Software Engineering Project Presentation

IITM BS Degree Learning Path Recommendation System

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About Us

- **Mohd Ikram** is a student from Prayagraj, Uttar Pradesh. He is in the final year in BS degree in Data Science and Programming. He is enthusiastic about AI and programming. He has been coding since 6th Grade. Reading books and video games are side hobbies.

- **Ranjith** is a student from Hosur, Tamil Nadu. He is a 4th year M.Sc Student at Coimbatore Institute of Technology. His interests include Machine Learning and Programming.

- **Bimlesh Kr Kanth** has rich experience in commercial vehicles sales and marketing. He always had a passion for data analytics. Currently he is pursuing IITM BS Degree course as full time student. This course has helped him tremendously in honing his analytical abilities and learn programming. Currently he lives in Bangalore and loves long drives and trekking.
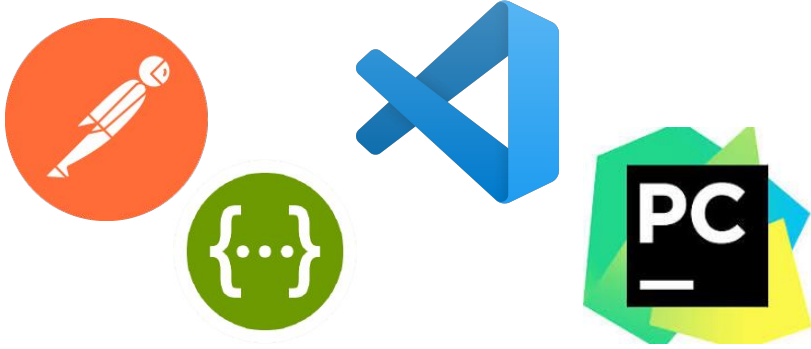
About Us

- **Dhruv Gupta** is a Graduate in Business Administration, working as an Actuarial Specialist with a total experience of 7 years, Expert in data analysis, handling multiple projects simultaneously, and interacting with onshore clients. He is currently enrolled in the degree level of BSc in Programming and Data Science.

- **Rahul Chakraborty** is an engineering graduate has had a passion for Artificial Intelligence and Machine Learning from a time when it was just a cool word. His pursuit of this degree is just a step into the vast world of Data Science that he wishes to take strides in. His technical and analytical skills is what he wishes to polish and enrich further into this field. He currently lives in Kolkata and has a passion for poetry and music too.

Core Project Requirements

- **User Management -** Registration (Student and Admin), Login, Logout, Dashboard (Student and Admin)

- **Course Management -** Add, Modify, Delete and view Courses

- **Course Review Management -** Add, Edit, Delete and view reviews

- **Enrollment Management -** Add, Delete and view enrollments

- Course Recommender System, Enrollment Pages (Student and Admin)

Technologies Used - Development

- As specified in the problem statement, version control software (git) was used throughout the entire project's construction.

- Bash was extensively used to perform version control with git.

- Visual Studio Code and Pycharm was the primary IDE used for developing the app.

- We have also used postman for testing the apis and swagger for api documentation

Technologies Used - Development

- Google Chrome and Microsoft Edge were the browsers used throughout the development process.

- During the development and testing phase, data was inserted, removed, and edited in the SQLite database in the backend using DB Browser for SQLite.

Technologies Used - Frontend

- Flask - Jinja2 templating was used to build the frontend. A lot of Jinja2's features, such as dynamic web page generation, extensions, template inheritance, etc., were utilised.

- The entire application made use of Bootstrap for styling. A variety of Bootstrap elements, including buttons, tables, cards, and more, were used for design.
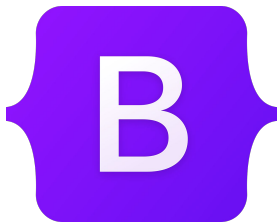
Technologies Used - Backend

- Python-based frameworks were used to develop the backend

- The backend server was built using the Flask web framework. Many Flask sub-components were used, including Flask-CORS (to enable cross-origin queries) and Flask-RESTful (for the API)

- The ORM used to enable interactions between the application's backend Flask API and the SQLite database was Flask-SQLAlchemy.

Technologies Used - Hosting

- Azure cloud is used for hosting the website on the internet

- Virtual Machine was created and setup with network settings on cloud to run the controller and API server online

Challenges we faced - Lessons

- **Time Management -** Navigating through project timelines, team members' schedules, and academic commitments to meet project milestones. Addressing challenges such as quiz schedules and balancing academic work with project deadlines.

- **Clear Vision -** Establishing a clear project vision that aligns with the problem and utilizes the team's expertise. This involves defining achievable goals and objectives for everyone to understand and work towards.

- **Scheduling Coordination -** Facilitating regular team meetings at a specified time remained a persistent challenge. Despite fixing a daily meeting time, coordinating the schedules of all team members proved to be a continuous effort.

- **GitHub Collaboration Issues -** Encountering accessibility challenges on GitHub while collaborating on the project. Overcoming obstacles related to version control and ensuring a smooth workflow for all team members.

Acknowledgement and thanks

- **Course faculties:** Prof. Shridhar Iyer and Dr. Prajish Prasad, for their excellent lecture videos and their effective teaching of the software engineering course.

- **Course instructors -** Mr. Omkar Joshi, and Ms. Shivani for solving our queries on Google Space everytime we had doubts.

- **As a team, all three of us thank each other -** We feel that as a team, we have all been able to work together quite effectively and with great cohesion. We've covered for each other and were able to have a much better outcome collectively.