CULRAV AVISHKAR

ANNUAL TECHNO CULTURAL FEST

ELECTROMANIA 2K24-2K25

INNODEV

Rules And Regulations

1. A team may contain at most 4 members from the same year

2. Plagiarism of any kind will result in the elimination.

3. Partial projects will be considered for evaluation.

4. Use of GitHub is encouraged .

5. Use any tech stack you feel is apt for your PS

6. The features are not final but only to give you the intuition of the PS. Be innovative!.

7. Open problems are allowed but on approval.

Event Coordinators :

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S.T.A.R.K. - Student Troubleshooting and Anonymous Resolution Kiosk

Easy

Problem Statement

In the spirit of Tony Stark's vision for a streamlined, responsive command center, H.E.L.M. (Hostel Environment & Living Management) is designed to empower students to voice concerns, make suggestions, and improve hostel life without fearing exposure—much like the Avengers using Stark Tower as a safe base to strategize and tackle challenges.Inspired by Tony Stark's advanced tech at the Avengers Tower, H.E.L.M. (Hostel Environment & Living Management) is designed as a secure, anonymous feedback system where students can submit complaints and suggestions to improve hostel life. Acting as a command center like Stark's J.A.R.V.I.S., H.E.L.M. empowers students (agents) to voice their concerns anonymously, organizing issues into categories like "Mess," "Room," and "Facilities" for easier management by hostel administrators (the S.H.I.E.L.D. directors).

S.T.A.R.K. - Student Troubleshooting and Anonymous Resolution Kiosk

Description

Basic Features:

- Role based login/signup.

User Side:

- A straightforward form where users can submit complaints with fields for type of issue, description.
- Allow users to submit feedback or complaints anonymously to encourage honest reporting.
- Users can view the status of their complaints (e.g., "Received," "In Progress," "Resolved").
- Provide categories (e.g., maintenance, food quality, security) for users to select when submitting a complaint for better organization.

Admin Side:

- A simple dashboard for admins to view all complaints, filter by status or category, and resolve.
- Admins can respond to complaints and provide updates on the resolution process, visible to the user who submitted the complaint.

Advanced Features:

- Allow users to search and filter complaints based on status, date, category, or keywords to find specific issues easily.
- Track and display metrics such as average response time for complaints and resolution rates, helping improve service quality.
- Build a feature where users can view their past complaints, learning about data retrieval based on user sessions.
- Automatically notify users upon submission of their complaint and when there is a status update or resolution.
- After a complaint is resolved, users can rate the response and provide feedback on the resolution quality.

Iron Man's Attendance Dilemma

Problem Statement

Iron Man, juggling his responsibilities as Tony Stark and an Avenger, decides to attend advanced superhero training classes. But even for a genius billionaire, keeping track of class schedules is a nightmare. Every time he checks, there's no central system to record his attendance or see which classes are required to meet the minimum attendance for S.H.I.E.L.D. certification. Sometimes he's marked absent by mistake, and he's constantly missing class because there's no reminder system. With no way to manage his training groups, class details, or attendance percentage, Tony realizes he needs a high-tech solution—fast—to keep his attendance on track and stay ahead in training.

Iron Man's Attendance Dilemma

Description

Basic Features:

- User Registration and Login: Provide functionality for users to register and log in to the application.

- Class and Group Creation: Allow users to create and manage classes or groups.

- Class Details: Each class should include details such as timing, faculty name, and an associated calendar for attendance tracking.

- Attendance Marking: Enable three types of attendance marking: present, absent, and class cancelled.

Advanced Features:

- Attendance Requirement Tracker: Display the number of classes a user needs to attend to achieve a specific attendance percentage (e.g., 75%).

- User Interface: Implement a visually appealing and user-friendly interface.

- Class Reminders: Send notifications to remind users of upcoming classes.

Infinity Short: A Marvel-Themed URL Shortener Extension:

Problem Statement

"Create a Marvel Cinematic Universe (MCU)-themed URL shortener browser extension, named Infinity Short, that allows users to transform lengthy URLs into short, iconic links inspired by the heroes and villains of the MCU. The extension should be as user-friendly as Tony Stark's tech, offering features that make it easy to manage, organize, and utilize shortened links. Each shortened URL will be a powerful tool, just like the Infinity Stones, combining both functionality and flair. Participants are encouraged to implement both basic and advanced features to enhance security, usability, and the Marvel experience, bringing a bit of superhero magic to every link shared."

Infinity Short: A Marvel-Themed URL Shortener Extension:

Description

- Basic Features:

- Role-based login/signup.

- User Side:
- A straightforward form where users can submit complaints with fields for type of issue, description.
- Allow users to submit feedback or complaints anonymously to encourage honest reporting.
- Users can view the status of their complaints (e.g., "Received," "In Progress," "Resolved").
- Provide categories (e.g., maintenance, food quality, security) for users to select when submitting a complaint for better organization.

- Admin Side:
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- After a complaint is resolved, users can rate the response and provide feedback on the resolution quality.

Avengers and the Code Chaos

Problem Statement

The Avengers dive into coding contests, but chaos ensues—Thor can't figure out registration, Hulk's username keeps disappearing, and Tony can't track anyone's ranks or ratings after each contest. They're frustrated without profiles to see progress, and with no live updates, Hulk and Thor argue about who's leading. When Spider-Man suggests forming groups to track scores together, they realize there's no way to send requests or join as a team. As competition grows, Tony sees they need a better way to navigate the coding chaos and unite their skills.

Avengers and the Code Chaos :

Description

-Introducing VisionRank:
- A contest rank predictor extension inspired by Vision's advanced intellect and analytical capabilities.
- This extension is designed to help participants forecast their performance in competitive contests by utilizing data-driven insights and intelligent algorithms.
- Just as Vision combines technology and wisdom to enhance outcomes, VisionRank will empower users to assess their potential rankings based on various factors such as past performances, difficulty levels, and peer comparisons.

- Basic Features:
- User Registration and Login: Enable users to register and log in to the extension.
- Contest Selection and Username Input: Allow users to select a contest and input their username for a particular coding platform (targeting one platform initially).
- Rank and Rating Prediction: Predict the user's rank and updated rating based on their performance in the contest.
- User Profile Tracking: Provide a user profile to track performance over past contests.

- Advanced Features:
- Live Rating Updates: Provide real-time updates on user ratings during ongoing contests.
- Multi-Platform Support: Extend functionality to support multiple coding platforms and their contests.
- Group Performance Tracking: Implement a feature allowing users to create groups to track their friends' contest performances.
- Friend Requests for Contest Groups: Enable friends to receive and accept requests to join a contest performance tracking group.

Captain America's Training Trials

Problem Statement

Captain America is determined to keep his fitness at peak levels, but managing it all without a modern app is a struggle. Without a clear profile for his age, weight, or fitness goals, he finds it tough to log workouts, track calories, or schedule sessions. Missing reminders causes him to skip workouts, and he has no challenges to compete with friends or personalized exercise recommendations. Frustrated with the scattered routine, Cap realizes he needs an all-in-one fitness app to streamline his training, track his progress, and keep him motivated for the battles ahead.

Captain America's Training Trials :

Description

Basic Features:

- User Registration and Profile Creation:
  - Allow users to create accounts and set up profiles with personal information such as age, weight, height, and fitness goals.
- Workout Logging:
  - Enable users to log their workouts, including details such as exercises, sets, repetitions, and weights.
- Exercise Database:
  - Provide a comprehensive database of exercises, complete with descriptions and demonstration videos.
- Calorie Calculation:
  - Calculate the number of calories burned from various exercises, such as running, walking, or gym workouts.
- Calendar and Workout Scheduler:
  - Offer a calendar view that allows users to schedule and plan their workouts in advance.
- Workout Reminders:
  - Send notifications to remind users to complete their scheduled workouts.
- Daily Calorie Calculator:
  - Allow users to log their food intake, and provide an equivalent calorie count based on the food items entered.

Advanced Features:

- Community and Challenges:
  - Create a platform for users to join fitness challenges, compete with friends, and share tips and motivation.
- AI-Powered Recommendations:
  - Use AI algorithms to suggest personalized workout plans and exercises based on the user's profile, preferences, and goals.
- Integration with Wearable Devices and Health Apps:
  - Enable synchronization with wearable fitness trackers and health apps to automatically log workouts and track activity levels.

ShieldHub: Your Gateway to Open-Source Collaboration:

Problem Statement

"Create a Marvel Cinematic Universe (MCU)-themed URL shortener browser extension, named Infinity Short, that allows users to transform lengthy URLs into short, iconic links inspired by the heroes and villains of the MCU. The extension should be as user-friendly as Tony Stark's tech, offering features that make it easy to manage, organize, and utilize shortened links. Each shortened URL will be a powerful tool, just like the Infinity Stones, combining both functionality and flair. Participants are encouraged to implement both basic and advanced features to enhance security, usability, and the Marvel experience, bringing a bit of superhero magic to every link shared."

ShieldHub: Your Gateway to Open-Source Collaboration:

Description

- Basic Features:
- Github OAuth signup/login.
- User Dashboard: Show user contributions, including projects starred, forked, or contributed to and display recently accessed projects and repositories the user frequently visits.
- Project Browsing and Details: Users can browse open-source projects, filter by tech stack or topic, and view details like the description, tech stack, stars, forks, and issues.
- Basic Contribution Tracking: Track contributions across projects and display the tech stacks associated with each project.
- Search: Basic search and filter options for projects, like technology used, popularity, and project tags (e.g., "beginner-friendly").
- Tech Stack Visuals: Interactive chart or graph showing the user's contributions by tech stack and project, highlighting strengths and active areas.

-Advanced Features:
- Enhanced User Dashboard: Detailed user analytics, including a breakdown of contributions by repository and a list of active issues the user is tracking.
- Personalized Project Recommendation: Suggest projects based on the user's previous contributions, starred projects, and common tech stacks.
- Advanced Search and Filters: Comprehensive search and filter options with options to narrow down by contributor count, language popularity, issue type, or time since the last update.
- Progress Tracking: Allow users to set contribution goals and track monthly or yearly progress with graphs and visuals.
- Real-Time Notification: Notify users about changes, new issues, and pull request updates in followed projects or those they have contributed to.

Infinity Canteen: Dining Experience, Assembled

Medium

Problem Statement

"Develop a mobile or web-based app, Infinity Canteen, inspired by the epic scale of Avengers: Infinity War, to transform the dining experience in the college canteen. Just as Earth's Mightiest Heroes band together to face challenges, this app will bring students and staff closer to a convenient, fast, and fun ordering experience. Participants should implement core features for menu browsing, order placement, and secure payments, alongside advanced features that mirror the strengths of iconic Avengers characters and enhance canteen management."

Infinity Canteen: Dining Experience, Assembled :

Description

Basic Features:
- User Authentication with College ID:
  - - Separate login and sign-up flows for students and canteen owners, integrated with the college ID for verification.
  - - Staff members can also have access to this app with customized roles.

- Canteen Menu:
  - - Students and staff can browse the canteen's digital menu, including food descriptions, images, prices, and availability.

Order Placement & Customization:
  - - Users can place orders and customize food items (e.g., choose spice levels, add/remove ingredients).

-Multiple Payment Options:
  - - Support for various payment methods such as credit/debit cards, UPI, net banking, and digital wallets like Paytm, Google Pay.

- Real-time Order Tracking:
  - - Users can track their orders in real-time with notifications for order status (preparing, ready for pickup) and estimated pickup times.

Advanced Features:
-Feedback and Ratings System:
  - - Users can provide ratings and detailed feedback on food items, service, and overall dining experience to help canteen management improve.

- Pre-Ordering and Scheduling:
  - - Users can pre-order meals for a specific time, reducing wait times and avoiding crowds during busy hours.

- Contactless Pickup:
  - - Introduce contactless options like curbside pickup or designated self-serve kiosks with QR code-based confirmation for pickup.

Infinity Canteen: Dining Experience, Assembled :

AI-Based Food Recommendations:
- Implement an AI-driven recommendation system that suggests food items based on previous orders, preferences, and dietary restrictions (e.g., vegetarian, gluten-free).

Dynamic Pricing and Offers:
- Introduce time-based discounts or happy hour deals where certain items are available at a reduced price during non-peak hours to incentivize ordering during off-peak times.

Nutrition Information & Calorie Tracking:
- Display detailed nutritional information (calories, protein, etc.) for each item on the menu. The app can also allow users to log their meals and track daily calorie intake.

Allergy & Dietary Filters:
- Enable users to filter the menu based on allergies (e.g., nut-free, lactose-free) and dietary preferences (e.g., vegan, keto).

Order Sharing and Group Ordering:
- Introduce a group ordering feature where multiple users (e.g., a group of friends) can add items to a shared cart and place a single group order.

In-App Food Donation Feature:
- Allow users to donate meals or funds to help provide food to underprivileged students or the community, as part of a college canteen charity initiative.

Gamification for Regular Customers:
- Introduce a reward or loyalty system where students earn points for each purchase, which can later be redeemed for discounts or free items.

StarkConnect: Powering Careers with Iron Precision :

Problem Statement

"Imagine a job search platform inspired by Tony Stark's genius-level precision and innovation. StarkConnect is designed to help users discover career opportunities with a smart, intuitive recommendation system that works as seamlessly as Stark's tech. Just as Tony Stark matches people to roles in his missions, this platform will help users find openings tailored to their skills, experience, and career goals from a vast array of companies."

StarkConnect: Powering Careers with Iron Precision :

Description

Basic Features:

- User Registration and Authentication: Allow users to create accounts and log in securely.
- Job Listings: Display a list of available job opportunities.
- Search Functionality: Enable users to search for jobs based on keywords, location, industry, etc.
- Filters: Provide filters to refine job search results (e.g., by salary, company size, job type).
- Job Details: Show detailed information about each job listing, including job description, requirements, and benefits.
- Application Submission: Allow users to apply for jobs directly through the platform.
- User Profiles: Enable users to create and manage their profiles, including uploading resumes and setting preferences.
- Email Notifications: Send notifications to users about new job listings, application status updates, etc.
- Bookmarking: Allow users to bookmark/save jobs they're interested in for later viewing.
- Job Alerts: Allow users to set up job alerts based on their preferences and receive notifications when new relevant jobs are posted.

Description

Advanced Features:

- Matching Algorithm: Implement a recommendation system that suggests relevant job listings based on user profiles and preferences.
- Chatbots: Implement chatbots to provide instant support to users, answer common questions, and assist with the job search process.
- Video Interviews: Integrate tools for conducting video interviews directly within the platform.
- Skill Assessments: Offer skill assessment tests for candidates to showcase their abilities to potential employers.
- Analytics Dashboard: Provide insights and analytics for both employers and job seekers, such as application conversion rates, job market trends, etc.

Shang-Chi Campus Connect

Problem Statement

Create a campus-focused online marketplace, Shang Chi Campus Connect, where users can harness the resilience, agility, and skill of Shang Chi to buy, sell, and trade items seamlessly within the college community. This platform should deliver an experience as smooth and efficient as Shang Chi's own precision, helping students connect, engage, and build trust as they trade on a secure, user-friendly platform. Users should be able to search, list, and manage items with ease, while advanced features should provide a personalized, intuitive experience that brings a unique sense of connection and adaptability, much like Shang Chi's own journey.

Participants are encouraged to implement both core and advanced functionalities that highlight community, empowerment, and trust, setting Shang Chi Campus Connect apart from conventional marketplace platforms.

Shang-Chi Campus Connect

Description

Basis:

User Registration and Authentication:

Login and register Easy user registration via email, phone number, or social media accounts.

Password recovery and two-factor authentication for security.

Post Ads: Users can easily post ads by adding details like title, price, and images.

Search Functionality: Enables users to search listings using keywords and filters like price, location, and category.

Location-Based Listings: Shows listings based on the user's current or selected location.

Ad Management for Sellers: Sellers can manage, edit, and delete their ads via a dashboard.

Favorites/Bookmarking: Users can save or bookmark ads for future reference.

Ratings and Reviews: Buyers can rate and review sellers, enhancing trust.

Chat/Communication System: Facilitates communication between buyers and sellers through an in-app chat.

Collax(College Olx)

Description

Advance: AI-Powered Search and Suggestions: Personalizes search results and suggests listings based on user preferences.

Multi-Language and Localization Support: Supports multiple languages and regional settings.

Integrated Payment Gateway: Allows secure transactions directly on the platform.

Advanced Analytics for Sellers: Provides performance insights like views and interactions for listed ads.

Mobile App Push Notifications: Sends real-time notifications for new messages or ads.

Auction/Bidding System: Allows sellers to set up auctions where buyers can place bids.

Widow's Web: A Stealthy Password Manager Extension

Problem Statement

"Develop a browser extension, Widow's Web, inspired by Black Widow's espionage skills and commitment to security, to provide users with a highly secure and seamless experience for storing, retrieving, and generating strong passwords. Just as Natasha Romanoff blends stealth and precision, this password manager should prioritize both top-notch security and user-friendly functionality. Participants should implement core password management features, while advanced capabilities are encouraged to enhance security, convenience, and innovation, echoing Black Widow's resourcefulness and adaptability."

Widow's Web: A Stealthy Password Manager Extension

Description

Basic Features:
- User Authentication & Encryption:
  - Secure login with a master password, using strong encryption (e.g., AES-256) to protect all stored passwords.
- Password Storage:
  - Enable users to securely store passwords for various websites, apps, or services in an encrypted vault.
- Auto-Fill & Auto-Save:
  - Automatically save and auto-fill login credentials when users visit websites.
- Password Generator:
  - Provide a built-in password generator that creates strong, customizable passwords.
- Cross-Platform Sync:
  - Synchronize passwords securely across multiple devices or browsers via cloud storage.
- Password Categories & Tags:
  - Let users organize their passwords with categories and tags (e.g., work, personal, social media).

Advanced Features:
- Two-Factor Authentication (2FA) Integration:
  - Integrate 2FA within the extension, allowing users to store and generate one-time passcodes for enhanced security on 2FA-enabled accounts.
- Security Audit:
  - Offer a password audit tool that evaluates the strength and uniqueness of saved passwords, flagging any reused or weak passwords.
- Biometric Authentication:
  - Enable fingerprint or facial recognition for easy access to the vault, replacing the need for master password input.
- Secure Notes Storage:
  - Allow users to store sensitive data (like PINs, security answers) in encrypted notes.
- Dark Web Monitoring:
  - Monitor the dark web for leaked credentials and alert users if any of their stored passwords are found in breaches.

- Offline Access:
  - Allow users to access stored passwords offline using local encryption, ensuring security even without an internet connection.
- Password Sharing with Expiry:
  - Implement secure password sharing with the ability to set expiration times for shared credentials, ensuring temporary access.
- Password History & Rollback:
  - Allow users to view password history for each account and roll back to previous versions if needed.
- Emergency Access:
  - Designate trusted contacts who can gain access to the password vault in case of an emergency, with built-in safeguards like waiting periods.
- AI-Driven Password Suggestions:
  - Use AI to analyze the user's password patterns and generate strong, context-specific password suggestions, enhancing both security and usability.
- Location-Based Security:
  - Implement location-based protection where certain sensitive passwords can only be accessed from trusted locations (e.g., home, office).
- Zero-Knowledge Architecture:
  - Ensure that all encryption is performed locally, making the extension zero-knowledge, so even developers cannot access users' passwords.
- Stealth Mode:
  - Introduce a stealth mode where the extension can be hidden or disguised, offering extra privacy and avoiding attention from prying eyes.

Hulkify: Unleash the Power of Music Streaming

Problem Statement

"Develop a Hulk-themed music streaming web or mobile application, Hulkify, where users can unleash the power of music with features inspired by the iconic strength and resilience of the Hulk from the Marvel Cinematic Universe. This app should enable users to search, stream, and organize music tracks with an experience as powerful and immersive as Hulk himself. Participants are expected to implement essential music streaming features, while adding advanced and unique functionalities that bring a sense of strength, personalization, and adaptability to the app, setting it apart from existing music platforms."

Hulkify: Unleash the Power of Music Streaming :

Description

Basic Features:

- User Authentication:
  - Allow users to sign up, log in, and manage their profiles.
- Music Search & Play:
  - Let users search for songs, albums, or artists and play them.
- Playlists Creation:
  - Enable users to create, edit, and save their own playlists.
- Play, Pause, & Skip:
  - Provide essential music control options like play, pause, and skip tracks.
- Recently Played:
  - Show a list of recently played songs for quick access.
- Shuffle and Repeat:
  - Include shuffle and repeat functionality for playlists and albums.

Advanced Features:

- Music Recommendation System:
  - Implement a personalized recommendation engine that suggests tracks based on user behavior and preferences.
- Offline Mode:
  - Allow users to download tracks and listen offline.
- Social Sharing:
  - Enable users to share playlists or favorite songs with friends through social media or in-app.
- Dynamic Lyrics Display:
  - Add synchronized lyrics display for songs being played.
- Collaborative Playlists:
  - Allow multiple users to add tracks to a shared playlist.
- Crossfade Between Tracks:
  - Add smooth transitions between songs by incorporating crossfade effects.

Unique Features:

- Mood-Based Playlist Generator:
    - Automatically create playlists based on user mood detection via text input or facial recognition (e.g., happy, sad, energetic).
- 3D Audio Effect:
    - Implement a 3D surround sound feature to give listeners a more immersive audio experience.

- Time Capsule Playlist
    - Allow users to create "time capsule" playlists that will only unlock after a set date, like a music time capsule.
- Voice-Activated Commands:
    - Integrate voice commands for searching songs, controlling playback, or creating playlists.
- Song Annotations:
    - Let users add notes, comments, or personal stories to songs or playlists that others can see and interact with.
- Virtual Concert Mode:
    - Create a feature where users can tune into live virtual concerts by artists or stream concerts in VR.

Black Widow's Note-Taking Nightmare

Problem Statement

Black Widow is tasked with coordinating a new mission for the Avengers, but her note-taking process is chaotic. Without a streamlined way to create and personalize pages, she finds it difficult to organize critical information with text, images, and videos. The lack of Markdown support slows her down, and she struggles to set up workflows without customizable templates. As she tries to keep her notes tidy, collapsible blocks would make navigation easier, but they're absent. Communicating with team members is a hassle, as she can't comment on specific content or mention anyone for clarity. Frustrated with her limited access and the inability to collaborate in real-time, she realizes she needs a powerful note-making app to enhance her efficiency, manage her thoughts, and keep the team aligned on their mission.

Black Widow's Note-Taking Nightmare :

Description

Basic Features:

- User Registration and Profile Creation:
  - Allow users to create accounts and set up profiles with personal information.
- Customizable Pages:
  - Create and personalize pages with various content blocks (text, images, videos, databases).
- Markdown Support:
  - Utilize Markdown formatting for fast and efficient content creation.
- Templates:
  - Access and create templates for quick setup of common workflows and page structures.
- Collapsible Blocks:
  - Organize content with collapsible sections for better navigation and readability.
- Comments and Mentions:
  - Add comments on content blocks and mention team members for discussion.

Advanced Features:

- Implement Role-Based Access Control:
  - Offers team-based permissions and project management.
- Real-time Collaboration:
  - Collaborate in real-time with team members through shared pages and live editing.
- Free Tier Available:
  - With additional features in the paid Pro tier.
- Offline Mode:
  - Access and edit documents offline, syncing changes when reconnected.
- Analytics and Insights:
  - Provide usage analytics for teams to understand engagement and productivity.

Asgard Academy: Unleash Your Learning Potential:

Problem Statement

Introducing Asgard Academy, an online learning management system inspired by the vast knowledge and wisdom of Thor and the realm of Asgard. This platform serves as a powerful educational hub where students and instructors can come together to harness their potential and share knowledge. Just as Thor wields Mjolnir to protect and empower, Asgard Academy allows instructors to create and manage immersive courses while providing students with the tools to enroll, access comprehensive course materials, and engage in meaningful discussions.

Asgard Academy: Unleash Your Learning Potential:

Description

Basic Features:

- User Accounts:
  - Allow students and instructors to create accounts and log in securely to access the platform's features.
- Course Management:
  - Instructors can create, upload, and manage course content, including lectures, quizzes, assignments, and resources.
- Course Browsing and Enrollment:
  - Students can browse through available courses, enroll in courses of interest, and access course materials.
- Access to Course Materials:
  - Students can access lectures, reading materials, assignments, and other course resources provided by the instructor.
- Free Previews:
  - Offer free previews of selected sections or modules before enrolling in a paid course along with a basic instructor profile listing their qualifications and teaching experience.
- Course Reviews and Ratings:
  - Allow learners to review and rate courses they have completed, providing feedback for other learners and course creators.
- Progress Tracking:
  - Track students' progress within each course, including completion status, quiz scores, and assignment submissions.
- User Profiles:
  - Maintain user profiles for both students and instructors, displaying basic information, enrolled courses, and course progress.
- Discussion Forums:
  - Provide discussion forums or chat rooms where students can engage with each other and with the instructor to ask questions, discuss topics, and collaborate on assignments.

Description

Advanced Features:

- Live Streaming Functionality:
    - Integrate live streaming functionality for instructors to conduct real-time classes, webinars, or Q&A sessions with students.
- Paid Courses:
    - Educators can offer paid or subscription-based courses, with the ability to offer discounts, trial periods, or bundled learning paths.
- Interactive Quizzes:
    - Provide interactive quizzes, polls, and assessments within course content to enhance student engagement and learning outcomes.
- Digital Assignment Submission:
    - Implement features for students to submit assignments digitally and for instructors to review, grade, and provide feedback efficiently.
- Notifications:
    - Send notifications to students about upcoming deadlines, new course content, or important announcements.

Strange Tabs: The Sorcerer's Tool for Tab Mastery

Problem Statement

"Develop a browser extension, Strange Tabs, inspired by Doctor Strange's mastery over time and space, to help users manage their open tabs efficiently. This extension should empower users to organize, save, and restore sessions as seamlessly as Doctor Strange manipulates portals, enhancing productivity by streamlining and automating tab management. Participants are encouraged to incorporate both essential and advanced features that offer intuitive control and boost browser performance, creating an experience as powerful and flexible as the Sorcerer Supreme himself."

Strange Tabs: The Sorcerer's Tool for Tab Mastery :

Description

Basic Features:

- User Signup and Login:
  - Secure user authentication for saving and syncing tab management preferences across devices.
- Organize Tabs into Groups:
  - Users can create tab groups, assign names, and color-code them for easy navigation. Groups can be collapsed or expanded as needed.
- Save and Restore Sessions:
  - Users can save current Chrome sessions (including tabs and windows) and restore them later. Manage multiple saved sessions efficiently.
- Tab Preview & Duplicate Highlighting:
  - Provide a single view to preview all open tabs, highlight duplicate tabs, and allow closing or rearranging of tabs as necessary.
- Automated Tab Management:
  - Automatically close inactive tabs based on user-defined time intervals. Restore closed tabs with a single click when needed.

Advanced Features:

- Export/Import Tab Lists and Session Sharing:
  - Allow users to export tab lists as URLs for sharing and import them for collaboration. Export and import entire sessions as well.
- Session Import/Export and Bookmark Management:
  - Enable users to export/import sessions across devices, automatically remove duplicate tabs, and manage bookmarks within the extension.
- Advanced Tab Search and Filtering:
  - Provide a powerful search and filter option, allowing users to find specific tabs quickly by keywords, URL, or tab title.
- Pinned Tab Management:
    Support for pinned tabs, keeping important tabs permanently open and accessible. Pinned tabs should persist across sessions.

- Keyboard Shortcuts and Website Whitelisting:
  - Introduce customizable keyboard shortcuts for managing tabs and allow whitelisting specific websites to prevent their tabs from being auto-closed.
- Tab Group Synchronization:
  - Synchronize tab groups, limits, and session settings across multiple devices in real time.
- AI-Driven Tab Suggestions:
  - Use AI to suggest closing or grouping tabs based on user behavior, helping to declutter the workspace by predicting the user's needs.
- Tab Usage Analytics:
  - Provide users with detailed analytics on tab usage, showing which tabs are used most or least frequently, and recommend actions (e.g., closing inactive tabs).
- Memory Management Mode:
  - Introduce a mode to minimize memory usage by suspending inactive tabs while allowing quick restoration when needed, optimizing browser performance.
- Custom Tab Profiles:
  - Allow users to create custom tab profiles for different workflows (e.g., Work, Study, Personal), each with its own set of saved tabs, groups, and settings. Easily switch between profiles as required.
- Tab Automation with Rules:
  - Implement a feature that lets users set custom automation rules for tab management, such as auto-closing specific types of tabs after a set time or organizing tabs based on content type.
- Cross-Browser Compatibility:
  - Ensure the extension works across multiple browsers (e.g., Firefox, Edge) and syncs tab sessions, preferences, and settings between browsers.

Hawkeye's Diagram Dilemma

Problem Statement

Hawkeye is tasked with designing a new database for the Avengers' operations, but he quickly finds himself overwhelmed. Without a streamlined way to create and modify Entity-Relationship diagrams, he struggles to map out the data structure effectively. His attempts at collaboration with the team turn chaotic, as they can't share diagrams or work together in real-time. Exporting his diagrams is a hassle, and he's unsure how to generate SQL scripts from his designs. Without reverse engineering capabilities, he can't visualize existing databases. Frustrated by the lack of cloud storage and team permissions, Hawkeye realizes he needs a robust database diagram visualizer to streamline the process, enable collaboration, and enhance documentation before they can efficiently manage their operations.

Hawkeye's Diagram Dilemma :

Description

Basic Features:

- User Registration and Profile Creation:
  - Allow users to create accounts and set up profiles with personal information.
- Interactive ER Diagrams:
  - Easily create and modify Entity-Relationship diagrams with a simple DSL (Domain-Specific Language).
- Collaboration:
  - Share diagrams and collaborate with team members in real-time.
- Export Formats:
  - Export diagrams as SQL scripts, images (PNG, SVG), or PDFs.
- Database Support:
  - Supports various databases including MySQL, PostgreSQL, SQL Server, and more.
- Reverse Engineering:
  - Generate diagrams from existing databases using SQL scripts.
- Cloud Storage:
  - Store diagrams in the cloud for easy access and retrieval.

Advanced Features:

- Implement Role-Based Access Control:
  - Offers team-based permissions and project management.
- Free Tier Available:
  - With additional features in the paid Pro tier.
- Multiple Database Support:
  - Supports multiple database types, generates SQL queries from plain language, and includes query optimization.
- Interactive Annotations:
  - Allow users to add comments, notes, or interactive tooltips directly on the diagram for better documentation.

Assemble Arena: A Multiplayer Gaming Platform Inspired by the Avengers

Hard

Problem Statement

"Develop a multiplayer game platform, Assemble Arena, inspired by the teamwork and epic battles of the Avengers, where players can compete, collaborate, and communicate in real-time. This platform should deliver a seamless multiplayer experience, offering features for matchmaking, interactive player engagement, and skill progression, much like the coordination and teamwork of Earth's Mightiest Heroes. Participants are encouraged to implement both essential gaming functionalities and advanced, innovative features that foster a sense of camaraderie and competition, creating a dynamic, engaging experience reminiscent of the Avengers' battles."

Assemble Arena: A Multiplayer Gaming Platform Inspired by the Avengers :

Description

1. Basic Features

User Registration and Authentication:

- Secure account creation and login with email, social media, or game-specific credentials. Two-factor authentication can be added for extra security.

Game Lobby:

- A central hub where users can browse, select, and join various multiplayer games or game modes.

Multiplayer Matching:

- Implement skill-based or preference-based matchmaking to pair players for competitive or cooperative game sessions.

Real-Time Chat:

- Enable text-based real-time chat for players to communicate during and after game sessions. Include private messaging between friends or teammates.

Game Rooms:

- Create virtual game rooms where players can gather, chat, and get ready before starting a match.

Leaderboards:

- Display leaderboards at global, regional, and friend levels to promote competition and track top-performing players.

Player Profiles:

- Allow users to create customizable profiles that display their in-game statistics, win/loss ratio, game history, and rank.

Notifications:

- Notify users of friend requests, game invitations, match results, and other relevant updates.

2. Advanced Features

- Voice Chat:
- Integrate real-time voice chat to allow players to communicate verbally during game sessions, with options for team-only or global chat.
- In-Game Purchases:
- Implement a marketplace for players to purchase cosmetic items (skins, avatars), power-ups, and additional content (new levels, characters) using in-game currency or real money.
- Spectator Mode with Commentary:
- Add a spectator mode that allows non-players to watch live games with real-time commentary features, giving a professional tournament feel. Players can also stream directly from the game for others to watch.
- Tournament System with Automated Brackets:
- Introduce a tournament system where players can join or create tournaments with automated bracket management, structured rules, and rewards for winners.
- Cross-Platform Play:
- Implement cross-platform functionality that allows players on different devices (PC, mobile, console) to play together in the same game sessions.
- AI-Generated Game Events:
- Add dynamic, AI-generated in-game events that change the gameplay experience, such as environmental changes (weather effects), surprise challenges, or temporary game modes that offer new objectives or bonuses.

3. Unique Advanced Features

- Player-Driven Economy:
- Introduce a player-driven economy where users can trade or sell in-game items to other players through an auction or marketplace system, creating a more engaging and immersive environment.
- Custom Game Modes and Modding Support:
- Allow players to create custom game modes or maps, with a modding toolkit for adding new rules, mechanics, or characters. These custom games can be shared and played by the community.
- AI Teammates for Solo Players:
- Include AI-driven bots that can act as teammates for solo players who want to participate in multiplayer games but can't find enough human players.
- Player Reputation System:
- Implement a reputation system where players can give feedback on their teammates' behavior and sportsmanship. A high reputation could unlock rewards, while negative behavior could result in restrictions.
- Interactive Game Environments:
- Create dynamic environments that evolve during gameplay, such as destructible buildings, day-night cycles, or map areas that unlock as certain conditions are met.
- AR/VR Integration:
- Add augmented reality (AR) or virtual reality (VR) features for certain game modes or interactions, allowing players to experience games in immersive 3D environments.
- Live Player Coaching:
- Introduce a feature where experienced players can join games as coaches, giving real-time advice to newer players or even directing team strategies during gameplay.
- Skill-Based Progression and Rewards:
- Implement a progression system where players unlock new skills, abilities, or game modes as they progress, rewarding players not just for wins but for improving their overall gameplay.

VISHKAR

ELECTROMANIA
2K24-2K25

THANKYOU !!