



DEVBITS

PS-1

INTRODUCTION

This hackathon presents participants with two exciting challenges:

1. **Competitive Programming Arena** – A platform where users can create and participate in custom contests, track performance, and engage in problem-solving with Codeforces integration.
2. **Personal Finance Management Tool** – A web-based application that helps users manage their income, expenses, and transactions with budgeting, analytics, and financial insights.

Participants can choose **either** challenge based on their interests and expertise. 🚀



PROBLEM STATEMENT 1: COMPETITIVE PROGRAMMING ARENA

Objective:

Develop a web-based Competitive Programming Arena where users can create and participate in custom contests, track their performance, and engage in individual and group-based problem-solving. The platform will integrate with Codeforces API for problem redirection, submission tracking, and leaderboard generation.

Key Features:

1. **User Authentication & Profiles** – Secure login, user profiles displaying contest history, rankings, and performance analytics.
2. **Contest Creation & Management** – Users can create private contests, set durations, and select problems, which are redirected to Codeforces for submission and evaluation.
3. **Automated Scoring & Leaderboard** – Real-time leaderboard with an ICPC-style penalty system based on Codeforces verdicts.
4. **Friend Invitations & Team Collaboration** – Users can invite friends to join contests, form teams, and compete in both individual and group-based contests.
5. **Problem Discovery & Customization** – Browse problems by difficulty, tags, and personal performance history.
6. **Notifications & Reminders** – Alerts for upcoming contests, invitations, and leaderboard updates.
7. **Analytics Dashboard** – Insights on performance trends, weak topics, and progress tracking.
8. **Comparison With Friends** – Head-to-head performance comparison in past contests & leaderboard for each contest.

Optional Features:

- **Virtual Rating Graph** – Simulate potential rating changes.
- **Streak Tracker** – Track daily problem-solving streaks with a heatmap.
- **Smart Problem Recommendations** – Suggestions based on weak topics.
- **Live Discussion** – Real-time chat and discussion after contests.

PROBLEM STATEMENT 2: PERSONAL FINANCE MANAGEMENT PLATFORM

Objective:

Develop a web-based Personal Finance Management Platform that helps users efficiently track, analyse, and manage their income, expenses, and transactions. The platform will offer tools for budgeting, financial insights, and transaction organization, ensuring users can make informed financial decisions.

Key Features:

1. **Income and Expense Tracking** – Users can add, edit, and categorize income and expenses (e.g., rent, groceries, entertainment).
2. **Graphs and Visualizations** – Interactive charts displaying financial trends, monthly summaries, and expense breakdowns.
3. **CSV Import/Export** – Users can import bank statements via CSV files and export data for offline use or tax purposes.
4. **Transaction Management** – Search, filter, and sort transactions by date, category, or amount for better financial organization.
5. **User-Friendly Dashboard** – Intuitive UI displaying key metrics such as total income, expenses, and savings.
6. **Data Security & Authentication** – Secure user authentication and secure financial data storage.
7. **Notifications & Bill Reminders** – Alerts for upcoming payments and bills.
8. **Financial Goal Setting** – Users can set savings goals and track their progress.

Optional Features:

- **Bank Account Linking** – Integrate with APIs for real-time transaction syncing.
- **Smart Budgeting** – Suggestions based on spending patterns.
- **Expense Splitting** – Allow users to split expenses with friends, track shared costs, and settle balances easily.
- **Custom Reports** – Generate personalized reports for financial planning or tax purposes.



ASSESSMENT CRITERIA

Submissions will be evaluated based on the following key aspects:

- 1. Functionality & Feature Implementation** – Completeness of core and optional features, seamless user experience.
- 2. Code Quality & Best Practices** – Clean, modular, and well-documented code following industry standards.
- 3. UI/UX & Responsiveness** – Intuitive design, ease of use, and adaptability across devices.
- 4. Deployment & Performance** – Proper hosting, smooth performance.
- 5. Innovation & Scalability** – Unique features, future scalability, and effective problem-solving approach.
- 6. Final Presentation** – Clarity, impact, and demonstration of the solution, highlighting key features and innovation.

Participants are encouraged to think beyond the core requirements and introduce **innovative features** that enhance user experience, efficiency, or scalability. **Unique additions and optional features will earn extra brownie points!**

Participants must complete their chosen problem statement within a strict 7-day deadline from the start of the hackathon, with each team consisting of up to 3 members.