INT253:WEB DEVELOPMENT IN PYTHON USING DJANGO

L:2 T:0 P:2 Credits:3

Course Outcomes: Through this course students should be able to

CO1 :: understand Python/Django installation, editor setup, project creation, grasp Django commands, and excel in app structuring

CO2 :: experiment views, map URLs for content display, handle HTTP methods, and manage errors for enhanced functionality

CO3 :: apply Django templates for creation, variable handling, loops, conditions, inheritance, debugging, and app testing

CO4 :: apply Django forms for handling GET, POST, HTTP, implementing CSRF security, and validating data

CO5 :: apply Django for modeling, migrations, ORM, Admin, user management, and database setup

CO6 :: apply techniques for cookies, sessions, user management, login/logout URLs, and view-based login within the system.

Unit I

Introduction to Django : Introduction to Django, Installing Python and Django, Setting up project in editor, Projects and Apps overview, Project structure, Creating your first project, Django-admin & manage.py commands, App structures, Creating an App

Unit II

Views and URLs : Creating views and mapping to URLs, Creating views and view logic, HTTP requests, Creating Requests and Responses, Understanding URLs, Mapping URLs with Params, Regular expressions in URLs, Error Handling

Unit III

Templates, Debugging and Testing : Introduction to Templates in Django, Creating Templates, Working with Django Template Language(DTL), Using template tags, Django variables, for loop and if-else statements, Dynamic Templates in Django, Working with Template inheritance, Debugging Django applications, Testing in Django

Unit IV

Forms in Django : Introduction to Forms, Using GET, POST and HTTP, Building forms using Django, Introduction to Cross Site Request Forgery(CSRF), CSRF support in Django, Implementing POST redirect in Django, Data validation with Django forms

Unit V

Models and Migrations and Django Admin : Creating models, Working with Migrations, Using the Django Shell to Explore Models(Insert, Update and Delete), Using Object Relational Mapping(ORM), Models using Foreign Keys, Django Admin, Adding groups and users, Users and Permissions, Database configuration – Configuring and setting up database connection

Unit VI

Cookies and Sessions, users and authentication : Creating Cookies and sessions in Django, Creating and Managing Users in Django, Login and Logout URLs in Django, Using Django Login in Views

List of Practicals / Experiments:

List of practicals

- Set up a Django project, create an app, and execute basic manage.py commands.

- Organize the project structure and explore the initial settings.

- Develop views for different functionalities (e.g., displaying content, handling forms).

- Map views to specific URLs and handle various HTTP requests.

- Create and integrate templates in Django for different pages or components.

- Debug a Django application, utilizing Django's built-in debugging features.

- Implement basic tests to check functionality across different parts of the app.

- Build forms using Django for user input or data submission.

- Validate form data and implement CSRF protection to ensure security.

- Design and create models representing different data entities.

- Apply migrations to reflect changes in the database schema.

- Utilize Django Admin to manage and interact with model data.

- Implement session-based functionality using cookies for user interaction.

- Manage user creation, authentication, and permissions within the Django system.

- Set up login/logout functionality and secure specific views with authentication checks.

Text Books:

    1. BUILDING WEBSITES WITH DJANGO by AWANISH RANJAN, BPB PUBLICATIONS

References:

    1. DESIGNING MICROSERVICES USING DJANGO by SHAYANK JAIN, BPB PUBLICATIONS