Django Course Modules

1. **Module I : Basics of Python**
   - 1.1 Variables , naming conventions, printing
   - 1.2 Numbers and Strings, String formatting
   - 1.3 Operators
   - 1.4 List, Tuples
   - 1.5 Sets and Advanced Set Operations
   - 1.6 Python Dictionaries: Length and Sum
   - 1.7 Joining a List
   - 1.8 If statements, Loops (for, while)
   - 1.9 List comprehensions and slicing in Python
   - 1.10 Functions in Python
   - 1.11 Lambda functions in Python
   - 1.12 Decorators

2. **Module II : Structure of Django Project**
   - 2.1 Views and URLs
   - 2.2 Templates
   - 2.3 Rendering Data to Templates

3. **Module III : Database**
   - 3.1 Models & Admin Panel
   - 3.2 Database Relationships
   - 3.3 Database Queries
   - 3.4 Model Forms
   - 3.5 Create Read Update Delete (CRUD)

4. **Module IV : Create a Web Application**
   - 4.1 User Login, Logout and Flash Messages
   - 4.2 User Registration
   - 4.3 Creating Login & Register Page

5. **Module V : Emails and Password Reset**
    5.1 Sending Emails
    5.2 Password Reset

6. **Module I : Django Rest Framework**
    6.1 Setting up a simple API
    6.2 Django REST Framework & Serializers
    6.3 Nested Serializers
    6.4 Setting Up Postman
    6.5 Authentication With JSON Web Tokens
    6.6 GET and POST Requests
    6.7 Sending Data to and from the Frontend

7. **Module II : Permissions**
    7.1 Mixins
    7.2 Class Based Views

Project:

Requirements:

Logins:

i) Admin

ii) Teacher

iii) Student

Key Features:

Store and manage student profiles, including personal details, contact information, and academic history.

Store and manage teacher profiles.

Academic Records:

Maintain a record of student academic achievements, including exam scores, grades, and class performance.

Generate student report cards and transcripts.

Attendance Tracking:

Record and track student attendance for each class and generate attendance reports.

Course Management:

Manage course details, including course curriculum, syllabus, and teacher assignments.

Allow teachers to upload course materials and assignments for students.

Communication Module:

Facilitate communication between teachers, students, and parents through announcements, and notifications.

Grading and Assessment:

Calculate GPA and CGPA for students automatically.

Week 1:

1.1 Login:

i) Via Email OTP

ii) Username and Password

1.2 Admin Dashboard

i) CRUD Operation: Students, Teacher, Course, Batch (Use django serializers)

ii)Allow teachers to upload course materials and assignments for students.

iiI) Excel import and export of the data

Week 2 :

2.1 Maintain a record of student academic achievements, including exam scores, grades, and class performance.

2.2 Record and track teacher attendance for each day (including intervals)

Week 3:

3.1 Generate attendance reports.

3.2 Generate student report cards.

3.3 Generate Course completion certificate

Week 4:

4.1 Facilitate communication between teachers, students through announcements, and notifications.

4.2 Set reminders for each notification at its specified time

4.3 Management command to set Student ID and Teacher ID in the following format:

STD0001,STD0002….

TR0001, TR0002……

Week 5:

5.1 Familiarise custom template tags (for instance create a template tag to display name of a study material uploaded by teacher)

5.2 Image Viewer for all images uploaded

5.3 New requirement to add Country , State and City(dependent dropdowns) in Student and Teacher Profiles

5.4 Familiarise Ajax Call (for instance use ajax to display dependent dropdowns)

5.5 Recaptcha V3

Week 6 (Advanced):

6.1 Chat Module (Use websockets)

Create a chat module between students and teachers

Week 7 (Advanced):

7.1 Optimization: Optimise your current code to get response time at least 50% lesser than the current response time (you can consider Django Query Optimization, Caching, Database Indexing, Template Optimization..)

Week 8 (Advanced):

8.1 Create Video Library Module

8.3 Store and retrieve videos to and from AWS S3 buckets