

Web Server and Application Security

Web Application Architecture



1. For ease of conducting the session, we have disabled your microphones. Do keep your video turned on at all times.
2. Please raise any questions you may have through the chat.
3. Please confirm if you can see the presentation and the presenter clearly.
4. This is a 120-min long session. As we go through the session, I will take questions at the end of each concept and at the end of the session.
5. I will unmute the audio of participants volunteering for any activity.

Thus far, in the last module you've learned about:

- Types of Cryptographic Attacks
- Cipher text only attack
- Known plaintext attack
- Chosen plaintext attacks
- Chosen cipher text attack
- Brute force
- Dictionary Attack
- Frequency Analysis

Thus far, in this topic you've learned about:

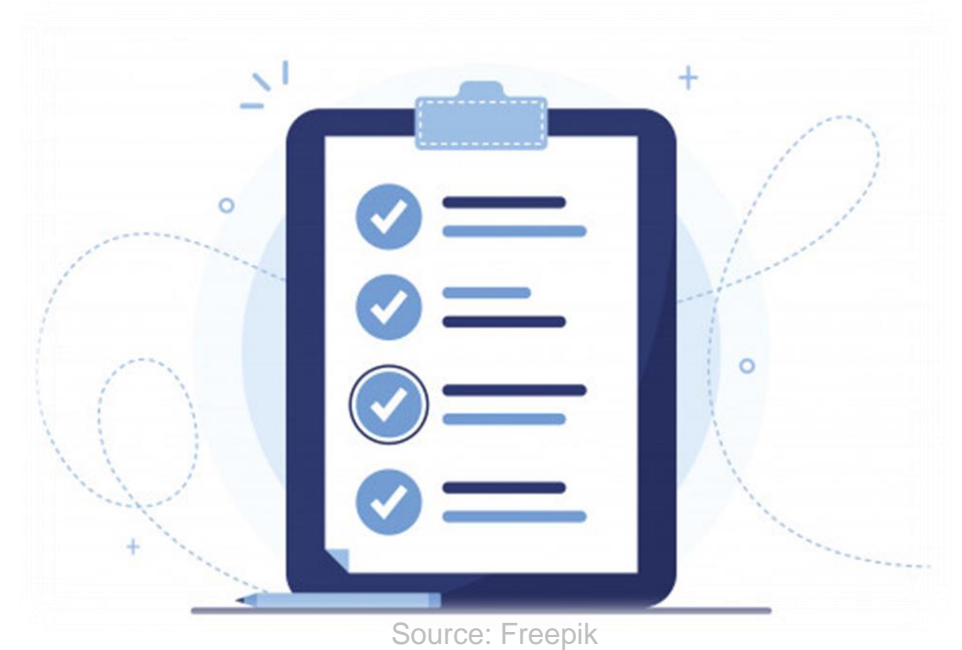
- 3 Tier Architecture
- 3 Tier Architecture: An Overview



In case you have not gone through the Pre-study artefacts for this topic, please do it at the earliest.

In today's session, you will learn about:

- Three tier architecture and its components
- Traffic flow between three-tier architecture
- Basic DNS flow



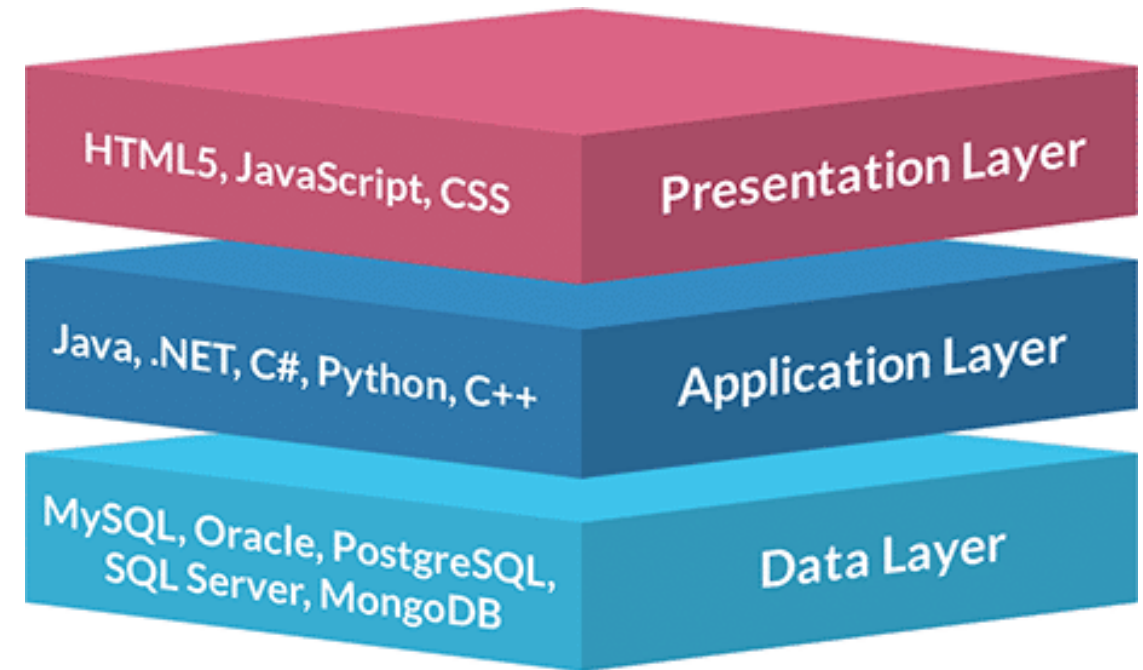
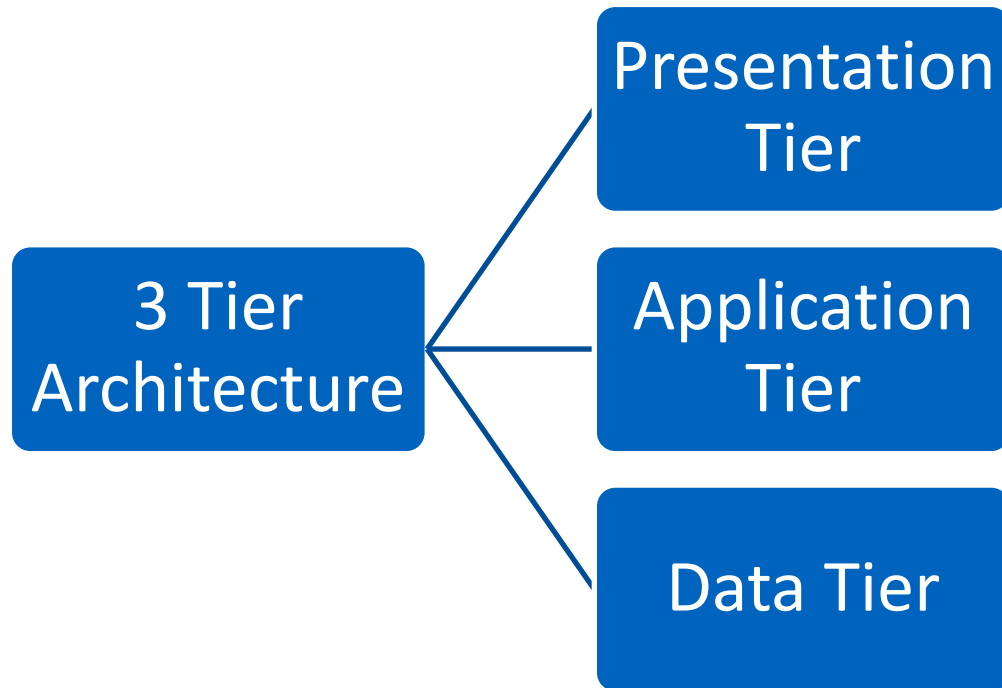
What is a 3-Tier Architecture?



Created by fae frey
from Noun Project

- A 3-tier architecture is a type of software architecture which is composed of three “tiers” or “layers” of logical computing.
- They are often used in applications as a specific type of client-server system.
- 3-tier architectures provide many benefits for production and development environments by modularizing the user interface, business logic, and data storage layers.

- These are the 3-Tier Architecture



Name of the Activity

Complete the image

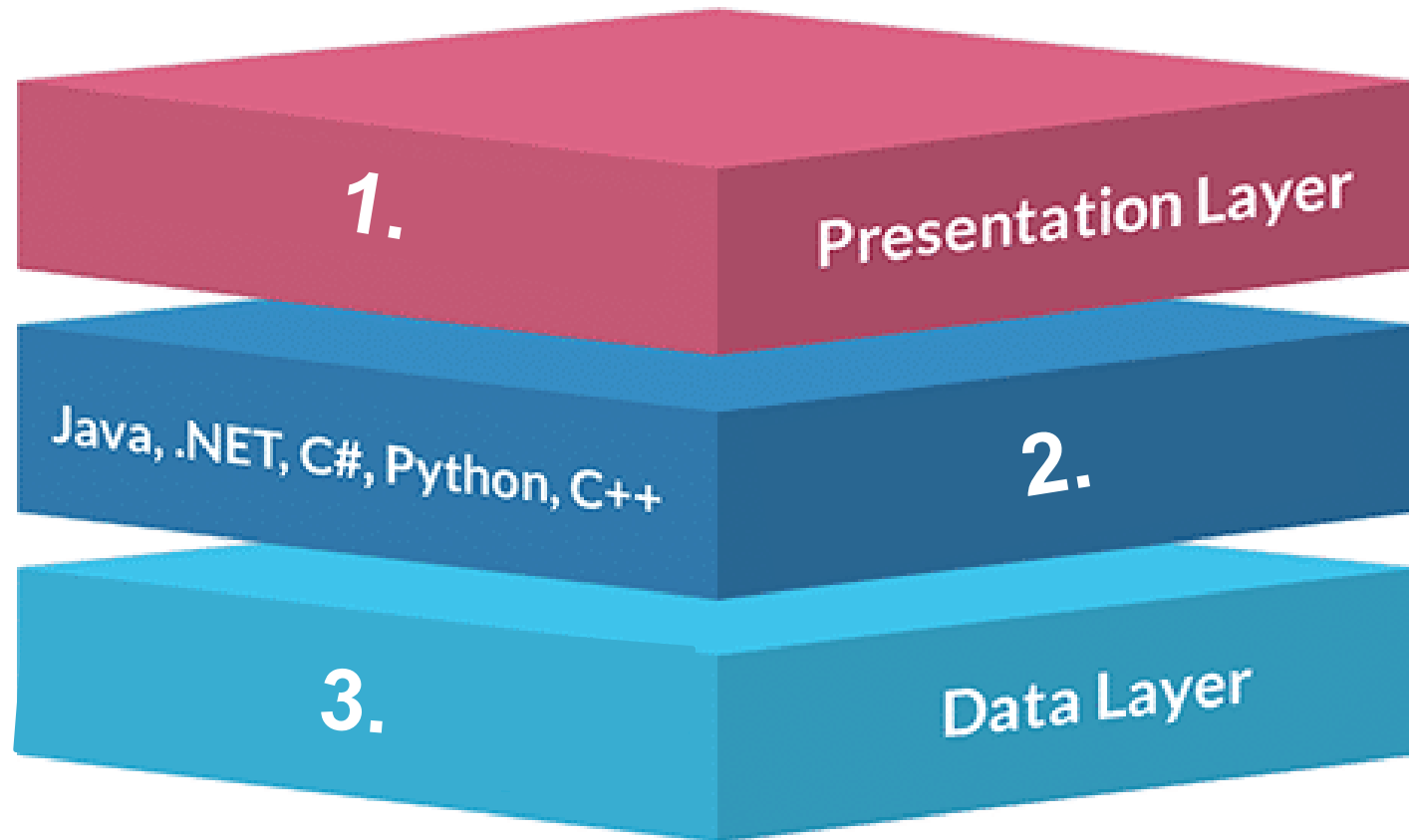
Instructions

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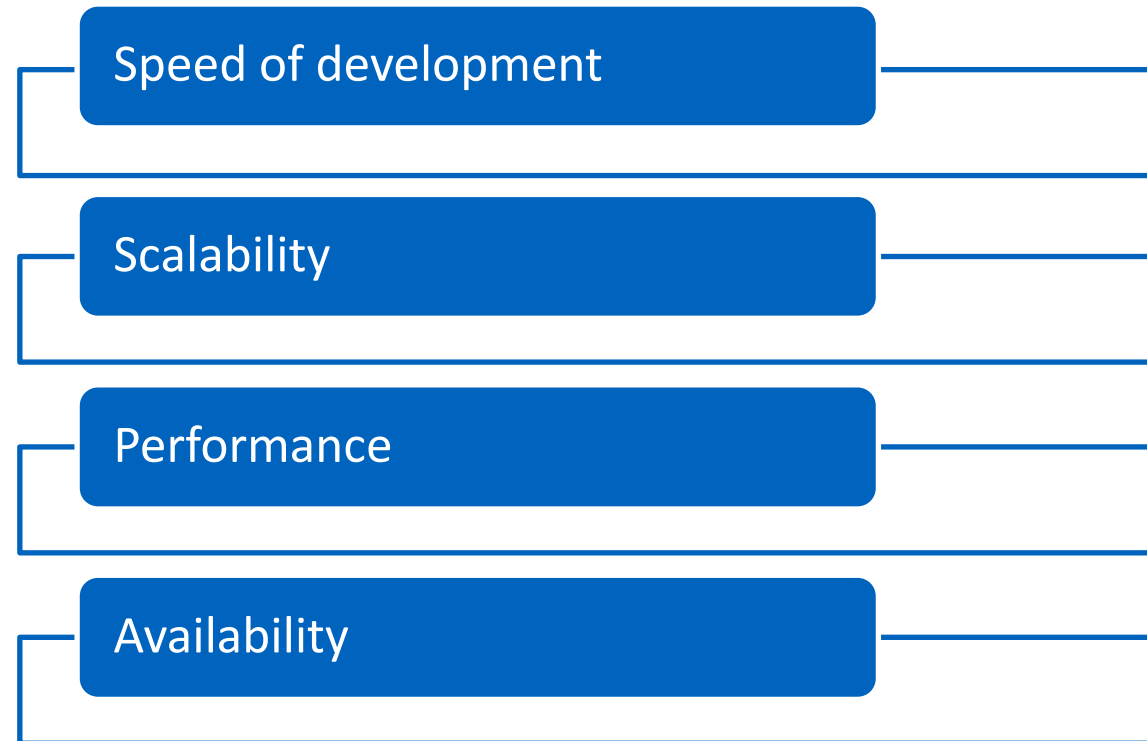
Duration: **5 minutes**

Materials Required: **None**

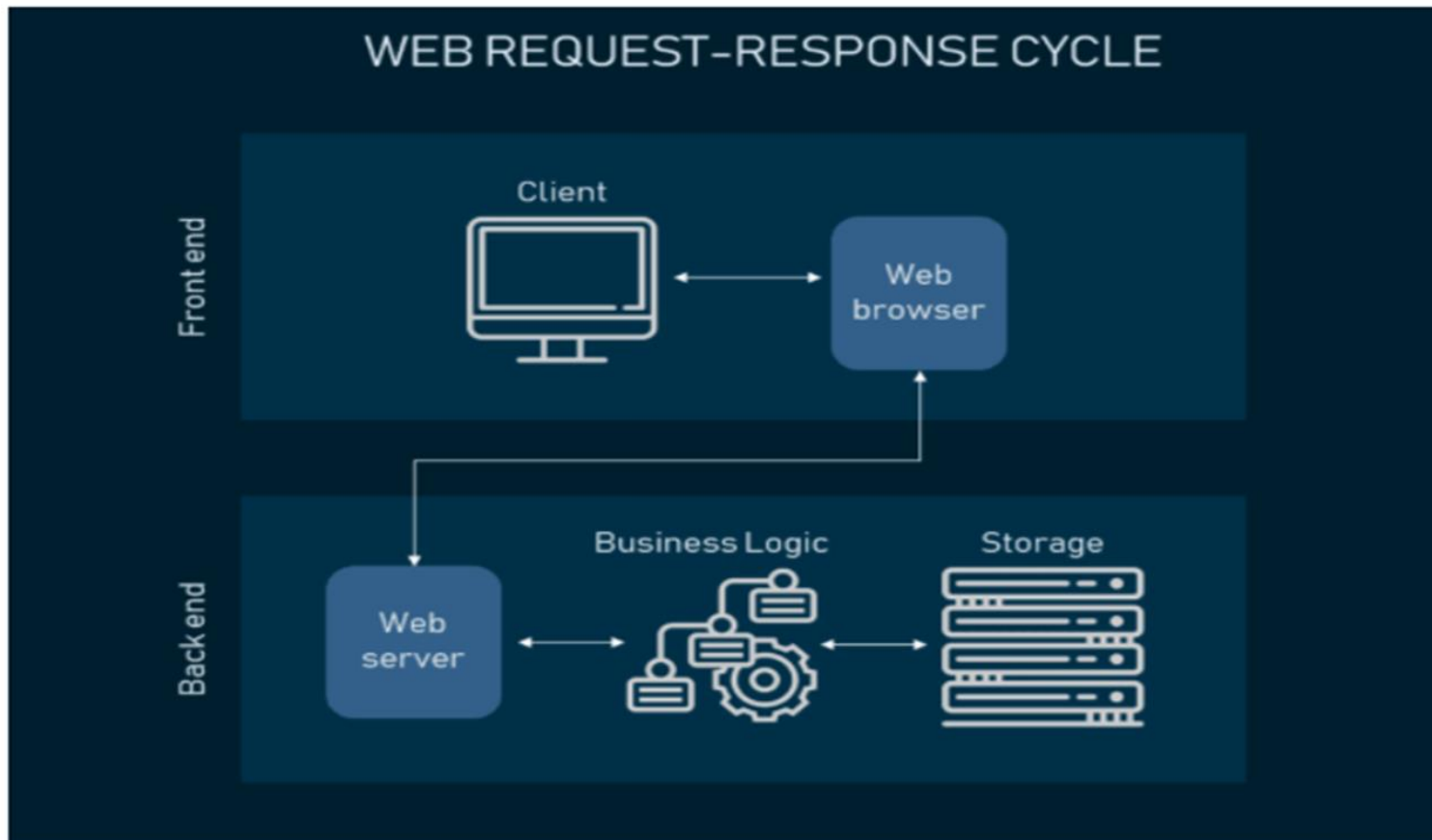




The benefits of a 3-layer architecture include:



- Understanding components of web application architecture

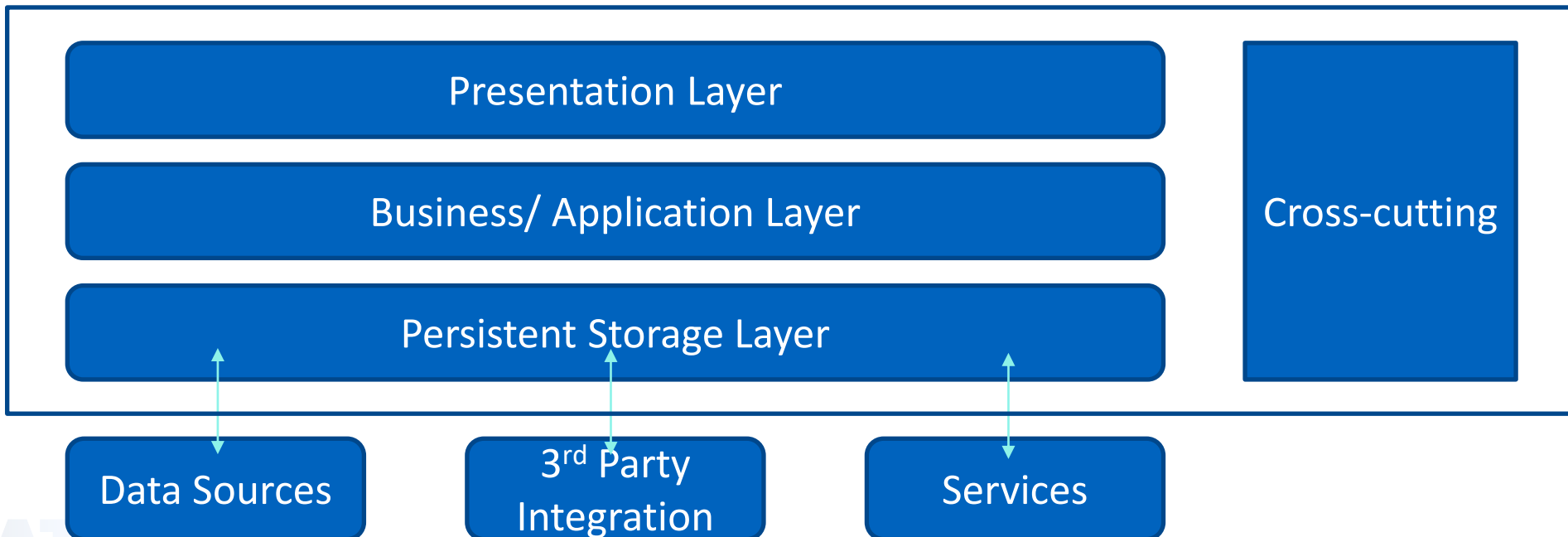


Most web applications are developed by separating its main functions into layers, or tiers.

Client



Server



Name of the Activity

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Instructions

Mode: **In-session**

Duration: **5 minutes**

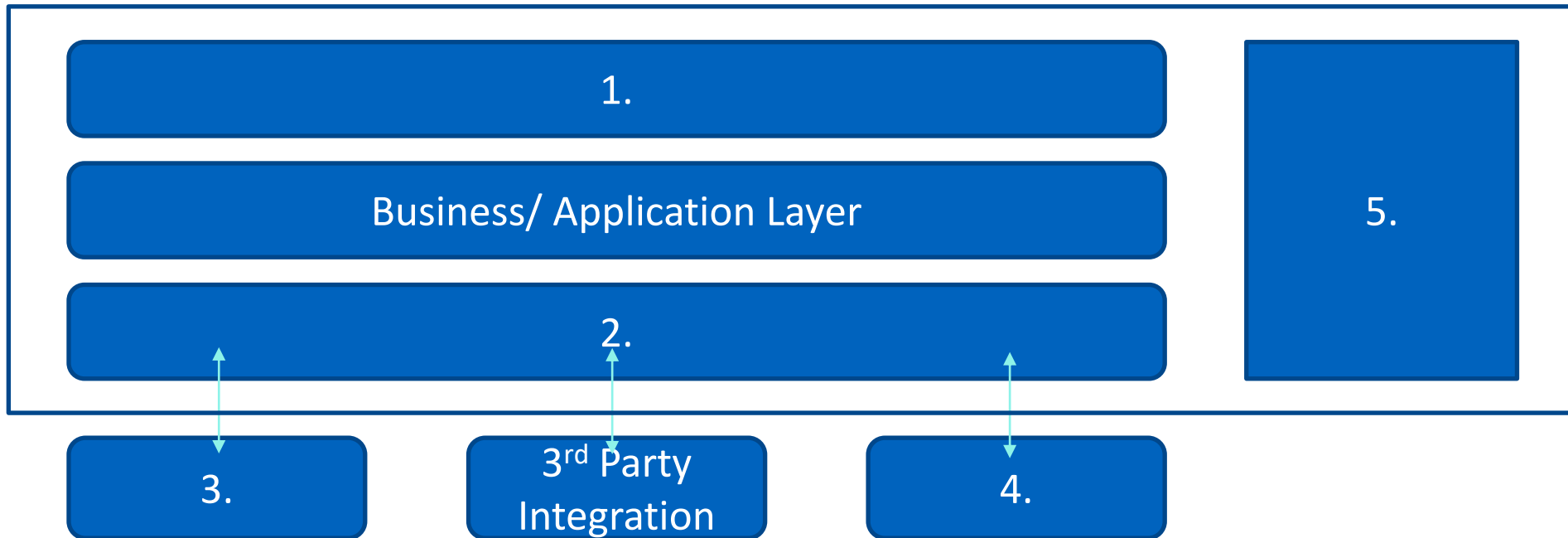
Materials Required: **None**



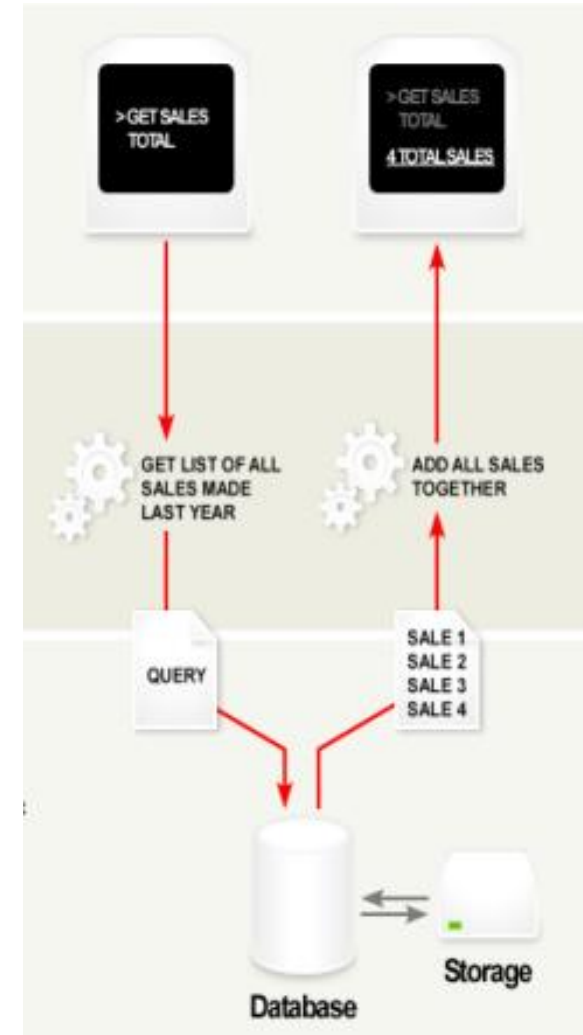
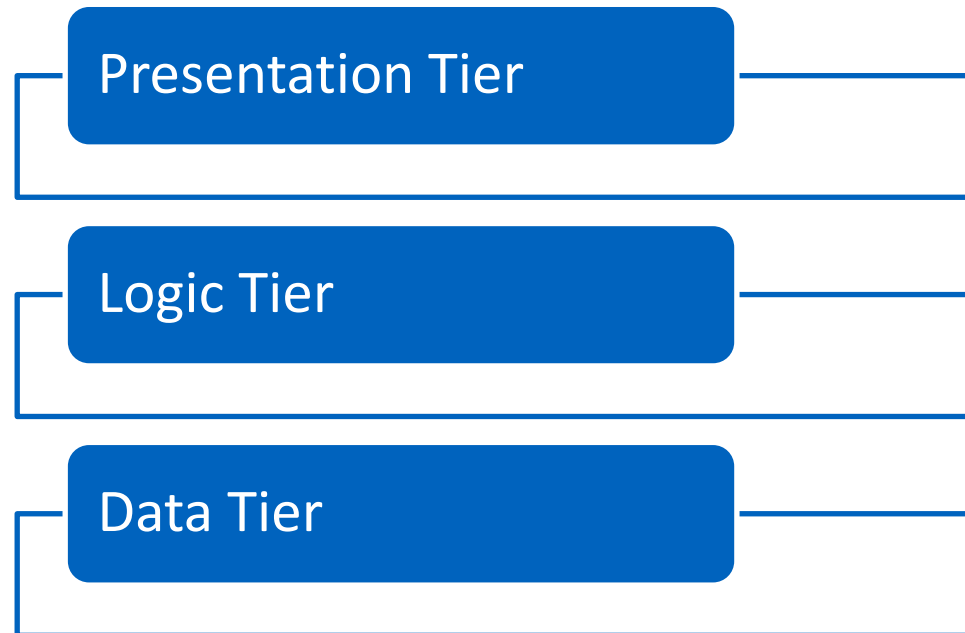
Client



Server



3 Tier Architecture



These are the Architecture Principles

- Client server architecture
- Each tier (Presentation, Logic, Data) should be independent and should not expose dependencies related to the implementation
- Unconnected tiers should not communicate
- Change in platform affects only the layer running on that particular platform.



Source: The Noun Project

What does DNS stand for?



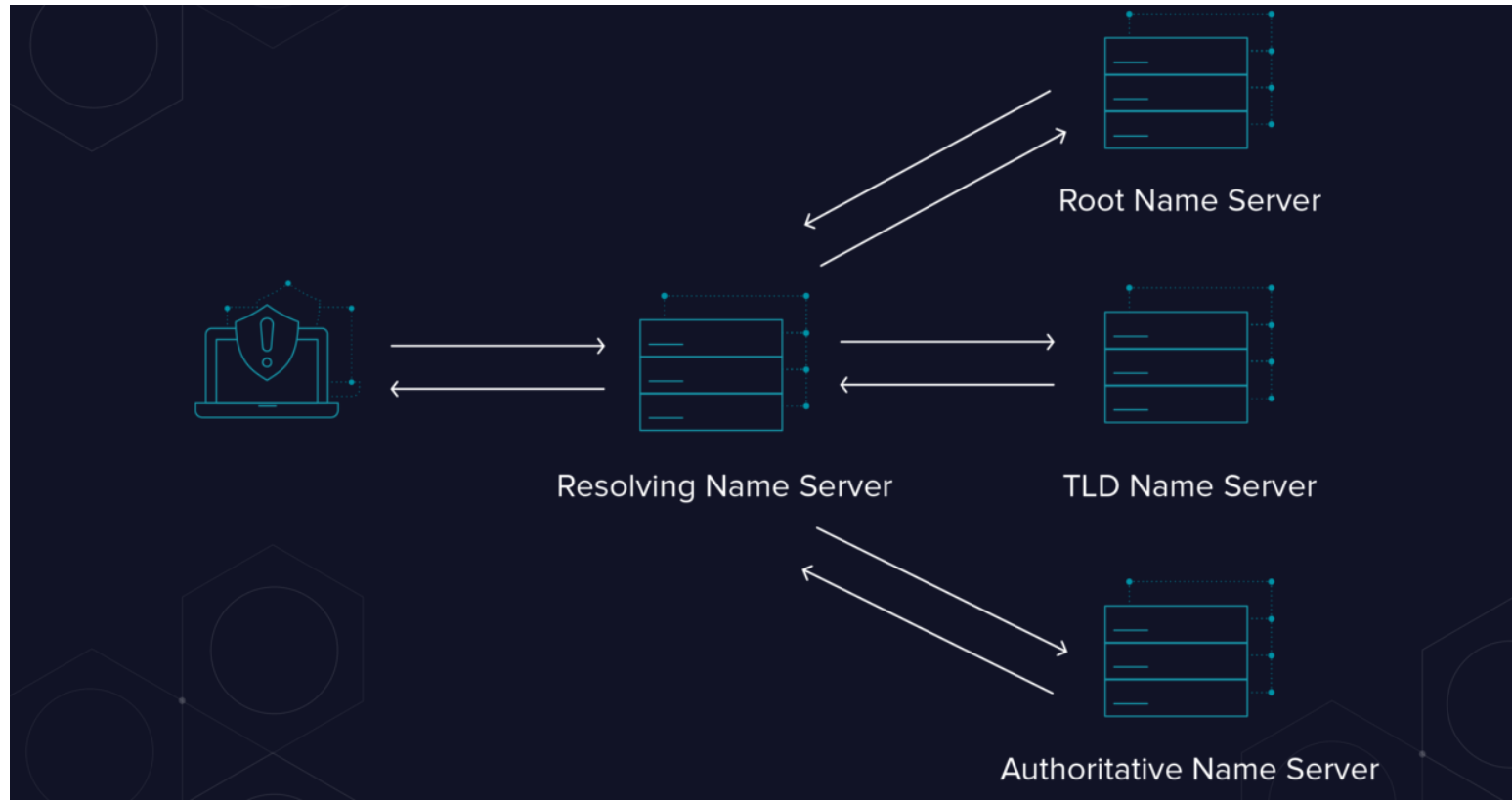
Created by fae frey
from Noun Project

- DNS is an integral part of the internet so that's why it is important to understand how it works.
- Think of DNS like a phone book, but instead of mapping people's names to their street address, the phone book maps computer names to IP addresses. Each mapping is called a "DNS record."

- The internet has a lot of computers, so it doesn't make sense to put all the records in one big book. Instead, DNS is organized into smaller books, or domains.
- Domains can be very large, so they are further organized into smaller books, called, "zones."



Source: The Noun Project



Source: Varonis

Name of the Activity

Behind the Door Number

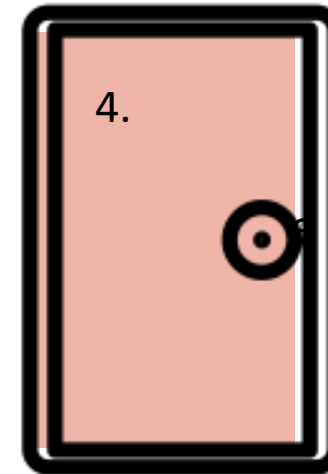
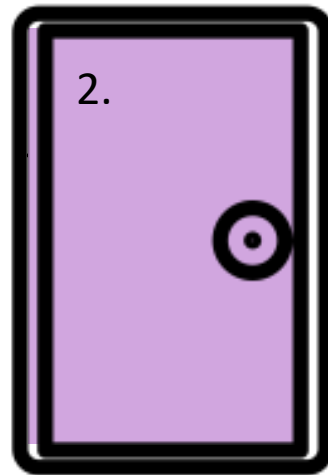
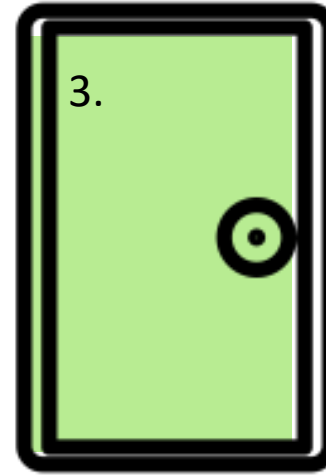
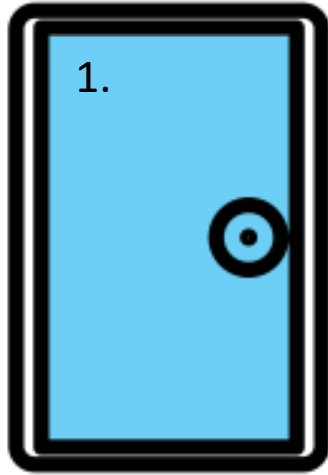
Instructions

Mode: **In-session**

Duration: **5 minutes**

Materials Required: **None**





1. In this Logic Tier the layer coordinates the application, processes commands, makes logical decisions and evaluations, and performs calculations.
2. The Presentation tier is the front end layer in the 3-tier system and consists of the user interface.
3. Regarding Architecture Principles, each tier should be Independent and should not expose Dependencies related to the implementation
4. Domains can be very large, so they are further organized into smaller books, called “zones” .

He Who Asks a Question

May Remain a Fool
For Five Minutes

But, He Who
Does Not Ask
Remains a Fool
Forever



Source: Freepik

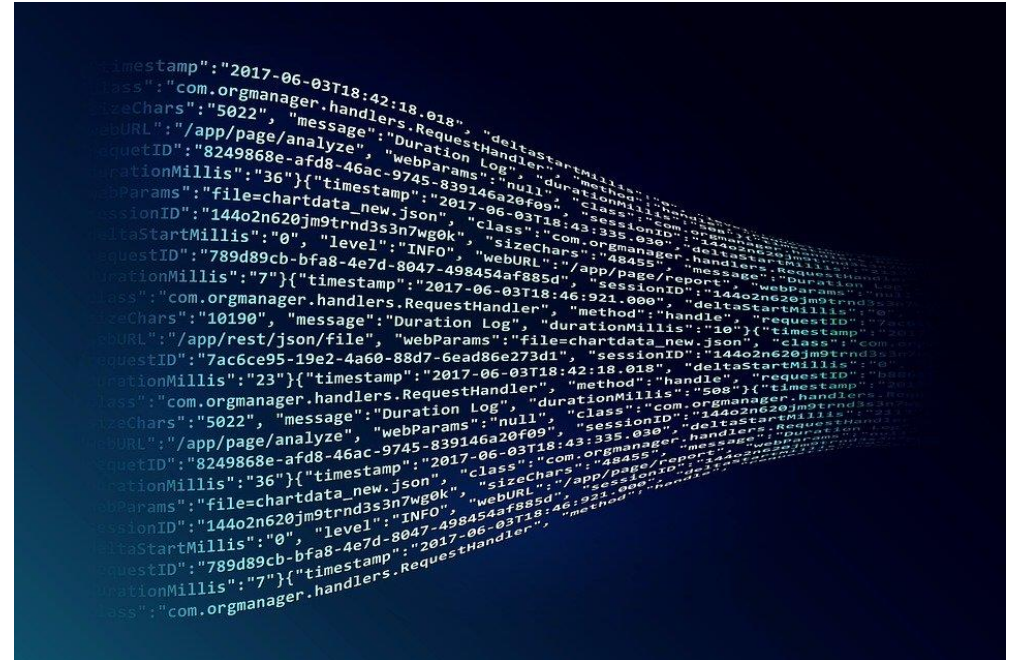
In this session, you learnt about:

- Three tier architecture and its components
- Traffic flow between three-tier architecture
- Basic DNS flow



In this topic, you will further learn about:

- Web Application Basics
- Full Stack Development with M.E.R.N. stack
- Working of DNS (Domain Name System)
- Working of DNS and its vulnerabilities



Source: Pixabay



Skill Development Initiative of Tata Trusts

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