows from two or more tables, based on a related column between them.

• Write type of joins.

INNER JOIN, OUTER JOIN, CROSS JOIN, SELF JOIN RIGHT JOIN,LEFT JOIN.

• How Many constraint and describes it self

* NOT NULL CONSTRAINT  
  NOT NULL constraints prevent null values from being entered into a column.
* UNIQUE CONSTRAINTS

*Unique constraints* ensure that the values in a set of columns are unique and not null for all rows in the table. The columns specified in a unique constraint must be defined as NOT NULL. The database manager uses a unique index to enforce the uniqueness of the key during changes to the columns of the unique constraint.

* PRIMARY KEY   
  You can use primary key and foreign key constraints to define relationships between tables.
* TABLE CHECK CONSTRAINTS  
  A *check constraint* (also referred to as a *table check constraint*) is a database rule that specifies the values allowed in one or more columns of every row of a table. Specifying check constraints is done through a restricted form of a search condition.
* [Foreign key (referential) constraints](https://www.ibm.com/docs/en/SSEPGG_11.5.0/com.ibm.db2.luw.admin.dbobj.doc/doc/c0020153.html)  
  *Foreign key constraints* (also known as *referential constraints* or *referential integrity constraints*) enable definition of required relationships between and within tables.
* [Informational constraints](https://www.ibm.com/docs/en/SSEPGG_11.5.0/com.ibm.db2.luw.admin.dbobj.doc/doc/c0023324.html)  
  An *informational constraint* is a constraint attribute that can be used by the SQL compiler to improve the access to data. Informational constraints are not enforced by the database manager, and are not used for additional verification of data; rather, they are used to improve query performance.

• Difference between RDBMS vs DBMS

|  |  |
| --- | --- |
| RDMS | DBMS |
| Data stored is in table format | Data stored is in the file format |
| Multiple data elements are accessible together | Individual access of data elements |
| Data in the form of a table are linked together | No connection between data |
| Normalisation is not achievable | There is normalisation |
| Support distributed database | No support for distributed database |
| Data is stored in a large amount | Data stored is a small quantity |
| Here, redundancy of data is reduced with the help of key and indexes in RDBMS | Data redundancy is common |
| RDBMS supports multiple users | DBMS supports a single user |
| It features multiple layers of security while handling data | There is only low security while handling data |
| The software and hardware requirements are higher | The software and hardware requirements are low |
| Oracle, SQL Server. | XML, Microsoft Access. |

• What is API Testing

**API Testing(**application program interface) is a software testing type that validates Application Programming Interfaces (APIs). The purpose of API Testing is to check the functionality, reliability, performance, and security of the programming interfaces. In API Testing, instead of using standard user inputs(keyboard) and outputs, you use software to send calls to the API, get output, and note down the system’s response. API tests are very different from GUI Tests and won’t concentrate on the look and feel of an application. It mainly concentrates on the business logic layer of the software architecture.

• Types of API Testing

Security testing

Load testing

Representational state transfer

Functional testing

Unit testing

Fuzz testing

Graphical user interface testing

Integration testing

Software performance testing

• What is Responsive Testing?

Responsive testing involves how a website or web application looks and behaves on different devices, screen sizes, and resolutions. The goal of responsive testing is to ensure that the website or web application can be used effectively on various devices, including desktops, laptops, tablets, and smartphones.

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