

Web Technologies (Fullstack with DJANGO)

CURRICULUM:

Unit 1: Introduction to Web Development

Overview of the World Wide Web - Evolution of Web technologies - Client-server architecture - Understanding URLs and HTTP

Unit 2: HTML, CSS, and JavaScript Basics

Introduction to HTML - Styling with CSS - Client-side scripting with JavaScript - Building a simple webpage

Unit 3: Responsive Web Design

Principles of responsive design - Media queries - Flexbox and Grid layout - Mobile-first development

Unit 4: Server-Side Technologies

Introduction to server-side scripting - Server-side frameworks (e.g., Node.js, Django) - Database integration

Unit 5: Web Security

Common security threats - HTTPS and SSL/TLS - Best practices for secure web development - Cross-Site Scripting (XSS) and Cross-Site Request Forgery (CSRF)

Student Assessments 1 & 2:

Assessment 1: Weekly quizzes and assignments assessing understanding of HTML, CSS, and JavaScript concepts.

Assessment 2: Midterm project: Building a static website incorporating HTML, CSS, and basic JavaScript.

Mandatory Project Work: Students will be required to work on a series of smaller projects throughout the course, allowing them to apply and reinforce the concepts learned in each unit.

Course Duration: 45 Hours

Test Projects:

The full-stack Django framework finds extensive use across various industries due to its versatility, robustness, and rapid development capabilities.

Here are some industry use cases for the full-stack Django framework:

1. Web Development:

Django is a popular choice for web development because it is fast, secure, and scalable. It can be used to build a wide variety of websites, from small personal blogs to large enterprise applications.

2. Data Science:

Django can also be used for data science tasks, such as data analysis, machine learning, and natural language processing. It provides several features that make it easy to work with data, such as its built-in database support and its ORM (object-relational mapper).

3. Software Engineering:

Django can also be used for software engineering tasks, such as building APIs, testing code, and deploying applications. It provides several features that make it easy to develop and maintain software, such as its built-in testing framework and its deployment tools.

Some Industry-Specific Use Cases include:

- 1. E-commerce:** Django is well-suited for building e-commerce platforms due to its strong security features, database management capabilities, and scalability. It allows developers to create custom product catalogs, integrate payment gateways, manage user accounts, and handle order processing efficiently.
- 2. Content Management Systems (CMS):** Django's admin interface makes it an excellent choice for developing content management systems. Organizations across industries, such as publishing, media, and education, leverage Django to manage and publish content, create user-friendly

dashboards, and customize workflows.

- 3. Social Networking Platforms:** Django's authentication system, database management, and scalability make it ideal for developing social networking platforms. From basic social networking features like user profiles, friend connections, and messaging to advanced functionalities such as news feeds, notifications, and activity tracking, Django enables developers to build robust social networking applications.
- 4. Healthcare and Telemedicine:** Django can be utilized to develop secure and HIPAA-compliant healthcare applications, including electronic health records (EHR) systems, appointment scheduling platforms, patient portals, and telemedicine solutions. Its emphasis on security and data privacy makes it suitable for handling sensitive healthcare information.
- 5. Education and E-learning:** Django powers numerous educational platforms and e-learning websites by providing features such as course management, content delivery, student enrolment, progress tracking, and assessment tools. It allows educators to create engaging and interactive learning experiences for students while managing course materials effectively.
- 6. Finance and Fintech:** Django is used in the finance industry to build secure and reliable applications for banking, financial management, investment tracking, and payment processing. With its robust security features and support for financial calculations, Django is well-suited for developing fintech solutions that handle sensitive financial data.
- 7. Real Estate and Property Management:** Django can be employed to develop real estate listing platforms, property management systems, and rental marketplaces. It enables features such as property search, listing management, user accounts, rental agreements, and payment processing, streamlining the real estate workflow for agents, landlords, and tenants.
- 8. Travel and Hospitality:** Django is utilized in the travel and hospitality industry to create booking platforms, hotel reservation systems, travel itineraries, and review websites. Its ability to handle complex data structures and integrate with external APIs makes it an ideal choice for

building comprehensive travel solutions that cater to the needs of travelers and service providers alike.

Here are some specific examples of companies that use Django:

1. Instagram:

Instagram is a social media platform that uses Django to power its website and mobile app.

2. Spotify:

Spotify is a music streaming service that uses Django to power its website and mobile app.

3. Pinterest:

Pinterest is a social media platform that uses Django to power its website and mobile app.

4. Mozilla:

Mozilla is a non-profit organization that develops the Firefox web browser. It uses Django to power its website and several other projects.

5. National Geographic:

National Geographic is a magazine and media company that uses Django to power its website.

In summary, the Django Framework offers a wide range of industry-specific use cases, enabling developers to build robust, scalable, and feature-rich web applications across various domains.