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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.

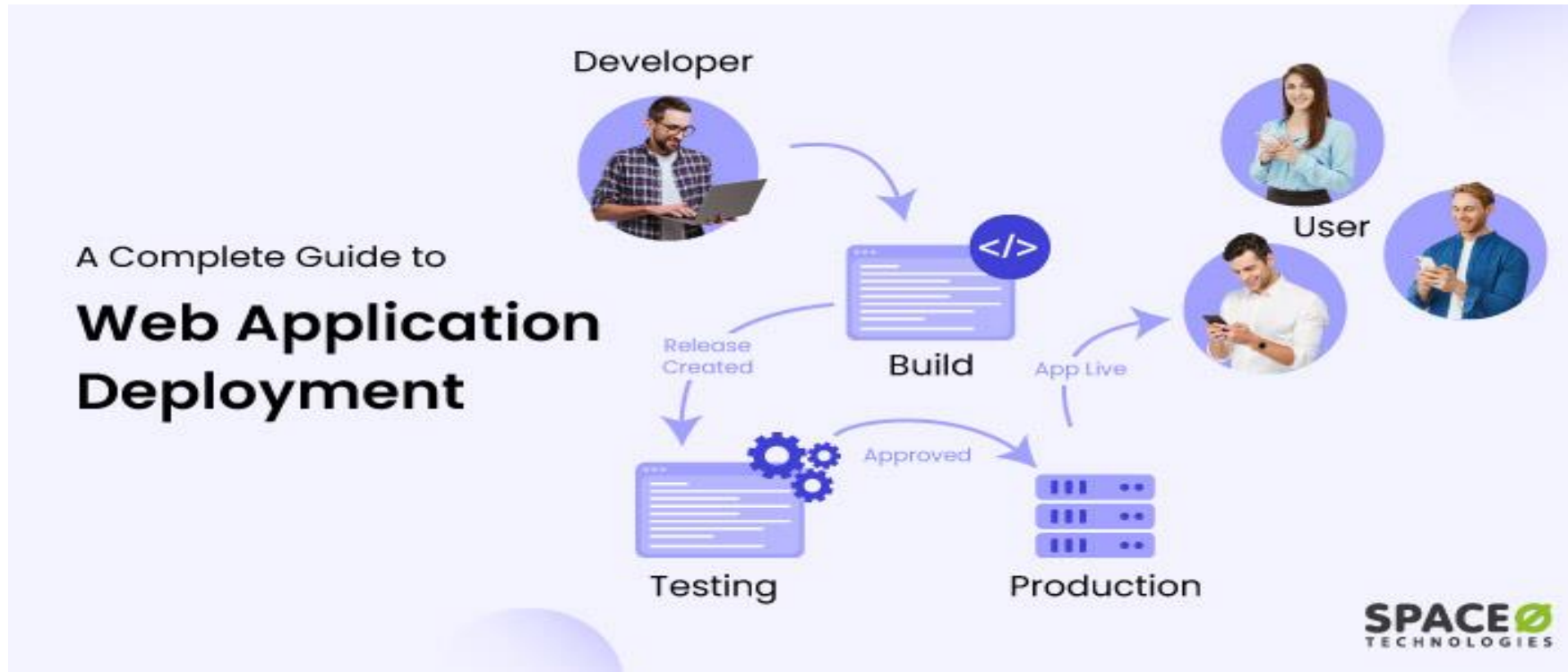
5. Develop APIs:

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

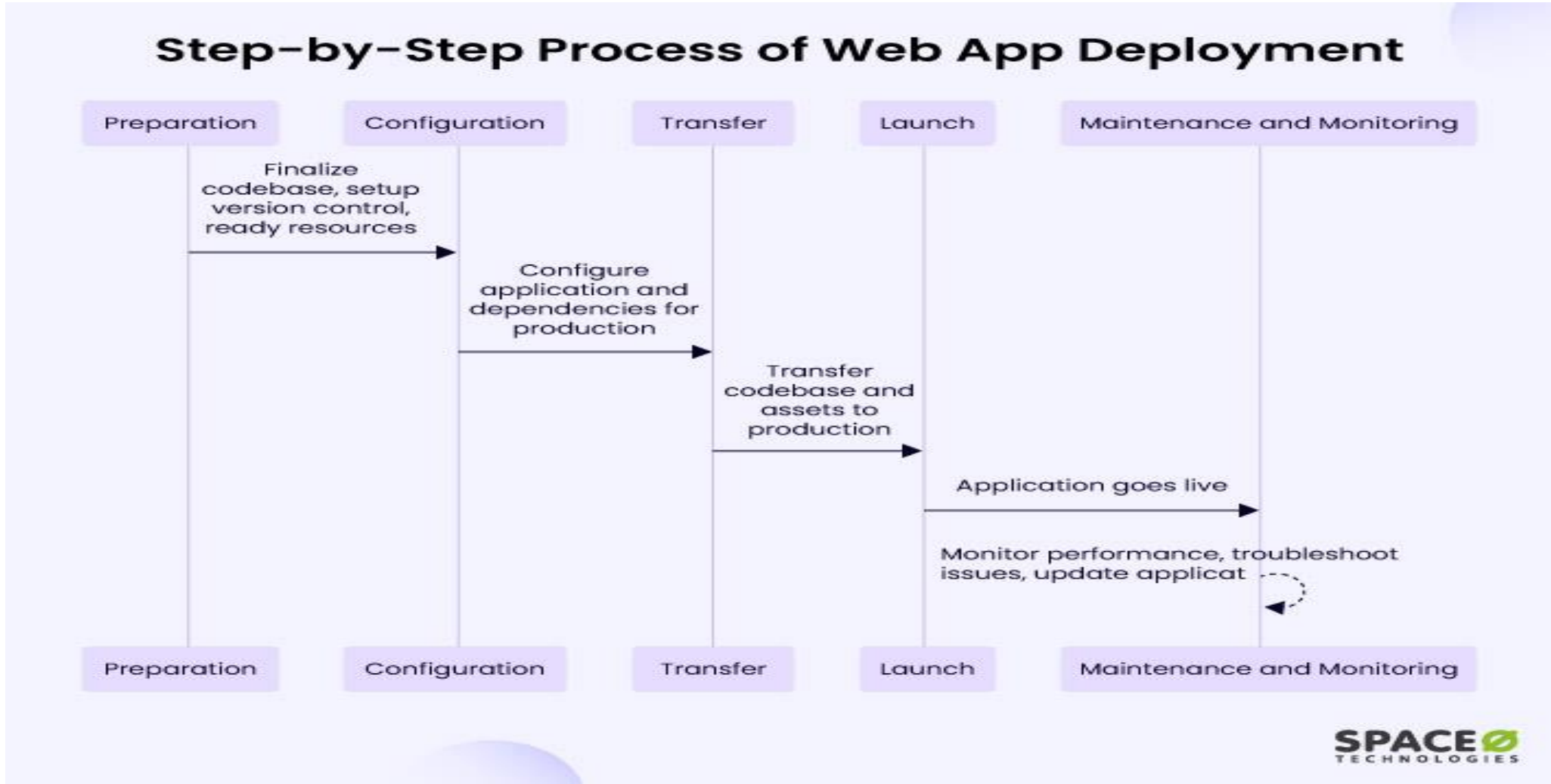
Setting up custom domain names and optimizing performance

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.....