

Cadence

A Web-Based Virtual Group Study and Co-Working Platform Using Real-Time Collaboration Tools

Weekly Progress Report 1

Course Name: CSE299 Junior Design Project

Course Code & Section: CSE299.4

Project Group No.: 04

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I. DEVELOPMENT PROGRESS

During the first week of the Cadence project, the foundational structure of the web application was successfully established using the Django framework. The primary objective of this phase was to configure the development environment, implement the core architecture, and develop the initial frontend and backend components required for the platform.

1) **Project Initialization and Environment Setup:** During the first week, we configured the global and virtual environment to ensure dependency isolation and maintainability, by following Django project structure. The key implementations were:

- **Centralised Configuration:** Initialized central configuration of Django project in `settings.py`
- **Environment Mapping:** Defined Django file paths and environment variables for template and static directories. This enabled proper loading of frontend assets such as HTML templates, CSS, JavaScript, and images.
- **Main.py:** Created a `main.py` file as entry point of project and changed `BASE-DIR` to ensure project can run from root.

2) **Core Application Creation:** Once the environment and Django server was made, we started working on creating Django application. A Django application is like a blueprint for a functional part of the project. A dedicated Django application named `core` was developed to handle the main functionalities of the Cadence platform. This application serves as the central module responsible for managing user interface rendering, routing, and backend logic integration.

3) **Frontend Interface Development:** Several essential user interface components were designed and implemented using HTML, CSS, and JavaScript. These include:

- Home page interface providing the initial entry point to the platform.
- Login and signup user interface for authentication interaction.

- User dashboard featuring a sidebar navigation system implemented using JavaScript for improved usability.
- User profile page interface integrated with initial backend connectivity.
- Rooms and community rooms interface for collaborative workspace visualization.
- Chatroom interface supporting multimedia elements such as images and audio.
- Settings page interface for future user customization features.

These frontend components establish the structural foundation for user interaction within the Cadence platform. During this phase, we used Figma and Penpot to develop some of the complex UI components, as it allowed us to inspect CSS properties for coding.

4) **Backend Model Implementation:** The initial backend database structure was implemented using Django models. A `UserProfile` model was created to extend the default Django user model by storing additional user-specific attributes such as appearance and customization features.

5) **Routing and Template Integration:** The Django routing system was configured by connecting `views.py` and `urls.py` to the corresponding template files. This lets Django know how to handle requests, routing and application configuration. So there will seamless navigation between different pages of the platform and proper rendering of frontend interfaces.

II. CONCLUSION AND FUTURE PLAN

Overall, this phase successfully established the project foundation, including environment configuration, frontend structure, backend model creation, and routing integration. These components provide a stable base for implementing advanced features such as real-time communication, collaborative study rooms, and user interaction systems in future development phases. Next, we plan to work more on creating models and developing the backend using Django.