**TIERS**

A tier is a layer in a software application

In web technology software applications are developed using the concept of tiers wherein the program or the application developed is distributed across different computers in a network giving rise to layers or tiers.

There are three different types of tier architecture 1 tier , 2 tier and 3 tier

**One-tier architecture** involves putting all of the required components for a software application or technology on a single server or platform. THUS a one-tier architecture keeps all of the elements of an application, including the interface, Middleware and back-end data, in one place

This is a good way to test your application in development environments and it is an ideal solution for small sites with low traffic demand which require effective resource utilization. It is handy to manage and maintain and, of course, a Single-Tier deployment is cost-effective.

But having all the resources on the same machine can create an availability and security risk. If the server is down, the application will be down, and it will not communicate with the database. If the server is externally attacked, you are at greater risk of data loss if you do not have a replica of your database.

**Multi-tier architecture** solves these problems by splitting data access across more than one server. Having all the resources spread into different servers boosts your deployment performance. In addition to this, having different layers for different resources implies adding an extra security layer by separating data from code. In those applications that include replication, the database can be replicated across more than one server which prevents the loss of data in case of cluster failure.This architecture also provides high scalability and failover: you can add as many nodes as you need to increase the capacity of your cluster. This way, the workload is also decentralized ensuring that when a node is down, the rest of the deployment is working.

**MULTITIER ARCHITECTURE generally have 3 or more layers**

**1. Presentation layer (Client Tier)  
2. Application layer (Business Tier)  
2. Database layer (Data Tier)**

**Presentation Layer**: It is also known as Client layer. Top most layer of an application. This is the layer we see when we use a software. By using this layer we can access the webpages. The main functionality of this layer is to communicate with Application layer. This layer passes the information which is given by the user in terms of keyboard actions, mouse clicks to the Application Layer. For example, login page of Gmail where an end user could see text boxes and buttons to enter user id, password and to click on sign-in.

**Application Layer:** It is also known as Business Logic Layer which is also known as logical layer. As per the gmail login page example, once user clicks on the login button, Application layer interacts with Database layer and sends required information to the Presentation layer. It controls an application’s functionality by performing detailed processing. This layer acts as a mediator between the Presentation and the Database layer. In a simple words, it is to perform operations on the application.

**Data Layer**: The data is stored in this layer. Application layer communicates with Database layer to retrieve the data. It contains methods that connects the database and performs required action e.g.: insert, update, delete etc.

In a simple words, it is to share and retrieve the data.

**The Two-tier architecture** is divided into two parts:

1. Client Application (Client Tier)  
2. Database (Data Tier)

Client system handles both Presentation and Application layers and Server system handles Database layer. It is also known as client server application. The communication takes place between the Client and the Server. Client system sends the request to the Server system and the Server system processes the request and sends back the data to the Client System

The Three-tier architecture is divided into three parts:

1. Presentation layer (Client Tier)  
2. Application layer (Business Tier)  
2. Database layer (Data Tier)

Client system handles Presentation layer, Application server handles Application layer and Server system handles Database layer.