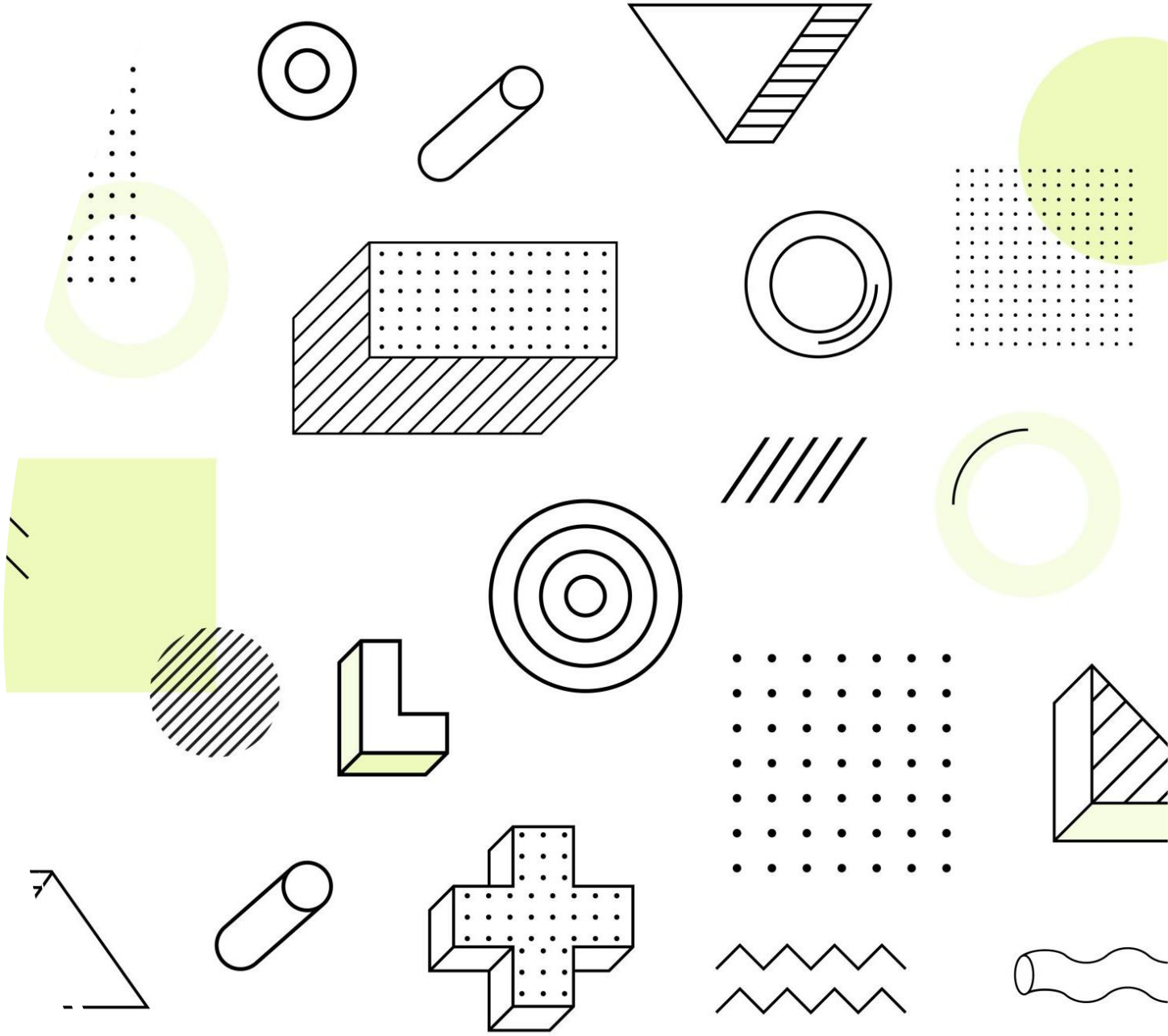
Data Science Challenge Library



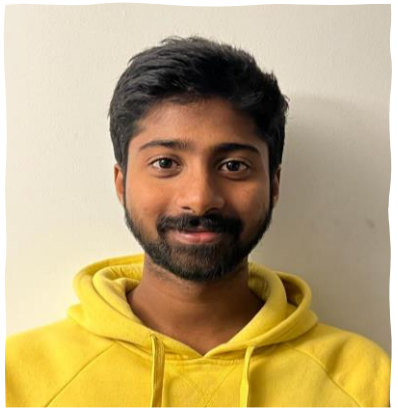
Introduction

- The ***Data Science Challenge Library*** is a small-scale project aimed at creating a website to host and track data science challenges.
- The project will consist of several functionalities that will enhance the learning experience for students in the field of data science.
- The main objective is to provide a platform where students can practice and improve their skills in Artificial intelligence and Machine learning.
- To increase user engagement the website will consist of gamified elements to track their progress, to track the leaderboard.

Our team

Jahirabbas Joynal Khan
BSc in Computer Engineering

Web developer
- JavaScript, React JS
- MySQL



Kavuri Mahesh
BSc in Electronics & Communication Engineering

System Engineer
- Python, R, React
- Cloud Technologies (AWS, Azure)
- Tableau, SQL

Rushda Najeeb
BSc(Hons) in Software Engineering

Software engineer
- Java, Javascript, Angular, Python
- PLSQL, SQL
- Mobile App Development

Pranavi Satheesan
BSc(Hons) in Data Science

Assistant Lecturer in Computing Faculty
-Python, R
-Tableau, PowerBI
-Java, Javascript
-SQL

Roles and Responsibilities

Scrum Master

Oversees the overall progress and coordination of the project.

Ensures tasks are completed on time and within budget.

Facilitates communication within the team and with stakeholders.

Involves in front and back end work as well

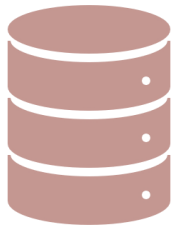
Front End Developer

Designs and implements the user interface of the website.

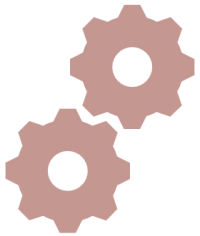
Develops the challenge browsing and filtering functionalities.

Ensures a seamless user experience.

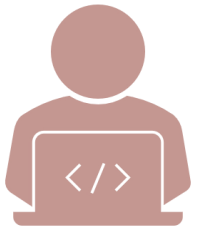
Backend Developer



Creates the database structure to store challenge data and user information.



Implements challenge submission and solution verification functionalities.



Handles server-side programming and integration.

Quality Assurance Tester

Conducts testing of all website functionalities.

Identifies and reports bugs or issues.

Ensures the website is user-friendly and error-free.

Planned Meeting Schedule with the Team:

Streamlined Work Breakdown Structure: A Visual Roadmap to Project Success

Planning phase

Define project scope and objectives.

Identify target audience and their needs.

Conduct market research on existing challenge platforms

Design and Development Phase

Create a user-friendly website layout and interface.

Implement user registration and login functionality.

Develop a database to store challenge data and user progress.

Design an intuitive challenge submission form.

Functionality Development

Implement challenge categories (AI/ML, data visualizations, and Case Studies)

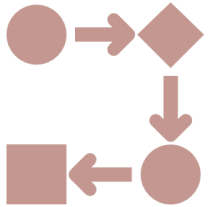
Enable challenge browsing and filtering options.

Develop a solution verification system.

Create a leaderboard to track user performance.

Testing & Refinement

Conduct thorough testing of all functionalities.



Gather user feedback and make necessary improvements.

Optimize website performance and ensure compatibility across devices.

Deployment and Launch

Prepare the website for deployment on a hosting server.

Perform final testing in the production environment.

Launch the Data Science Challenge Library website.

Functionalities of website

User friendly website Layout and interface

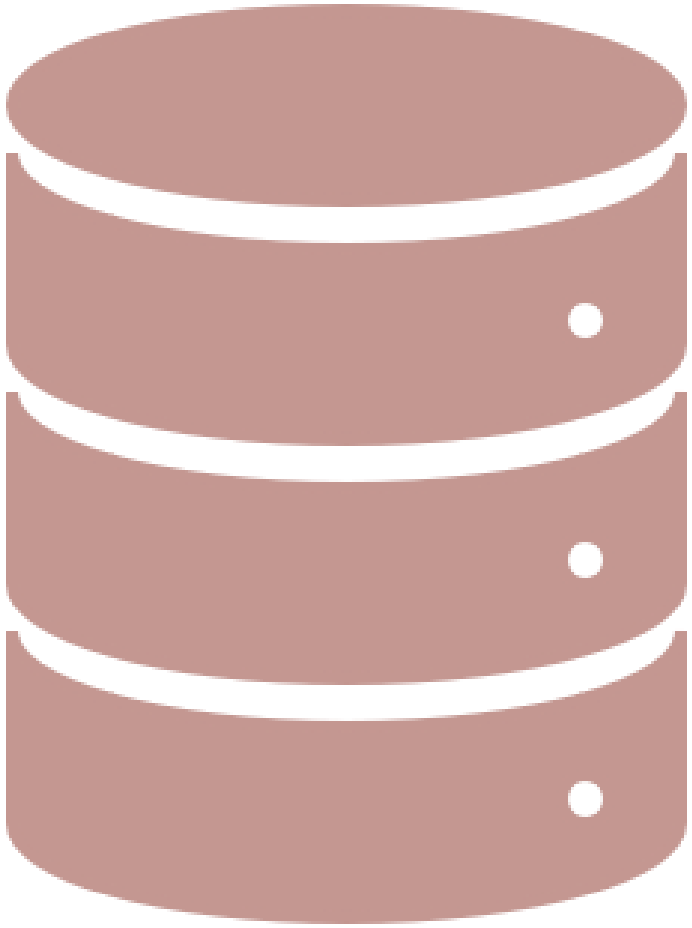
- Choosing a clean and intuitive design layout for the website.
- Optimizing the website for mobile responsiveness.
- Using a consistent color scheme and typography for a cohesive visual experience.
- Ensuring easy navigation with clear menus and buttons.

User Registration and Login Functionality

- Implement a user registration form to allow new users to create accounts.
- Provide options for social media login (e.g., Google, Facebook) for convenience.
- Develop a secure login system with password encryption.
- Enable password reset functionality for users who forget their login credentials.

Database for Challenge data and User progress

- Design a database schema to store challenge data, including case studies.
- Create tables to store user information and track their progress.
- Establish relationships between tables for efficient data retrieval.
- Implement data validation and ensure data integrity.



Intuitive challenge submission form

- Design a user-friendly form for users to submit their solutions to case studies.
- Include relevant fields such as name, email, challenge description, and solution.
- Implement form validation to ensure required fields are filled correctly.
- Provide clear instructions and guidelines for users during the submission process.

Challenge Categories

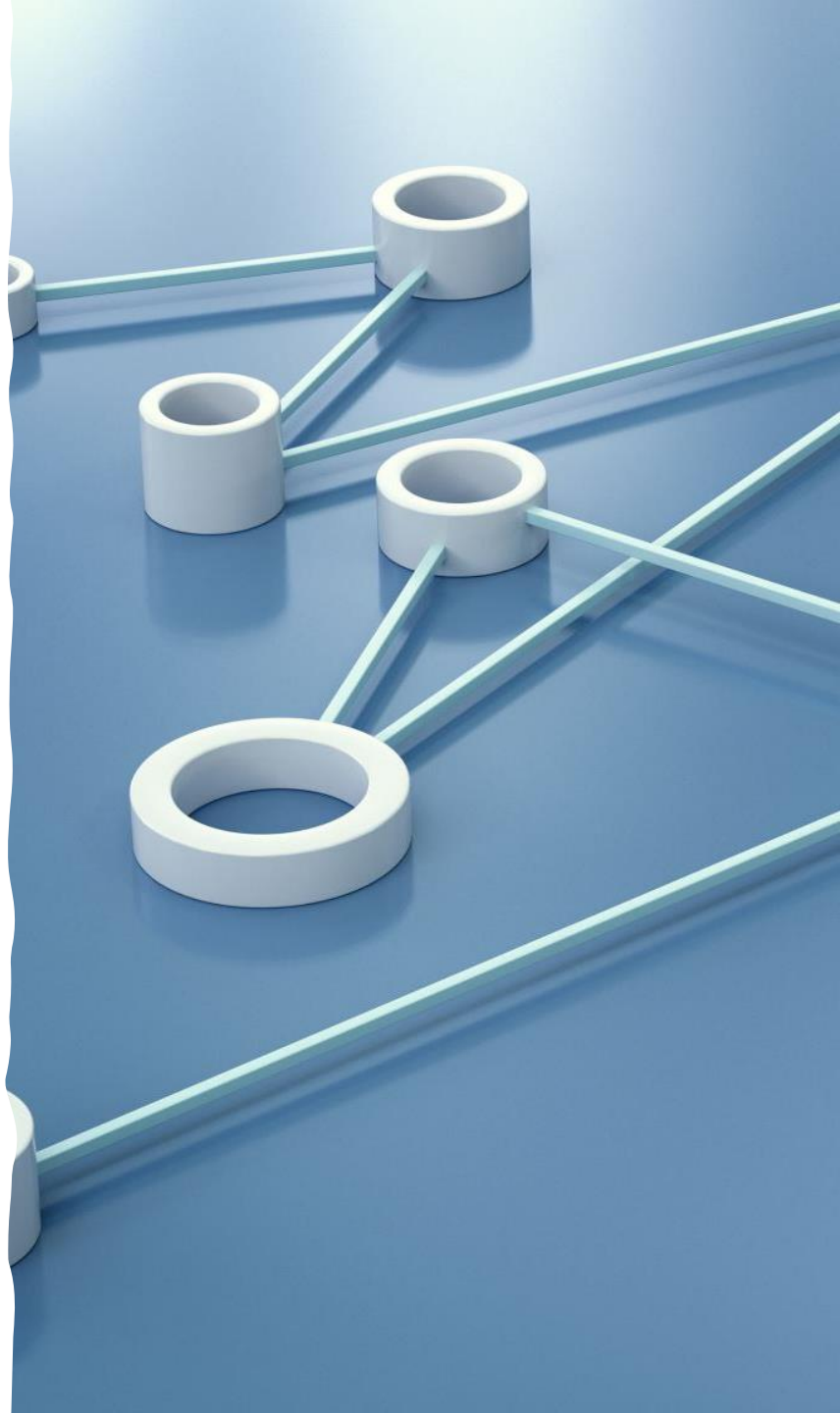
- Implement the "Case Studies" category as the primary challenge area.
- Provide clear descriptions for each case study challenge.
- Allow users to browse and select specific case studies to attempt.

Challenge browsing and filter option

- Create a search bar to allow users to search for specific case studies.
- Implement filters such as difficulty level, industry, or topic to help users narrow down their options.
- Provide sorting options based on relevance, date, or popularity.

Solution verification system

- Develop an algorithm or rules to verify user-submitted solutions to case studies.
- Compare the solutions against predefined criteria or expected outcomes.
- Provide immediate feedback to users, indicating whether their solutions are correct or not.
- Store the verification results in the database for tracking user progress.



Leaderboard to track user performance

- Create a leaderboard that displays user rankings based on their performance in case studies.
- Assign points or scores to each successfully completed case study.
- Update the leaderboard in real-time to reflect user progress.
- Provide options to view overall rankings or filter by specific time periods.

Learning Resources Integration

- Integrate educational resources such as tutorials, articles, videos, or links to external learning materials. Provide additional guidance and explanations related to the challenges to support users' learning.
- Make the resources easily accessible and relevant to the specific challenge or topic.

Collaboration and Discussion Forum

- Create features that enable users to collaborate, discuss approaches, and share insights related to the challenges.
- Implement forums, chat systems, or comment sections where users can interact with each other.
- Incorporate moderation tools to ensure the discussions are constructive and respectful.

Competition and Rewards System

- Organize periodic data science competitions based on the challenges.
- Allow users to participate, submit their solutions, and compare their performance against others.
- Implement a rewards system to recognize top performers, offer incentives, or provide certificates to motivate user engagement and competition.

Upcoming week project plan

- Defining the database entity requirements.
- Designing the website layout for login.
- Implement user database.
- Start gathering questions and answers for the question bank.
- Unit testing for login functionality.

Meeting Plans

- Tuesday-5hrs (including class time)
- Saturday 3hrs
- Sunday 3hrs

- Offline- In class Communication
- Online-Communication through Teams Channel & Group chats

Project’s Budget

Hourly rate per person	$ 50
Hours working on the project for a week	11 hours
Duration of the project	12 weeks
Total Budget	= $50*11*12 = $6600

Tools and languages

- Database: Mongo DB

- Website Implementation language: HTML, Bootstrap, CSS, JavaScript

- Methodology: Agile

Thank you