Database Application

Agenda

- Database Architecture
- 1-tiet, 2-tier & 3-tier Architecture
- Web Application Architecture - Components ?

Database Architecture

What is Database Architecture ?

- DBMS architecture helps in design, development, implementation, and maintenance of a database.
- A database stores critical information for a business. Selecting the correct Database Architecture helps in quick and secure access to this data

What is Database Architecture?

- 1 tier Architecture
- 2-tier Architecture
- 3-tier Architecture

1-tiet, 2-tier & 3-tier Architecture

1 - Tier Database Architecture ?

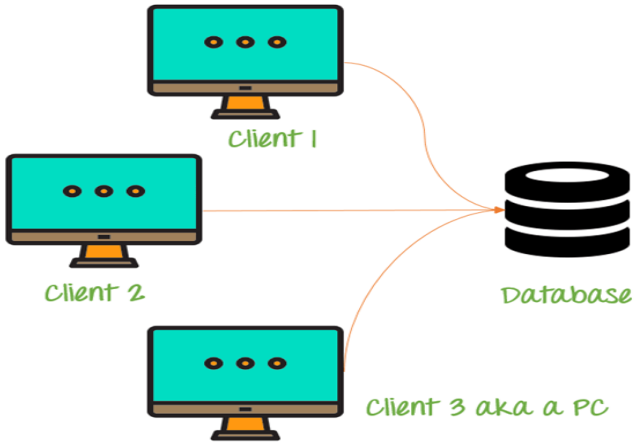
- The simplest of Database Architecture are 1 tier where the Client, Server, and Database all reside on the same machine.
- Anytime you install a DB in your system and access it to practise SQL queries it is 1 tier architecture.
- But such architecture is rarely used in production.

Single Tier Architecture

2 - Tier Database Architecture ?

A two-tier architecture is a database architecture where

- Presentation layer runs on a client (PC, Mobile, Tablet, etc)
- Data is stored on a Server.
- An application interface which is called ODBC (Open Database Connectivity) an API which allows the client-side program to call the DBMS.
- Today most of the DBMS offers ODBC drivers for their DBMS. 2 tier architecture provides added security to the DBMS as it is not exposed to the end user directly.

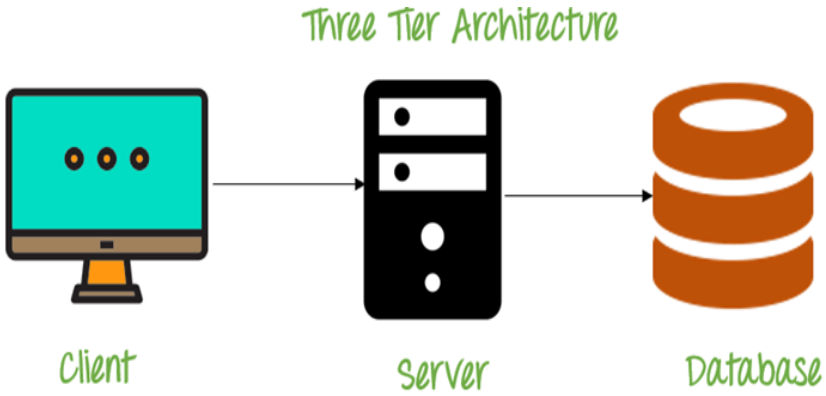


3 - Tier Database Architecture ?

- 3-tier schema is an extension of the 2-tier architecture.

3-tier architecture has following layers

- Presentation layer (your PC, Tablet, Mobile, etc.)
- Application layer (server)
- Database Server

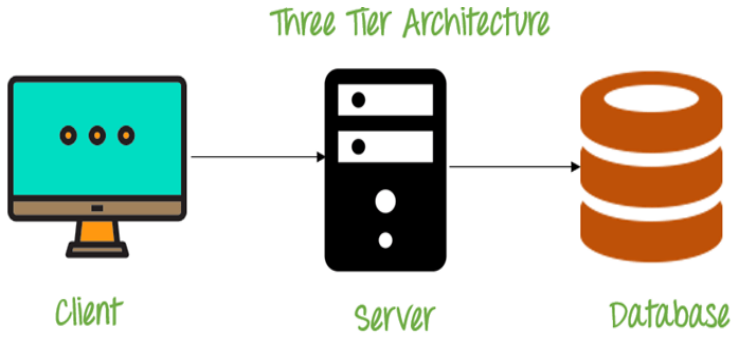


3 - Tier Database Architecture ?

- This DBMS architecture contains an Application layer between the user and the DBMS, which is responsible for communicating the user's request to the DBMS system and send the response from the DBMS to the user.
- The application layer(business logic layer) also processes functional logic, constraint, and rules before passing data to the user or down to the DBMS
- Three tier architecture is the most popular DBMS architecture.

The goal of Three-teir architecture is :-

- To separate the user applications and physical database
- Proposed to support DBMS characteristics
- Program-data independence
- Support of multiple views of the data



Web Application Architecture - Components ?

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Web Application Architectures comprises various components that are segregated into two categories of components :-

- User Interface App
- Structural Components.

Web Application Architecture - Components ?

User interface app components

- This is a reference to the web pages that have a role that is related to the display, settings and configurations.

- It is related the interface/experience, rather than the development, and consequently it deals with display dashboards, configuration settings, notifications, and logs etc.

Structural components

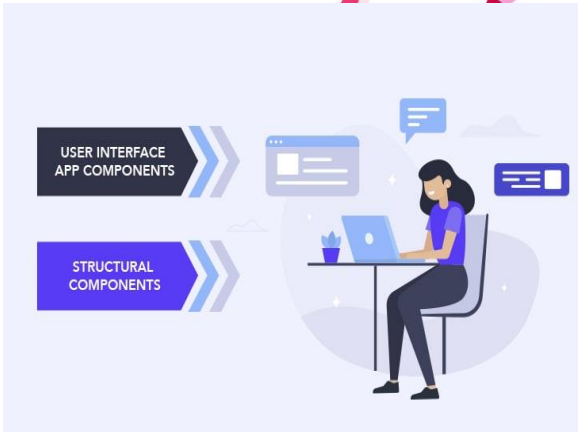
- The structural components of a web application basically refer to the functionality of the web application with which a user interacts, the control and the database storage.
- In other words, it has got more to do with the structural aspects of the architecture, as the name suggests. This basically comprises (1) The web browser or client, (2) The web application server and (3) The database server.
- The web browser or client permits the users to interact with the functions of the web apps and is generally developed using HTML, CSS, and JavaScript.

Web Application Architecture - Components ?

- The web application server handles the central hub that supports business logic and multi-layer applications, and is generally developed using Python, PHP, Java, .NET, Ruby, and Node.js.

- The database server offers business logic and relevant information/data that is stored and managed by the web application server.

- It stores, retrieves and provides the information.



What is Web Server Architecture ?

- By all definitions this refers to the ideal layout of a web server, which will facilitate the design, development and deployment of the web server.
- The role is to accede to the requests of clients, including browsers and mobile apps via secure protocols. The requests could pertain to page resources or could also be related to a REST API.
- Web servers are intrinsic to the working of web apps, mandating the need for increased emphasis on web server architecture, including the server's physical capacity – storage, memory, computing power, and performance, apart from the app tiers.
- This could be anywhere – either inside the server, across the network or the operating systems.

What is Web Server Architecture ?

The different types of web server architecture include :-

- Java web application architecture
- Cloud based web application architecture
- Node.js web application architecture
- .NET web application architecture
- PHP web application architecture
- AngularJS web application architecture
- Laravel web development
- Python web frameworks

Thank You!

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