Full Stack Development with MERN

1. Introduction

- **Project Title:** FreelanceFinder: Discovering Opportunities, Unlocking Potential
- **Team Members:** Vasamsetti Balu [Team Leader]
  Talatam Likhitha [Team member]
  Shaik Sandhani Basheer [Team member]
  Sambhara Vagdevi [Team member]

2. Project Overview

- **Purpose:** The purpose of the SB Works Freelance Platform is to create a seamless and interactive environment where clients and freelancers can connect, collaborate, and manage projects efficiently. It is designed to bridge the gap between job providers and skilled professionals by offering a digital space that supports project posting, bidding, assignment, communication, and delivery. The platform is built to simplify the freelance workflow, ensure transparency, and maintain smooth communication from project initiation to final submission and approval.
- **Key Features:**
  - User Authentication Secure registration and login for clients, freelancers, and admins.
  - Project Posting Clients can post new freelance projects with details like description, skills, budget, and deadline.
  - Proposal Bidding System Freelancers can submit proposals with bid amount, estimated time, and description.
  - Application Management Clients can view proposals, accept or reject bids, and assign projects to freelancers.
  - Project Dashboard Freelancers and clients have separate dashboards to track assigned and applied projects.
  - Real-Time Chat System Socket.io-powered chat for seamless communication between clients and freelancers.
  - Project Submission Freelancers can submit project links, manuals, and descriptions for client review.
  - Client Review Clients can approve or reject submissions; approved submissions complete the project.
  - Admin Panel Admin can monitor project counts, user activity, and overall application performance.
  - Status Tracking Clear status updates for each project: Posted, Assigned, Completed, etc.

3. System Architecture

- **Client Layer (Frontend)**
  Technology: React.js
  Users: Clients, Freelancers, Admin
  Role: Provides interactive UI for registration, login, project posting, bidding, and chat.
  Manages user sessions using local storage.
  Interacts with backend APIs using Axios.
  Real-time chat interface powered by Socket.IO.
- **Server Layer (Backend API)**
  Technology: Node.js + Express.js
  Responsibilities: Handles API requests and responses for authentication, project management, proposal handling, and submissions.
  Socket.IO server for real-time communication.
  Middleware for validation and authorization.
  Separate routing for admin, user, and project operations.
- **Real-Time Layer (Chat System)**
  Technology: Socket.IO
  Functions: Enables freelancers and clients to join project-specific chat rooms.
  Handles message transmission instantly across both user interfaces.
  Chat is only enabled when a project is assigned.
  Messages are stored in MongoDB for persistence.
- **Data Layer (Database)**
  Technology: MongoDB
  Role: Stores users (clients, freelancers, admins), projects, proposals, chats, and submissions.
  Uses Mongoose schemas to define and interact with collections.
  Supports real-time data fetch for updates like proposals, submissions, and messages.

4. Setup Instructions

- **Install Prerequisites :** Node.js, npm, MongoDB (local or Atlas)
- **Clone Repository :** git clone https://github.com/your-username/sb-works-freelance-platform.git
- **Start MongoDB :** Run mongod (or connect Atlas DB)
- **Setup Backend:** cd server npm install npm start
- **Setup Frontend:** cd client npm install npm start
- **Access the App:** Frontend: http://localhost:3000
- **Backend API:** http://localhost:6001
- **Socket.IO:** Real-time chat works only for assigned projects.

5. Folder Structure

- **Client (React Frontend) :** The client directory contains the entire frontend built with React.js.It is organized as follows:
  public/ – Contains static files like index.html and images.
  src/ – Main source code folder:
  components/ – Reusable components such as buttons, cards, input forms.
  pages/ – Page-level components (e.g., Home, Login, AllProjects, MyProjects).
  context/ – React context for managing global state (user, socket, etc.).
  styles/ – All CSS styles specific to components and pages.
  App.jsx – Main application file managing routing and layout.
  package.json – Lists frontend dependencies and scripts.
- **Server (Node.js + Express Backend):** The server directory is built with Node.js, Express.js, and MongoDB.
  It is organized to maintain a clean and scalable structure:
  models/ – Mongoose schemas for User, Project, Application, Chat.
  routes/ – API route files that handle HTTP requests.
  controllers/ – Functions that handle business logic and interact with models.
  SocketHandler.js – Manages Socket.IO logic for real-time messaging.
  index.js – Entry point of the server; sets up Express, MongoDB connection, and sockets.
  package.json – Lists backend dependencies and scripts.

6. Running the Application

To run the project locally, follow these steps for both the frontend and backend servers:

- **Frontend (React) :**
  - Open a terminal.
  - Navigate to the client folder: cd client
  - Start the React development server: npm start
  - The frontend will run at: http://localhost:3000
- **Backend (Node.js + Express) :**
  - Open another terminal window.
  - Navigate to the server folder: cd server
  - Start the backend server: npm start
  - The backend will run at: http://localhost:6001

7. API Documentation

- **User APIs:**
  POST /register

Registers a new user.
Request Body:

```
{
  "name": "John Doe",
  "email": "john@example.com",
  "password": "123456",
  "role": "freelancer"
}
```

POST /login
Authenticates a user.
Request Body:

```
{
  "email": "john@example.com",
  "password": "123456"
}
```

- **Project APIs:**
  POST /post-project
  Allows a client to post a new freelance project.
  Request Body:

```
{
  "title": "Build Portfolio Website",
  "description": "React-based portfolio site",
  "budget": 5000,
  "skills": ["React", "CSS"],
  "clientId": "abc123"
}
```

  GET /fetch-projects
  Returns a list of all available projects.
  GET /fetch-project/:id
  Returns detailed info for a specific project.
- **Application (Proposal) APIs :**
  POST /make-bid
  Allows a freelancer to apply to a project.
  Request Body:

```
{
  "clientId": "abc123",
  "freelancerId": "def456",
  "projectId": "proj789",
  "bidAmount": 4500,
  "estimatedTime": "4 days",
```

"proposal": "I can deliver this on time with great quality."
}
GET /fetch-applications
Returns all applications for the logged-in client.
GET /approve-application/:id
Client approves a specific proposal.
GET /reject-application/:id
Client rejects a specific proposal.

- **Chat APIs:**
  GET /fetch-chats/:projectId
  Fetches chat history for a specific project.
  Real-time chat is handled via Socket.io.
  new-message
  join-chat-room
  message-from-user
- **Submission APIs**
  POST /submit-project
  Freelancer submits final project details.
  Request Body:
  {
  "projectId": "proj789",
  "projectLink": "https://github.com/myproject",
  "manualLink": "https://drive.com/manual",
  "submissionDescription": "This is the final version."
  }

  GET /approve-submission/:projectId
  Client approves submitted project.
  GET /reject-submission/:projectId
  Client rejects submission and allows resubmission.

8. Authentication Flow

- **User Registration (POST /register):**
  New users (freelancers or clients) register by providing name, email, password, and role.
  User details are stored securely in the database with hashed passwords.
- **User Login (POST /login):**
  Validates the user's credentials against stored records.
  If credentials match, the backend sends back: userId , role (either "client" or "freelancer")

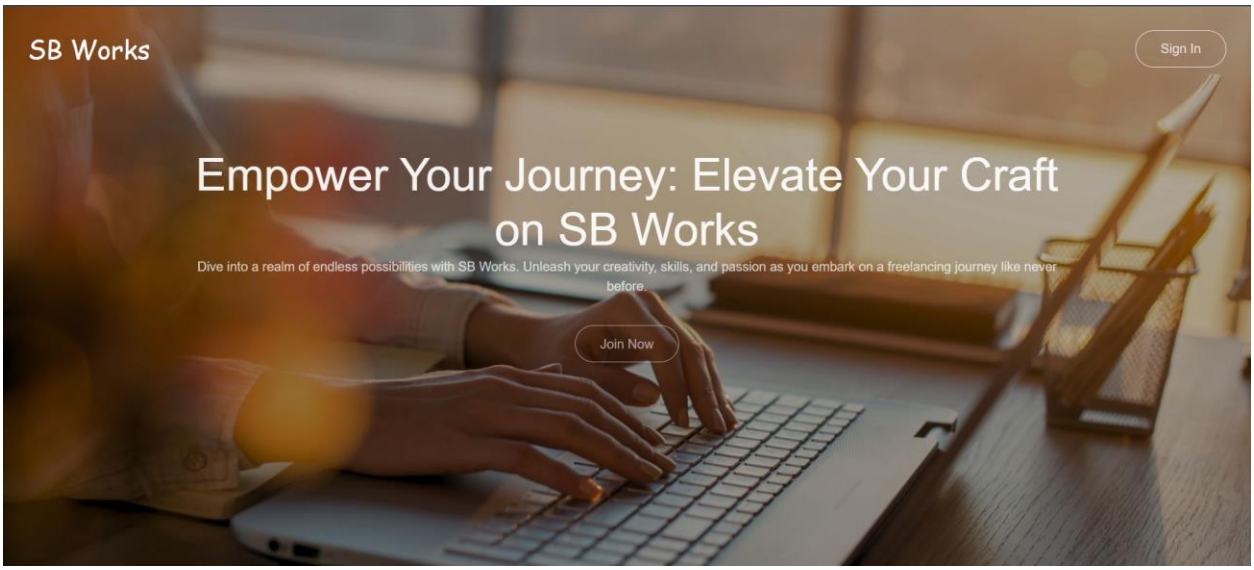
  These are stored in the frontend using localStorage.

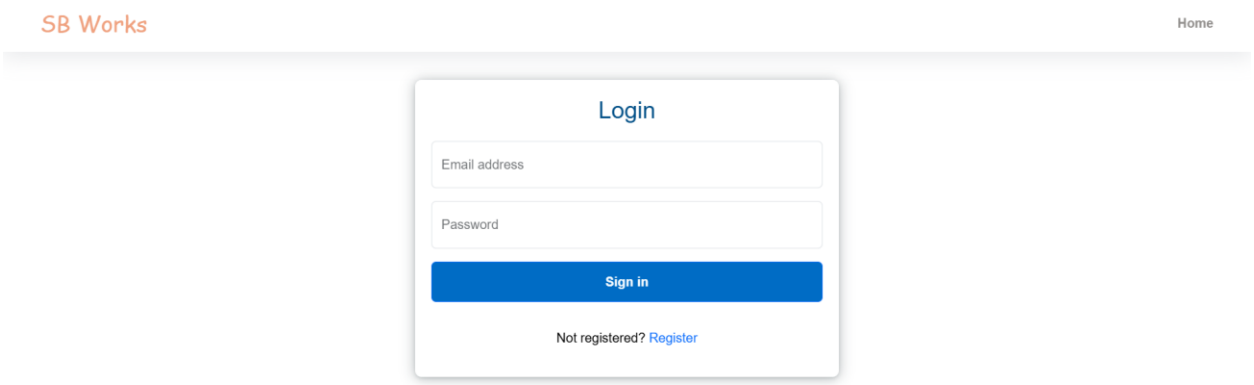
9.Testing

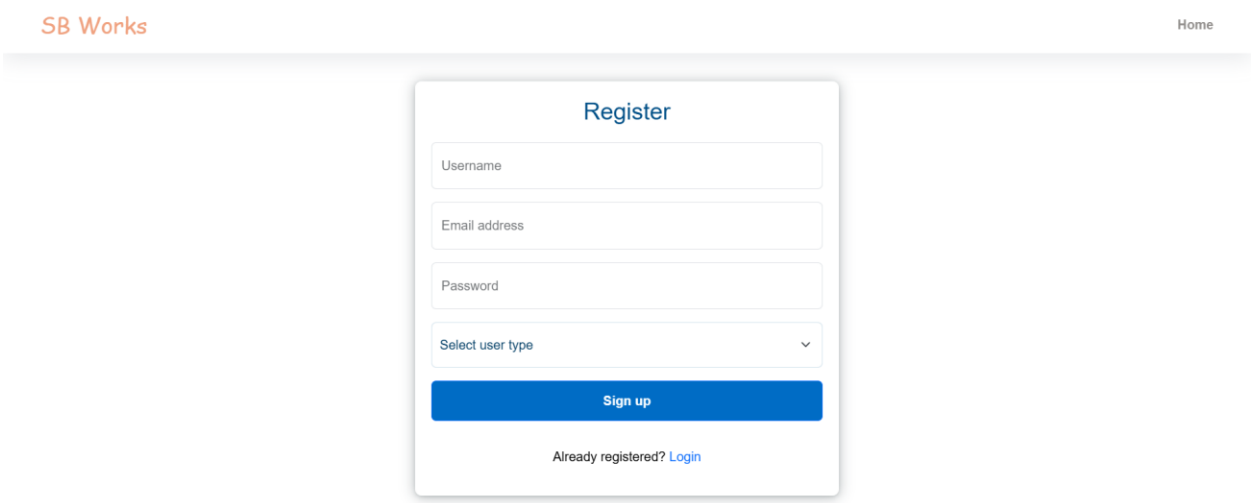
Testing Strategy : The project follows a manual and functional testing strategy to ensure all user flows and features work as expected across different roles (Client, Freelancer, and Admin).

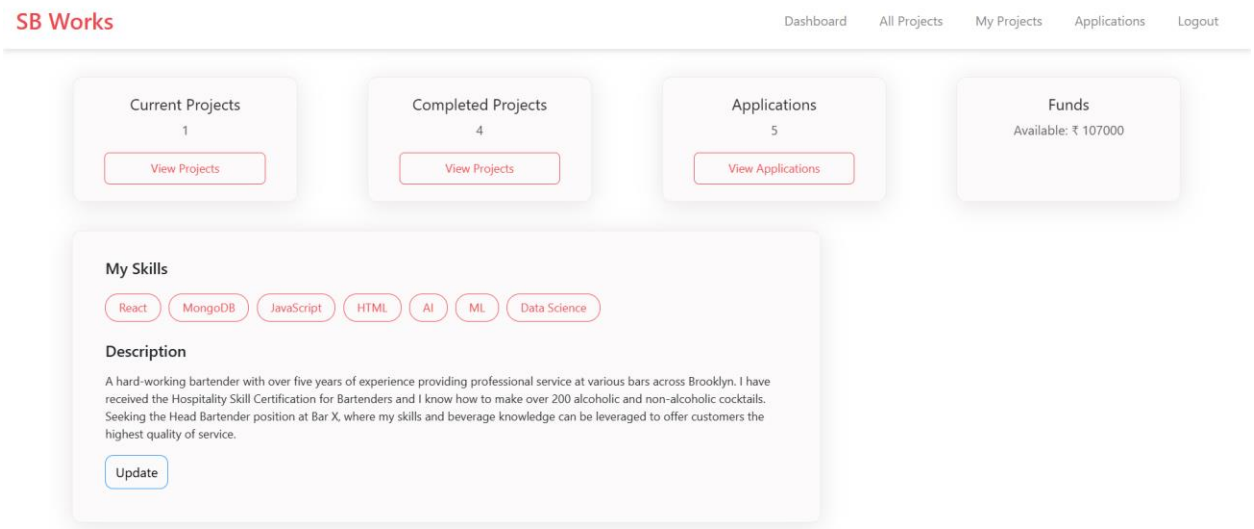
- **Unit Testing:** Core functions and utility logic were tested manually during development.
- **Integration Testing:** Chat integration with socket.io was tested for real-time communication between client and freelancer. Project submission and approval workflows were validated from both ends.
- **End-to-End Testing:** Complete workflows were tested including: Project posting → Proposal submission → Approval → Submission → Final approval. Chat and socket connections between users.
- **UI/UX Testing:** Manual testing was done across devices (desktop + mobile) to ensure responsive layout and smooth navigation.

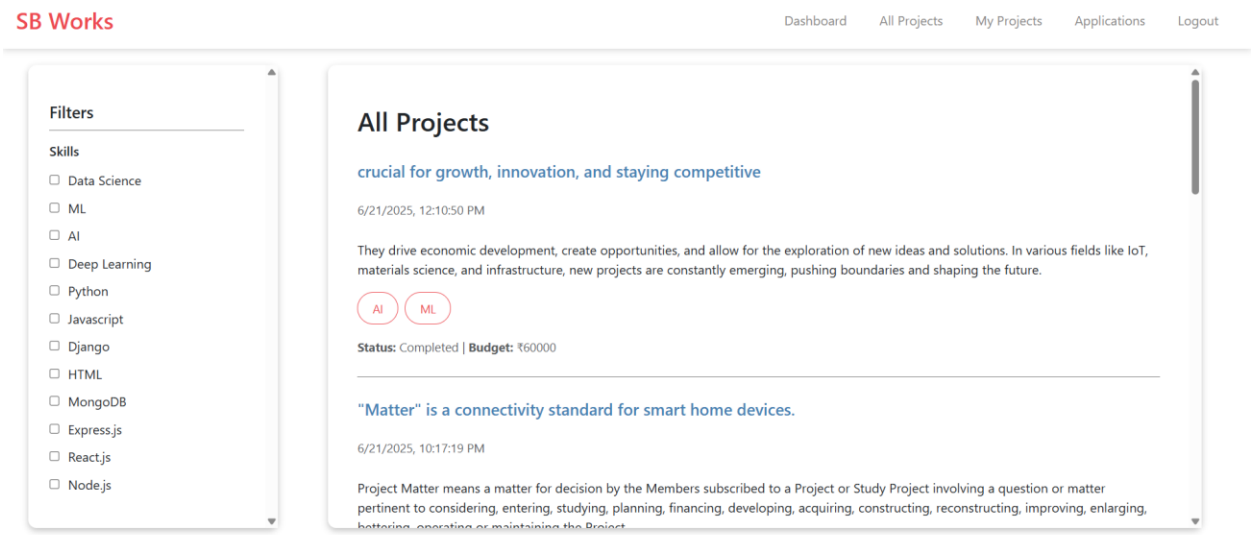
10. Screenshots / Demo

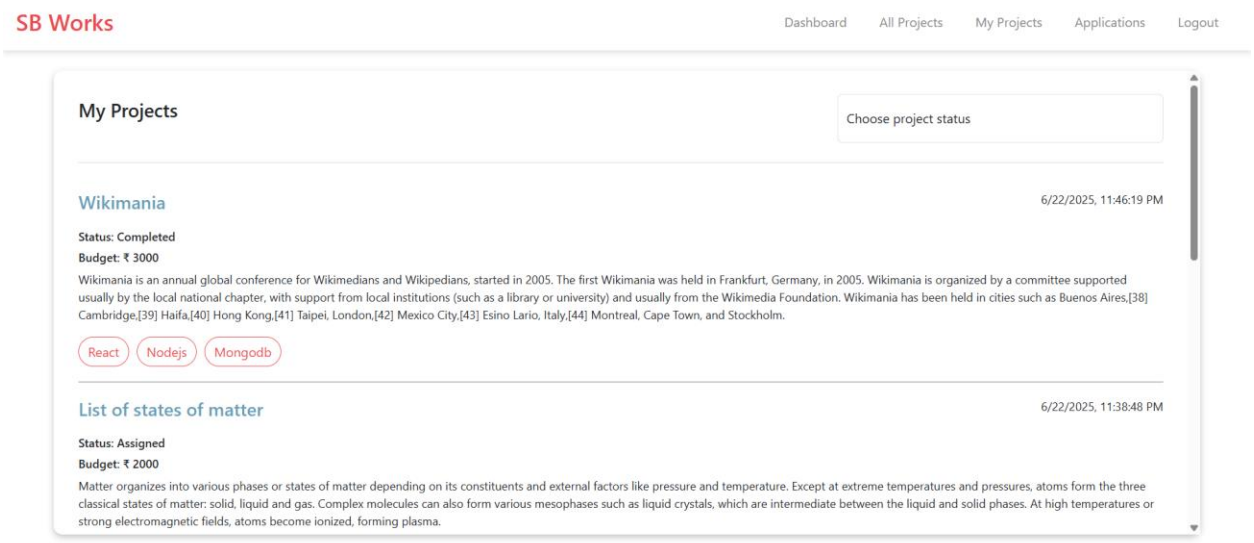


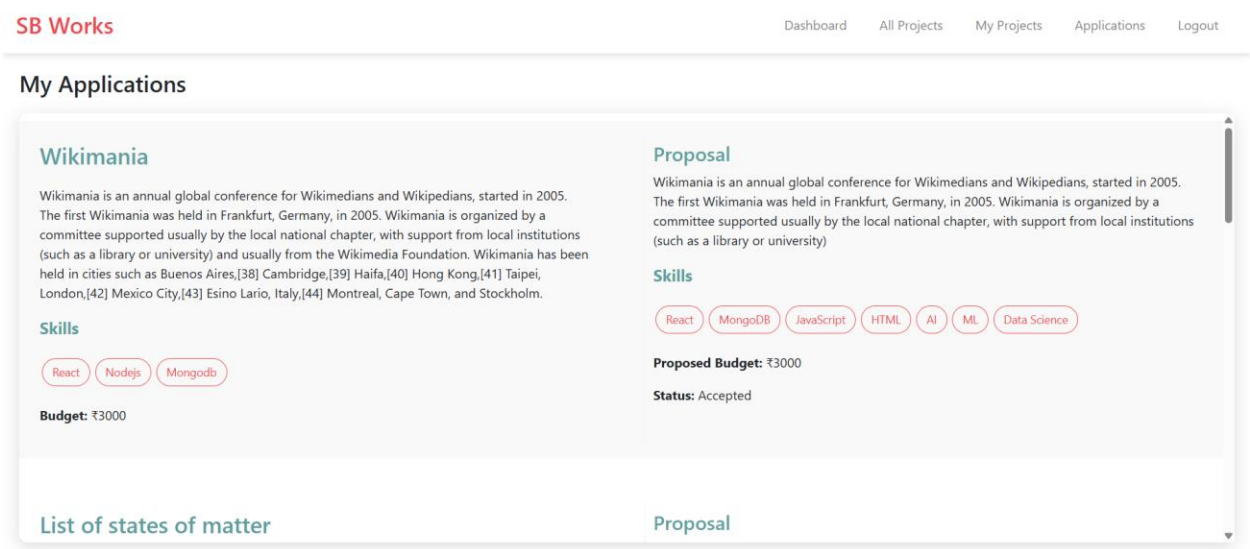



SB Works
Home
Register
Username
Email address
Password
Select user type
Sign up
Already registered? Login


SB Works
Dashboard
All Projects
My Projects
Applications
Logout
Current Projects
1
View Projects
Completed Projects
4
View Projects
Applications
5
View Applications
Funds
Available: ₹ 107000
My Skills
React
MongoDB
JavaScript
HTML
AI
ML
Data Science
Description
A hard-working bartender with over five years of experience providing professional service at various bars across Brooklyn. I have received the Hospitality Skill Certification for Bartenders and I know how to make over 200 alcoholic and non-alcoholic cocktails. Seeking the Head Bartender position at Bar X, where my skills and beverage knowledge can be leveraged to offer customers the highest quality of service.
Update


SB Works
Dashboard
All Projects
My Projects
Applications
Logout
Filters
Skills
Data Science
ML
AI
Deep Learning
Python
Javascript
Django
HTML
MongoDB
Express.js
React.js
Node.js
All Projects
crucial for growth, innovation, and staying competitive
6/21/2025, 12:10:50 PM
They drive economic development, create opportunities, and allow for the exploration of new ideas and solutions. In various fields like IoT, materials science, and infrastructure, new projects are constantly emerging, pushing boundaries and shaping the future.
AI
ML
Status: Completed | Budget: ₹60000
"Matter" is a connectivity standard for smart home devices.
6/21/2025, 10:17:19 PM
Project Matter means a matter for decision by the Members subscribed to a Project or Study Project involving a question or matter pertinent to considering, entering, studying, planning, financing, developing, acquiring, constructing, reconstructing, improving, enlarging,


SB Works
Dashboard
All Projects
My Projects
Applications
Logout
My Projects
Choose project status
Wikimania
6/22/2025, 11:46:19 PM
Status: Completed
Budget: ₹ 3000
Wikimania is an annual global conference for Wikimedians and Wikipedians, started in 2005. The first Wikimania was held in Frankfurt, Germany, in 2005. Wikimania is organized by a committee supported usually by the local national chapter, with support from local institutions (such as a library or university) and usually from the Wikimedia Foundation. Wikimania has been held in cities such as Buenos Aires,[38] Cambridge,[39] Haifa,[40] Hong Kong,[41] Taipei, London,[42] Mexico City,[43] Esino Lario, Italy,[44] Montreal, Cape Town, and Stockholm.
React
Nodejs
Mongodb
List of states of matter
6/22/2025, 11:38:48 PM
Status: Assigned
Budget: ₹ 2000
Matter organizes into various phases or states of matter depending on its constituents and external factors like pressure and temperature. Except at extreme temperatures and pressures, atoms form the three classical states of matter: solid, liquid and gas. Complex molecules can also form various mesophases such as liquid crystals, which are intermediate between the liquid and solid phases. At high temperatures or strong electromagnetic fields, atoms become ionized, forming plasma.


SB Works
Dashboard
All Projects
My Projects
Applications
Logout
My Applications
Wikimania
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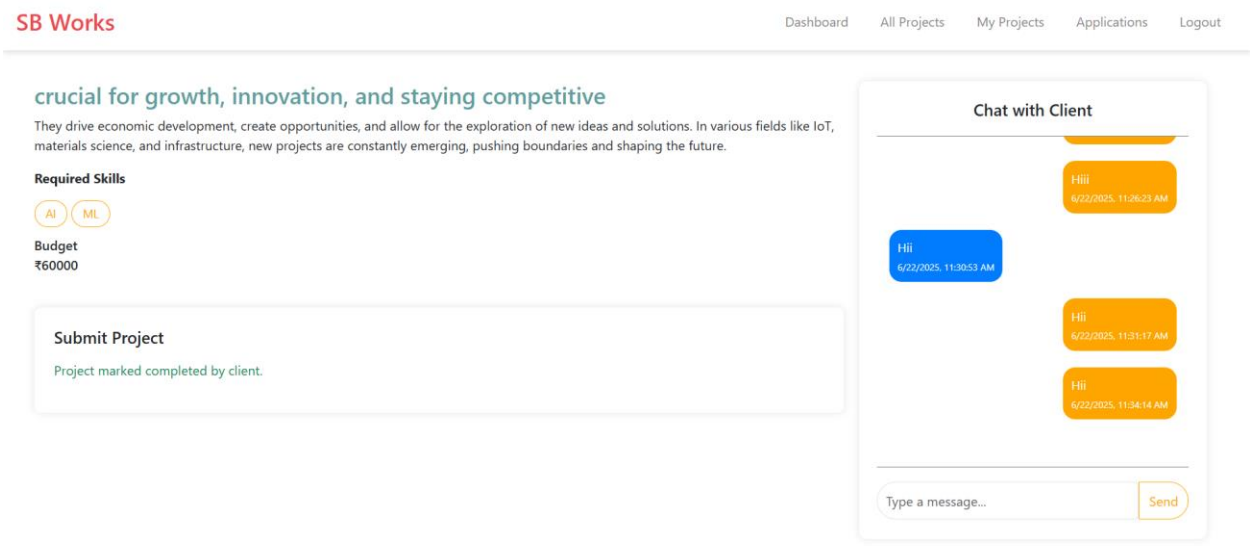
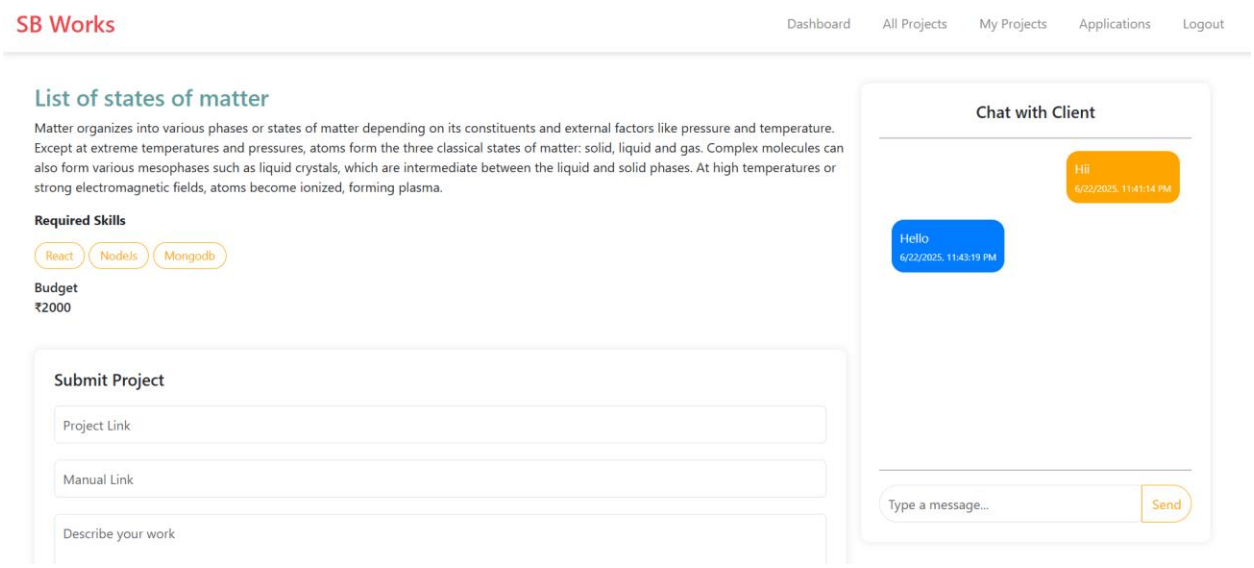
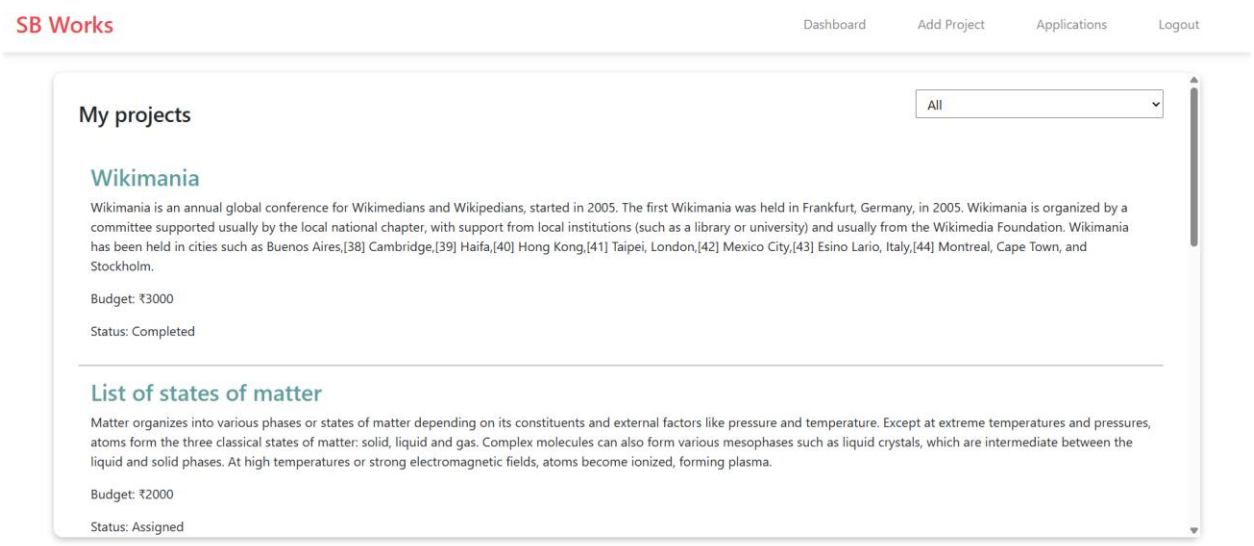
Skills
React
Nodejs
Mongodb
Budget: ₹3000
Proposal
Wikimania is an annual global conference for Wikimedians and Wikipedians, started in 2005. The first Wikimania was held in Frankfurt, Germany, in 2005. Wikimania is organized by a committee supported usually by the local national chapter, with support from local institutions (such as a library or university)
Skills
React
MongoDB
JavaScript
HTML
AI
ML
Data Science
Proposed Budget: ₹3000
Status: Accepted
List of states of matter
Proposal


SB Works
Dashboard
All Projects
My Projects
Applications
Logout
crucial for growth, innovation, and staying competitive
They drive economic development, create opportunities, and allow for the exploration of new ideas and solutions. In various fields like IoT, materials science, and infrastructure, new projects are constantly emerging, pushing boundaries and shaping the future.
Required Skills
AI
ML
Budget
₹60000
Submit Project
Project marked completed by client.
Chat with Client
Hiii
6/22/2025, 11:26:23 AM
Hii
6/22/2025, 11:30:53 AM
Hii
6/22/2025, 11:31:17 AM
Hii
6/22/2025, 11:34:14 AM
Type a message...
Send


SB Works
Dashboard
All Projects
My Projects
Applications
Logout
List of states of matter
Matter organizes into various phases or states of matter depending on its constituents and external factors like pressure and temperature. Except at extreme temperatures and pressures, atoms form the three classical states of matter: solid, liquid and gas. Complex molecules can also form various mesophases such as liquid crystals, which are intermediate between the liquid and solid phases. At high temperatures or strong electromagnetic fields, atoms become ionized, forming plasma.
Required Skills
React
NodeJs
Mongodb
Budget
₹2000
Submit Project
Project Link
Manual Link
Describe your work
Chat with Client
Hii
6/22/2025, 11:41:14 PM
Hello
6/22/2025, 11:43:19 PM
Type a message...
Send


SB Works
Dashboard
Add Project
Applications
Logout
My projects
All
Wikimania
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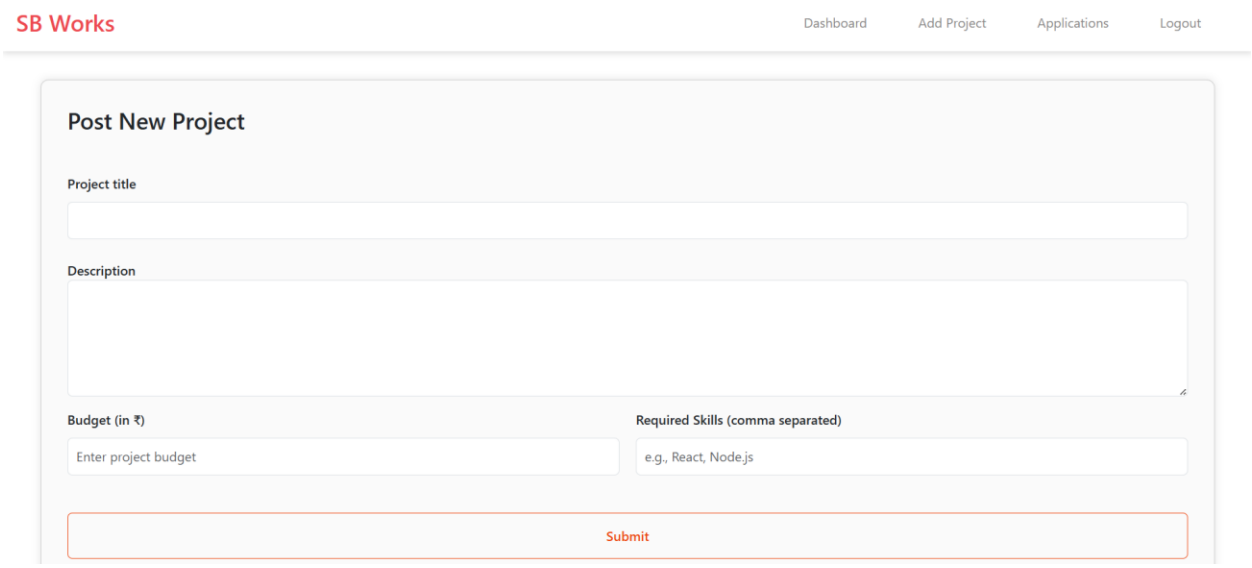
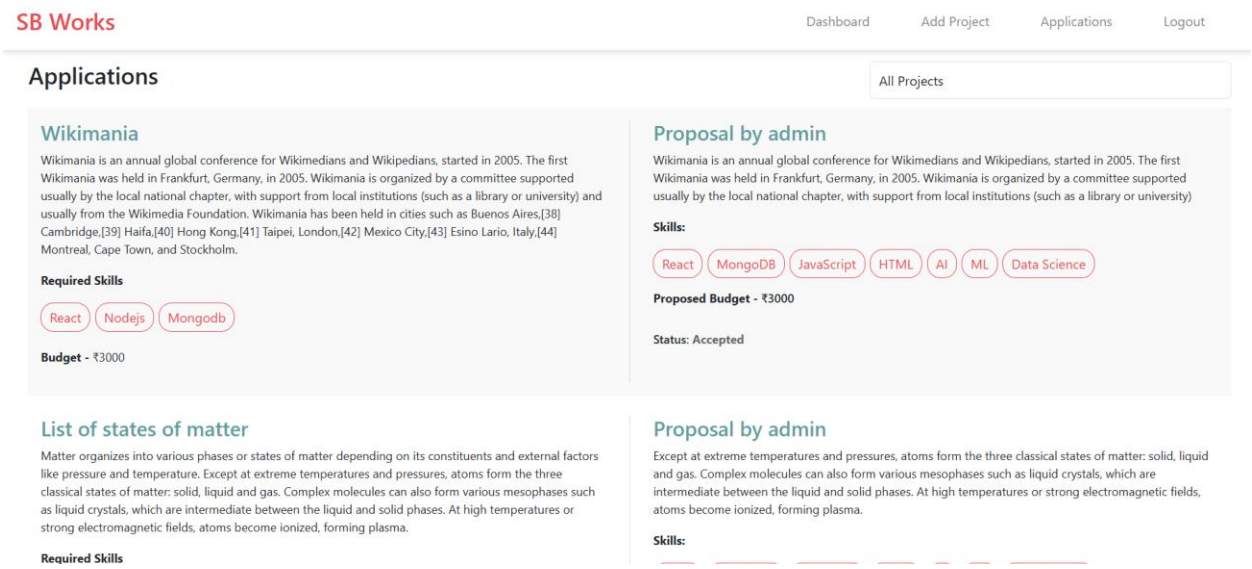
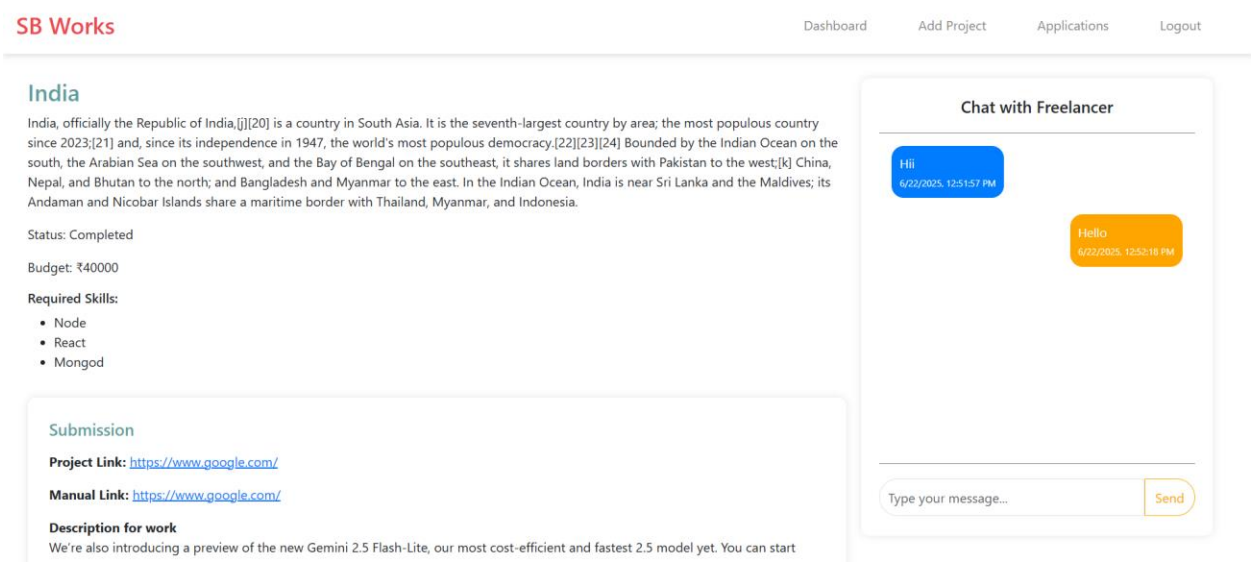
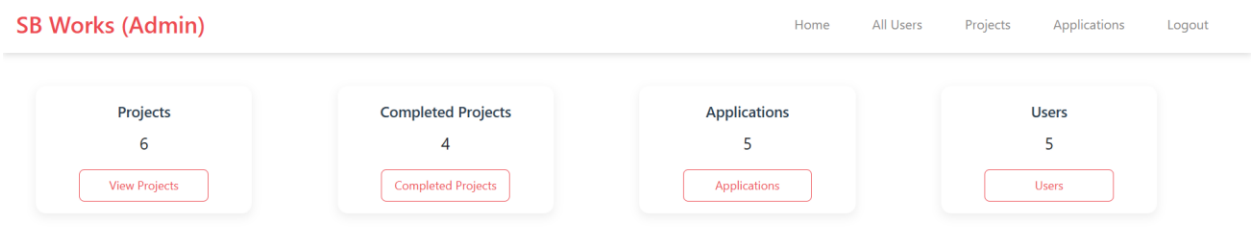
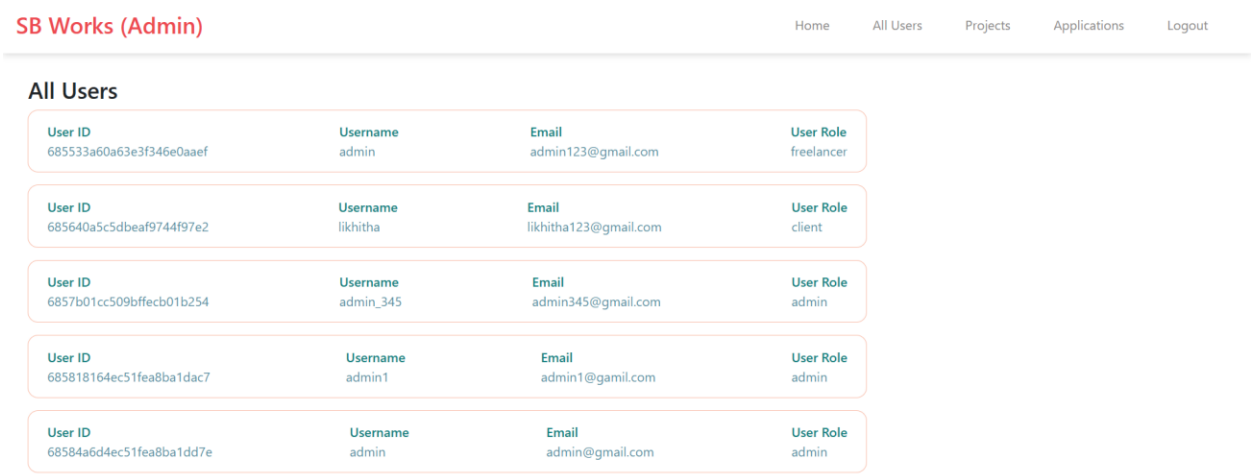
Budget: ₹3000
Status: Completed
List of states of matter
Matter organizes into various phases or states of matter depending on its constituents and external factors like pressure and temperature. Except at extreme temperatures and pressures, atoms form the three classical states of matter: solid, liquid and gas. Complex molecules can also form various mesophases such as liquid crystals, which are intermediate between the liquid and solid phases. At high temperatures or strong electromagnetic fields, atoms become ionized, forming plasma.
Budget: ₹2000
Status: Assigned

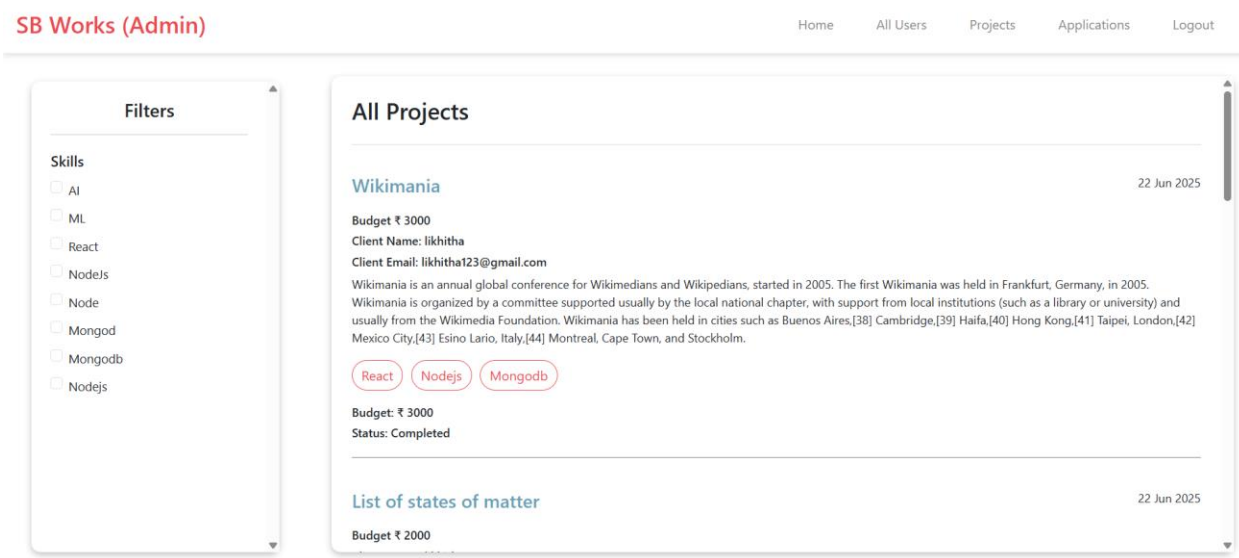

SB Works
Dashboard
Add Project
Applications
Logout
Post New Project
Project title
Description
Budget (in ₹)
Enter project budget
Required Skills (comma separated)
e.g., React, Node.js
Submit


SB Works
Dashboard
Add Project
Applications
Logout
Applications
All Projects
Wikimania
Wikimania is an annual global conference for Wikimedians and Wikipedians, started in 2005. The first Wikimania was held in Frankfurt, Germany, in 2005. Wikimania is organized by a committee supported usually by the local national chapter, with support from local institutions (such as a library or university) and usually from the Wikimedia Foundation. Wikimania has been held in cities such as Buenos Aires,[38] Cambridge,[39] Haifa,[40] Hong Kong,[41] Taipei, London,[42] Mexico City,[43] Esino Lario, Italy,[44] Montreal, Cape Town, and Stockholm.
Required Skills
React
Nodejs
Mongodb
Budget - ₹3000
Proposal by admin
Wikimania is an annual global conference for Wikimedians and Wikipedians, started in 2005. The first Wikimania was held in Frankfurt, Germany, in 2005. Wikimania is organized by a committee supported usually by the local national chapter, with support from local institutions (such as a library or university)
Skills:
React
MongoDB
JavaScript
HTML
AI
ML
Data Science
Proposed Budget - ₹3000
Status: Accepted
List of states of matter
Matter organizes into various phases or states of matter depending on its constituents and external factors like pressure and temperature. Except at extreme temperatures and pressures, atoms form the three classical states of matter: solid, liquid and gas. Complex molecules can also form various mesophases such as liquid crystals, which are intermediate between the liquid and solid phases. At high temperatures or strong electromagnetic fields, atoms become ionized, forming plasma.
Required Skills
Proposal by admin
Except at extreme temperatures and pressures, atoms form the three classical states of matter: solid, liquid and gas. Complex molecules can also form various mesophases such as liquid crystals, which are intermediate between the liquid and solid phases. At high temperatures or strong electromagnetic fields, atoms become ionized, forming plasma.
Skills:


SB Works
Dashboard
Add Project
Applications
Logout
India
India, officially the Republic of India,[j][20] is a country in South Asia. It is the seventh-largest country by area; the most populous country since 2023;[21] and, since its independence in 1947, the world's most populous democracy.[22][23][24] Bounded by the Indian Ocean on the south, the Arabian Sea on the southwest, and the Bay of Bengal on the southeast, it shares land borders with Pakistan to the west;[k] China, Nepal, and Bhutan to the north; and Bangladesh and Myanmar to the east. In the Indian Ocean, India is near Sri Lanka and the Maldives; its Andaman and Nicobar Islands share a maritime border with Thailand, Myanmar, and Indonesia.
Status: Completed
Budget: ₹40000
Required Skills:
Node
React
Mongod
Submission
Project Link: https://www.google.com/
Manual Link: https://www.google.com/
Description for work
We're also introducing a preview of the new Gemini 2.5 Flash-Lite, our most cost-efficient and fastest 2.5 model yet. You can start
Chat with Freelancer
Hii
6/22/2025, 12:51:57 PM
Hello
6/22/2025, 12:52:18 PM
Type your message...
Send


SB Works (Admin)
Home
All Users
Projects
Applications
Logout
Projects
6
View Projects
Completed Projects
4
Completed Projects
Applications
5
Applications
Users
5
Users


SB Works (Admin)
Home
All Users
Projects
Applications
Logout
All Users
User ID
685533a60a63e3f346e0aaef
Username
admin
Email
admin123@gmail.com
User Role
freelancer
User ID
685640a5c5dbeaf9744f97e2
Username
likhitha
Email
likhitha123@gmail.com
User Role
client
User ID
6857b01cc509bffecb01b254
Username
admin_345
Email
admin345@gmail.com
User Role
admin
User ID
685818164ec51fea8ba1dac7
Username
admin1
Email
admin1@gamil.com
User Role
admin
User ID
68584a6d4ec51fea8ba1dd7e
Username
admin
Email
admin@gmail.com
User Role
admin


SB Works (Admin)
Home
All Users
Projects
Applications
Logout
Filters
Skills
AI
ML
React
NodeJs
Node
Mongod
Mongodb
Nodejs
All Projects
Wikimania
22 Jun 2025
Budget ₹ 3000
Client Name: likhitha
Client Email: likhitha123@gmail.com
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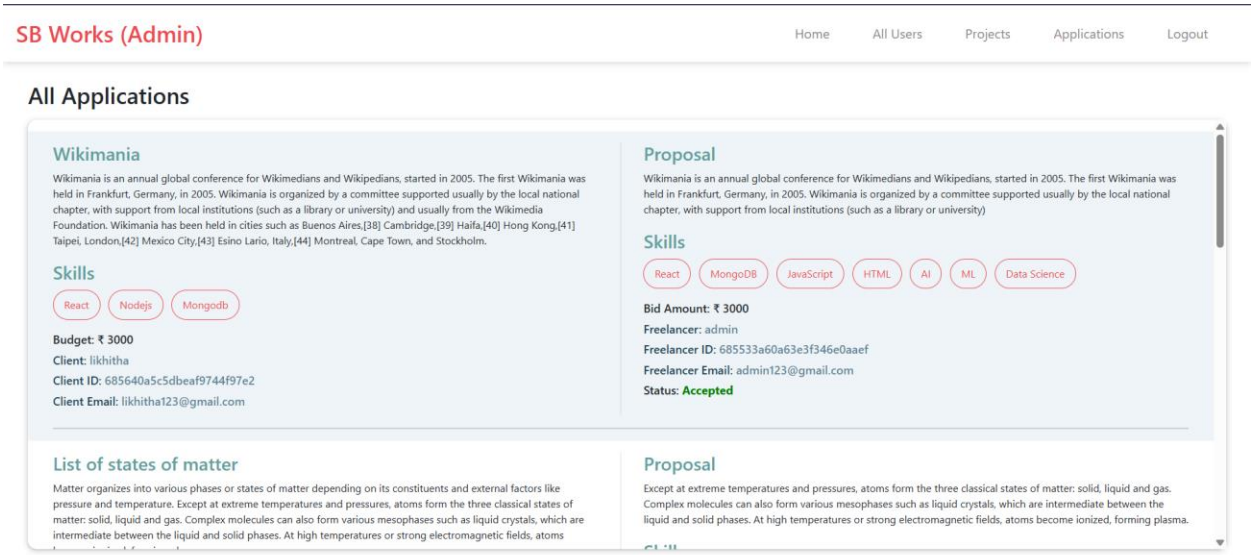
React
Nodejs
Mongodb
Budget: ₹ 3000
Status: Completed
List of states of matter
22 Jun 2025
Budget ₹ 2000



11. Known Issues

- **Real-Time Chat Delay**

Description: The real-time chat feature, powered by Socket.IO, sometimes experiences a slight delay in message delivery between the sender and recipient. This is especially noticeable in low-speed internet environments or during backend restarts. Although messages are eventually delivered, the delay can impact the user experience, particularly for time-sensitive communication.

- **Missing Validation in Proposal Forms**

Description: Currently, the input forms for submitting proposals lack strong validation. For instance, users can submit empty fields or invalid numeric inputs like zero or negative bid amounts. This could result in incomplete or incorrect data being stored in the database, which may confuse the client reviewing the proposals.

- **No File Upload for Project Manual**

Description: The project manual submission feature expects a URL input instead of supporting direct file uploads. Freelancers must first upload the manual to an external service (like Google Drive or Dropbox) and then paste the link. While this workaround is functional, it lacks convenience and may affect the professional experience of users.

- **Lack of Role-Based Access Protection on Frontend**

Description: Although the backend distinguishes between client and freelancer roles, the frontend currently lacks robust role-based access control. This means that users can potentially access

unauthorized pages (e.g., a freelancer opening an admin panel) simply by modifying the URL. This is a security gap and should be addressed with route guards and user-role checks.

- **UI Not Fully Optimized for Small Devices**

Description: Several user interface components, such as the chat interface, proposal forms, and project detail layouts, are not fully responsive on mobile or smaller screen sizes. This results in layout breaking, overflow issues, or content misalignment, which can degrade usability on phones and tablets.

12. Future Enhancements

- File Upload for Submissions Add support for freelancers to directly upload project files (e.g., ZIP files, PDFs) instead of sharing external links. This would improve usability and make the platform more professional.
- Advanced Search and Filters Implement advanced search options and filters on the project listing pages. Users could filter by skills, budget range, status, and posted date to easily find relevant projects or freelancers.
- Role-Based Dashboard Access Improve route protection by enforcing role-based authentication in the frontend. This would ensure that freelancers, clients, and admins can only access permitted sections.
- In-App Notifications Add real-time notification support to inform users about project updates, proposal responses, submission approvals/rejections, or new messages.
- Project Deadline & Tracking Allow clients to define deadlines and freelancers to update progress. This could be visualized using a simple timeline or progress bar.
- Rating & Review System Let clients rate and review freelancers after project completion. This helps build credibility and assists other clients in choosing the right freelancer.
- Admin Analytics Dashboard Extend the admin panel to include charts and metrics showing active users, posted projects, completion rates, most-used skills, etc., for better system monitoring.
- Mobile App Version Develop a mobile version of the platform for Android and iOS, enabling users to manage their freelance tasks and communication on the go.
- Freelancer Portfolio Page Provide freelancers with a public portfolio page where clients can view their skills, completed projects, ratings, and more.
- Payment Gateway Integration Add payment and escrow support, allowing clients to pay securely and freelancers to get paid only after project approval.