



# **SNS COLLEGE OF ENGINEERING**

Kurumbapalayam (Po), Coimbatore – 641 107

**An Autonomous Institution**

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Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

## **DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING-IOT Including CS&BCT**

**COURSE NAME : 19SB602 FULL STACK DEVELOPMENT FOR NEXT  
GENERATION IOT**

**III YEAR / VI SEMESTER**

**Unit IV- INTEGRATION OF NG IoT WITH WEB  
DEVELOPMENT**

**Topic : Project on Web Designing , Deployment**



## Web designing

Web designing is the **process of planning, conceptualizing, and implementing the plan for designing a website** in a way that is functional and offers a good user experience.

**User experience** is central to the web designing process.

Websites have an array of elements presented in ways that make them easy to navigate.



Web development **refers to the building and programming of websites and applications.**

It covers a wide **range of tasks**, from creating **simple static pages to complex web applications like social networking services.**

Some of the common languages used in web development are **HTML, CSS, and JavaScript.**



# Types of Web Development

Front-end Web Development

Back-end Web Development

Full Stack Web Development



## Frontend Developer Roadmap 2024

Frontend development means to **design the face of a website** or application.

It involves working on the **appearance of the website**.

Building **interactive buttons, using images and animations**, or any other aspect that involves enhancing the appearance of the webpage.



Frontend development means developing the **user interface** for a **website or app**.

During frontend development, a frontend developer has to ensure the **looks and feel of the page**.

The page should **look good on any device**.

Apart from working on the UI of the page, a **frontend developer** also has to maintain the **right balance between design and functionality** to ensure speed and scalability.

Frontend development also ensures that the **webpage is loading correctly on all browsers(Google, Mozilla Firefox, Edge, etc) and all devices (mobiles, laptops, tablets, etc.)**.



In general frontend development consists of **3 technologies- HTML, CSS, and JavaScript.**

There are many other concepts that you should be familiar with if you want to become a frontend developer.



## Back-end web development

Back-end web development involves **building the server-side of a website or web application.**

It **focuses** on managing **data, business logic, and interactions** between the **server and the client-side** (front-end).

Here's a structured approach to help you with your back-end web development project:





## 1. Choose a Technology Stack:

Select a **programming language** and **framework** suitable for your **project requirements**. Popular options include:

JavaScript with Node.js

Python with Django or Flask

Ruby with Ruby on Rails

PHP with Laravel or Symfony

Java with Spring Boot

C# with ASP.NET



## 2. Set Up Development Environment:

**Install necessary tools** and dependencies for your chosen technology stack.

Set up a **version control system like Git** for managing code changes.

## 3. Design the Database:

Design the **database schema based on the requirements** of your application.

Choose an appropriate database management system (DBMS) such as **MySQL, PostgreSQL, MongoDB, or SQLite.**

Create **tables, define relationships, and establish constraints** for **data integrity.**

## 4. Implement Business Logic:

Write **server-side code** to handle requests from the **client-side** and perform **necessary operations**.

Implement **authentication and authorization mechanisms** for **user management and access control**.

Develop **algorithms and logic** for **processing and manipulating data**.

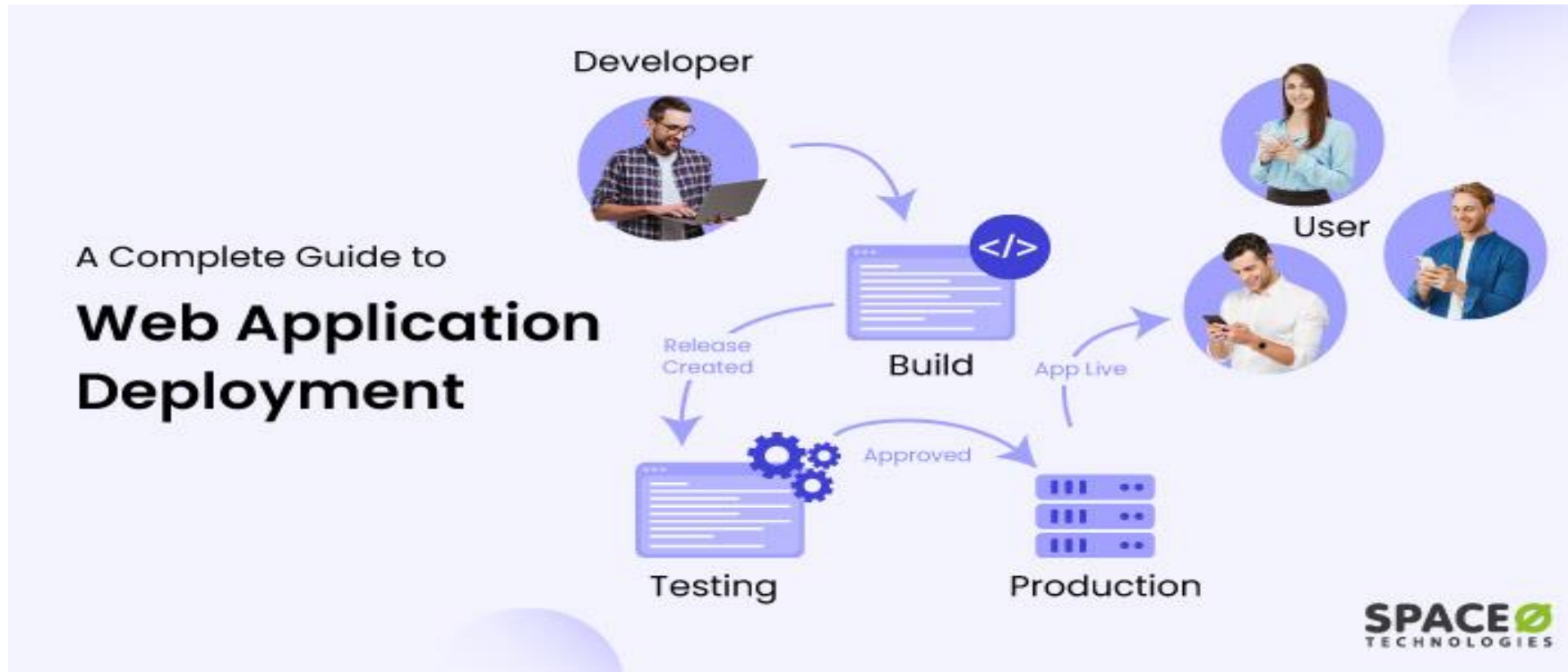
## 5. Develop APIs:

**Design and implement RESTful or GraphQL APIs** for communication between the **front-end and back-end**.

Define endpoints for **CRUD operations** (Create, Read, Update, Delete) and other functionalities.

Document APIs using tools like **Swagger or OpenAPI** to facilitate **integration and usage**.

# Web App Deployment Process





Web app deployment **refers to the process of making a web application** available for **end users to interact with on the internet**. This involves:

Packaging the **application's code, assets, and dependencies**

Moving them from a **development environment to a production environment** (often known as “**pushing**” to production)

Setting up the **necessary infrastructure for user access via the web**



The deployment **process includes tasks such as:**

**Configuring a web server and managing databases**

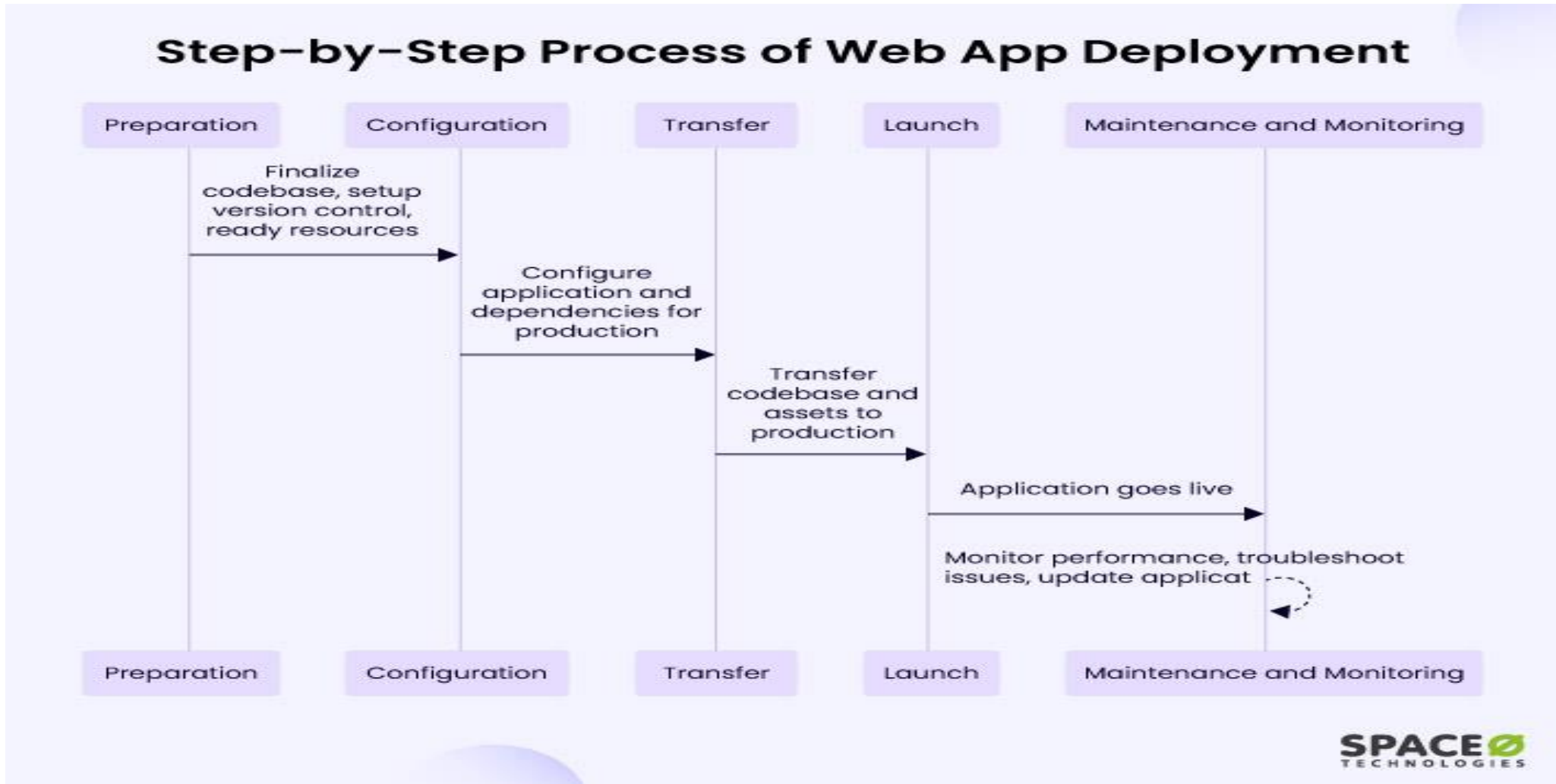
**Setting up custom domain names and optimizing performance**

**Ensuring the application can scale to handle traffic**

Web app deployment plays a critical role in the software development life cycle (SDLC), which includes stages such as **planning, designing, building, testing, and deployment.**

A deployment **plan for a web application is essential to avoid issues** like application **errors, security vulnerabilities,** and poor user experience.

## 5 Step-by-Step Process of Web App Deployment





## Prepare the Code for Deployment

Before deploying your **web application from your local machine**, it is important to prepare your source code for deployment.

Below are three pointers to ensure that your application is ready for deployment:

Code Finalization

Version Control Setup

Resource Preparation





## **Configure the Code for Deployment on the Web Server**

Once the preparation is completed, the **server-side code is configured for backend deployment.**

In this stage, the application is tailored to work in the production environment

## **Transfer the Web Application to the Production Environment**

In this stage, the focus is on **transferring web apps** from the **development or staging environment to the production server.**

The application's code, along with any **necessary assets and dependencies, is transferred to the production web server.**



## Launch the Web Application to the Server

The web application is made **publicly available at this stage.**

The application is launched on the **production web server** of the hosting service and is now accessible to users over the internet via a **specific URL.**



## **Maintenance and Monitoring of the Web Application**

Once the application has been launched, the maintenance and monitoring stage begins.

**This stage involves ongoing tasks to ensure the application's optimal performance and user satisfaction.**



Any Query????

Thank you.....