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Current occupation	Student
Education Details	• College Name – Chaitanya Bharathi Institute of Technology (graduation at 2026) • Degree Name – Bachelor of Engineering • Branch of Engineering – Computer Science and Engineering
Technical skills with level	• Programming Languages-python(intermediate),java(novice) • Web Development-HTML (intermediate),CSS(intermediate),bootstrap (intermediate), ,react.js (intermediate),node.js(intermediate) • Software Development-OOPS(intermediate),version control(novice),github(intermediate) • Databases-SQL with OracleDB (Intermediate), NoSQL with MongoDB (Novice) • Chatbot-keras(intermediate),tensorflow(intermediate),tkinter(novice),Scikit-learn(intermediate),NLTK(novice)

<u>Title:</u>

TaskCraft: Crafting Success Through Cooperative Quests

Summary:

TaskCraft is an application for task management but similar to participating on an epic quest. When a task is completed ,we move to a new stage(every theme such as guild/fantasy world/space and more based on users, has various interface changes to make the website more alive), giving users a sense of progression and achievement like advancing levels in a game. TaskCraft will enable teams to collaborate efficiently using chats ,meets, notifications, emergency tasks or in this platform emergency quests, tackling tasks one stage at a time. From prototype development to an official release ensuring security and data privacy ,TaskCraft will transform task management into an adventure where teams will unite to conquer challenges and emerge victorious. Various features are present such as google calender integration, linking work emails to automatically create a task when it is received from team/organization, security for confidential meets ,a chatbot for simplifying complex interface (creating task on behalf of user, clarifying doubts,),also a regression model(users completion analysis) for smooth interfacing .Join the quest, and let's conquer tasks together, one level at a time.

Git Hub Link to Project: https://github.com/a2i-code-For-Govstack/task-manager/issues/1

Project Detail

1. **Project Overview:**
   a. **Understanding of the project:**
   The Task Manager is a online platform aimed at providing users with efficient task and event management, along with collaboration tools and various communication features.The basic features required are user-friendliness(), productivity enhancement, organization ,divisions, collaboration, accountability,streamlined communication, and security. The development scope includes features such as Google Calendar integration, notification service integration, single sign-on (SSO) login, and UI/UX enhancements(crucial part of project).
   We can add additional features like chatbot, user/traffic analysis ,a leaderboard system tabulated based on efficiency, amount of task done for each party,etc.
   b. **Problems (if any):**
      i. **UI/UX Design Challenges:**
      Enhancing UI/UX to achieve optimal user-friendliness and productivity may be challenging due to diverse user preferences and usability standards.
      While visiting current task manager websites, almost all websites have various tools which were difficult to navigate through and were not appealing enough to use them again regardless of various features. Hence designing an intuitive interface that looks appealing a wide range of user needs and preferences can be difficult.
      ii. Data Privacy and Security Compliance Concerns:
         1. We must regularly apply updates with data privacy regulations and implementing security measures.
         2. We need to take note of keeping Backups ,cache systems and external APIs like Firebase Cloud Messaging.
      iii. Real-time Communication Performance Issues:
         1. Providing real-time chat and meets may lead to performance issues ,during high traffic.
         2. Ensuring smooth real-time communication for users

might be hard due to performance limitations like hangs/server lags.

c. **Solutions:**

i. User Research and Iterative Design:
I have thought of introducing various themes depending on group strength such as

1. Guild Hall Theme:Provides a familiar setting like a community hub.In this there will be a hall with bounty tasks on a board when a user clicks on the board he will be shown all his tasks and interface.The teams in that organization will have separate rooms with the tasks of whole team,a common room for common tasks and if possible a leaderboard system to display the performance of team members for a specific task. Appeals to users who enjoy cooperative or team-based activities.Suitable for both professional and personal task management.

2. Fantasy World Theme:Offers a sense of adventure and escapism.I have thought of keeping a forest theme similar to adventure map where each piece of forest has a specific task to complete before unlocking. Completing tasks will change the interface like shooting arrows, finding their resources/team at a place by waterfall / cave, options can be made on basis of user survey .Appeals to users who enjoy role-playing and storytelling elements.Can be adaptable to different types of tasks and projects.

3. Space Explorer Theme:Provides a futuristic and dynamic interface.I have thought of introducing a journey through a universe ,where each planet is a task to explore and work on .Appeals to users who prefer a modern and streamlined design. Gives a sense of exploration and progress, suitable for both personal and professional tasks.

4. In the end users opinion is the most important factor in designing an interface, after taking users' response refine and improve the UI/UX design.

ii. Clear Policies and Regular Checks:

1. Notifying users of data privacy policies and regularly communicate them to users which will ensure users' privacy.

2. We need to Conduct regular security checks to identify and address potential vulnerabilities and faults.

iii. A Scalable Infrastructure and Optimization:

1. Utilize scalable infrastructure like google cloud to handle real-time communication traffic efficiently, this is useful during peak usage times.

2. Optimize the code and use efficient data caching mechanisms to speed up in real-time communication features.

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2. **Implementation Details:**
   - **a.** User-friendly Interface Development:
     - **i.** Tech Stack: HTML, CSS, JavaScript, Larvel ,React.js
     - **ii.** Approach: Here we develop a responsive and themed UI with clean design elements and easy navigation. We Use React.js for dynamic rendering and state management, or Larvel for complete framework ensuring a smooth user experience across devices.
   - **b.** Enhanced Productivity Features:
     - **i.** Tech Stack: Node.js, Express.js, MongoDB
     - **ii.** Approach: Here we build backend services using Node.js and Express.js to handle various task management functionalities like task priorities, deadline reminders, time tracking, other features that depend on user inputs /saving tasks, completed tasks, profile are stored in MongoDB for scalability and flexibility.
   - **c.** Organization:
     - **i.** Tech Stack: Redux, Material-UI
     - **ii.** Approach: Here we utilize Redux for centralized state management, making categorization easier and filtering options. We need to implement Material-UI components for design patterns and easy integration.
   - **d.** Collaboration:
     - **i.** Tech Stack: Socket.io (for real-time communication), Google Calendar API
     - **ii.** Approach: We use the help of Socket.io for real-time chat and task comments, allowing smooth communication among team members. We also Use Google Calendar API for calendar sharing and event management functionalities.
   - **e.** Accountability:
     - **i.** Tech Stack: Firebase (for authentication), GraphQL (for API)
     - **ii.** Approach: Here we implement Firebase for secure authentication using single sign-on (SSO) to ensure accounts are not misused.We require GraphQL for fetching data and utilizing it for enabling users to track progress and receive notifications for assigned tasks.
   - **f.** Streamlined Communication:
     - **i.** Tech Stack: GraphQL, Apollo Client(for flexibility)
     - **ii.** Approach: We need GraphQL for querying and mutating data, including real-time chat and task comments. We can also try to Implement Apollo Client for data fetching and management.
   - **g.** Ensure Security and Data Privacy:
     - **i.** Tech Stack: JSON Web Tokens (for authentication), SSL encryption
     - **ii.** Approach: Here we use JWT tokens for secure authentication, ensuring only authorized users access the platform. We implement SSL encryption for transmitting data to protect sensitive information. Regularly update security measures and protocols to agree with data privacy regulations.
   - **h.** Google Calendar Integration:
     - **i.** Tech Stack: Google Calendar API, OAuth 2.0(access)
     - **ii.** Approach: As specified in project we need to integrate Google Calendar API to allow users to add events directly to their Google Calendar from TaskCraft. We also use OAuth 2.0 for secure

authorization and access to Google Calendar data.

i. Integration with Notification Service:
  - **i.** Tech Stack: Pusher, Firebase Cloud Messaging (FCM)/Web Pusher
  - **ii.** Approach:We take help open souce APIs like Pusher or FCM to send real-time notifications to users for upcoming deadlines, task assignments, or important updates within the platform.

j. Login through SSO:
  - **i.** Tech Stack: OAuth 2.0 (Google SSO)
  - **ii.** Approach: We implement OAuth 2.0 authentication using Google to enable users to log in securely with their existing credentials.

3. **Timeline Details:**
   - **a. Milestone 1: Prototype Development(week 1-6)**
     - **i.** Weeks 1-2: Frontend Development (UX/UI)
       1. Develop basic UI wireframes and layouts based on user research and design themes (Guild Hall, Fantasy World, Space Explorer).
       2. Implement responsive design using HTML, CSS, and initial React.js components.
     - **ii.** Weeks 3-4: Backend Development (Basic Functionality)
       1. Set up the basic backend system Node.js and Express.js server.
       2. Implement CRUD operations for tasks and user management.
       3. We Integrate MongoDB for data storage and retrieval.
     - **iii.** Weeks 5-6: User Authentication and Authorization
       1. Implement Firebase authentication for user login/signup.
       2. Set up JWT token generation and verification for secure API access.
       3. Develop initial user profile management functionality.
   - **b. Milestone 2: User Testing (week 7-10)**
     - **i.** Weeks 7-8: User Testing and Feedback Gathering
       1. We Deploy prototype to a test environment.
       2. Gathering feedback from users through surveys, interviews, and usability testing.
       3. Identify areas for improvement in UI/UX, functionality, and performance.
     - **ii.** Weeks 9-10: Iterative Development and Enhancement
       1. Use feedback by user to refine UI/UX design elements.
       2. Address reported bugs and usability issues.
       3. Enhance backend functionality based on user requirements.
   - **c. Milestone 3: Official Release (week 11-12)**
     - **i.** Weeks 11-12: Final Polishing and Official Launch
       1. Implement Google Calendar integration for event management.
       2. Integrate Pusher or Firebase Cloud Messaging for real-time notifications.
       3. Finalize SSO login integration with OAuth 2.0.
       4. Conduct thorough testing and debugging.
       5. Prepare documentation and support materials.

6. Deploy the Task Manager to test environment with authentication policies.
7. Launch the Task Manager to the public, making it availabile for organizational employee use.

Availability

Number of hours available to dedicate to this project perweek	28 hours (June-July) 16 hours (August-September)
Do you have any other engagements during this period ?(projects/internships)	None in the period of June-July August-September 3rd year starts

The college I am currently studying in has provided us with a 30-45 days period of working on our internships between June and July. After July 1st ,I have to attend classes which will reduce the time available for me to contribute. The timeline I have provided from June to September on average of 24 hours per week(approx) and I will be focusing on completing as much as possible within 2 months and leave a month for testing the website.At the time of my examinations, I may allot less than 20 hours a week.

Personal Information

About Me:

I am M.Kaushik Sai. I like to play chess and love nature, I am a stargazer, creating characters by watching the clouds is my favorite. I have a keen interest in solving real-world problems , participating in hackathons and am currently a 2nd year CSE student in CBIT. I am a dynamic learner, enjoy working in teams as each teammate can suggest a world of random ideas. I do better as an individual to complete my tasks as I can control the flow .I like to listen to music, podcasts to keep me updated with the world. I explore new technologies and try to implement them regularly. I am part of rover team of Chaitanya Astra ,United Coders club and project co-lead of Neural Nexus clubs of CBIT.

What is your motivation to apply for this project? Answer briefly in 3-4 lines.

I have always wanted to make an application which can link games and work life together making every day works more fun. This project is perfect for implementing my idea. Also ,we get to work with mentors which will really help me in acquiring the needed skills and aid me in learning and applying my knowledge .After this experience I would like to be more active in the open-source communities and work on more related projects which can directly impact the world.

Previous Experiences/Useful for present project:

Project Name	**Project Description**	**Link**
AI Chatbot	Prakriti Chatbot, assesses body and mind characteristics based on user input. Key components include feature mappings, GUI initialization, user input processing and continuous interaction loop.(This can be used to make a user friendly chatbot using deep learning for the website to create tasks, subtasks, and much more on behalf of user,summarize tasks if required).	https://github.com/kaushiksai711
E-commerce Website	A Website where you can buy,sell,view,arts and crafts(made using HTML,CSS,Bootstrap,JS and is mobile responsive)	https://github.com/kaushiksai711
Landmark Detections,	Utilizing VGG19 to detect landmarks and recognize them ,(can be utilized to create a customized stages with images given by users)	https://www.linkedin.com/in/kaushik-sai-mamidi-663b412a0
Various projects on Regression	One of them is Predicting the amount of time required by a student to prepare for exam given his conditions such as location ,subject and other parameters(can be used in estimating workload and time of completion for similar tasks which can later be used to predict traffic of users to manage peak times)	https://www.linkedin.com/in/kaushik-sai-mamidi-663b412a0

Contribution in C4GT's open community:

Have you contributed to tickets in C4GT's open community? **(Mandatory toanswer)**	No
Have you successfully completed C4GT's GitHub Classroom Assignment? **(Mandatory to answer)**	Yes

Enter your DPG points **(Mandatory to answer, Enter 0 if not applicable)**	100
Screenshot of leaderboard with your GitHub ID **(Mandatory to answer, enter0 if not applicable)**	GitHub Classroom Assignment Repository Link: https://github.com/status-20X/stylusdb-sql-assignment-kaushiksai711