



DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

Value Added Course

on

Django Magic Building Elegant web solutions

05.08.2024 to 09.08.2024

Course Objectives:

45 Hours

- To Learn a foundational understanding of the Django web framework
- To Learn Master CRUD operations
- To Learn the Integration of relational database (MySQL)
- To Build dynamic and responsive web applications

Unit 1 :Introduction to Django and CRUD Operations

(9)

Introduction to Django -Overview of Django framework -Setting up the development environment-Creating a Django project and application-Understanding the Project Structure-Project files and directories-Configuring settings-Models and the Django ORM-Creating models-Database migrations-CRUD Operations-Creating, reading, updating, and deleting records-Implementing CRUD views and templates-Practical Session-Hands-on practice: Building a basic CRUD application

Unit 2: Integrating MySQL with Django

(9)

Setting Up MySQL-Installing MySQL server and client-Configuring MySQL for Django-Connecting Django to MySQL-Installing mysqlclient or django-mysql-Configuring database settings in settings.py-Migrations with MySQL-Running migrations to create tables in MySQL-Handling common migration issues-Practical Session-Hands-on practice: Migrating the CRUD application to use MySQL

Unit 3: Working with Django Views, Templates, and Bootstrap

(9)

Introduction to Django Views and Templates -Function-based views (FBVs) and class-based views (CBVs)-Template syntax and tags-Template Inheritance-Creating base templates-Extending templates-Integrating Bootstrap with Django-Adding Bootstrap to the project-Using

Bootstrap components in Django templates-Practical Session-Hands-on practice: Enhancing the CRUD application with Bootstrap for a responsive design

Unit 4: Managing Sessions and Cookies in Django

(9)

Introduction to Sessions-Understanding sessions in Django-Configuring session settings-Working with Sessions-Creating and using sessions-Session management and security-Understanding Cookies-Setting and getting cookies in Django-Using cookies for user preferences-Practical Session-Hands-on practice: Implementing session and cookie-based features in the application

Unit 5: Advanced CRUD Operations and Project Deployment

(9)

Advanced CRUD Operations-Implementing search and pagination-Handling file uploads-Testing Django Applications-Writing unit tests for views and models-Using Django's test framework-Deploying Django Applications-Deployment options (Heroku, AWS)-Preparing the application for production-Configuring web servers (e.g., Gunicorn, Nginx)-Practical Session-Hands-on practice: Deploying the CRUD application to a live server

Course Outcomes:

At the end of the course ,the students will be able to

- Develop real-world Django applications
- Work effectively with the Django ORM
- Implement user interface features
- Deploy a Django application