**Ideation Phase**

**Brainstorm & Idea Prioritization**

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| Date | 15 April 2025 |
| Team ID | SWTID1743870576 |
| Project Name | SpendSmart: Your Personal Finance Companion |
| Maximum Marks | 4 Marks |

**Brainstorm & Idea Prioritization :**

The ideation phase lays the foundation for the success of the SpendSmart: Your Personal Finance Companion project. It involves gathering the right team, identifying a real-world problem to solve, listing down ideas to address it, and prioritizing features to deliver a functional and user-friendly solution within a limited timeframe.

**Goal of the Project**

Create a Personal Expense Tracker (SpendSmart: Your Personal Finance Companion) using the MERN Stack (MongoDB, Express.js, React.js, Node.js) that allows users to:

* Register and securely log in to their account
* Add, edit, and delete income and expense entries
* Categorize transactions (e.g., Food, Travel, Rent)
* View financial summaries and visualizations (charts/graphs)
* Access a responsive dashboard on both desktop and mobile devices

**Step-1: Team Gathering, Collaboration and Select the Problem Statement**

**Objective:**

To bring together individuals with diverse skill sets, align on a shared vision, and finalize a real-world problem to address using the MERN stack.

**Actions Taken:**

**Team Formation**: A balanced team was formed consisting of frontend, backend, UI, and testing specialists—all passionate about solving real-life problems through web development.

**Skill Mapping**:

* Frontend: React.js, HTML/CSS
* Backend: Node.js, Express.js
* Database: MongoDB
* UI Design: Figma, CSS
* Testing: Postman, Chrome DevTools

**Collaboration Tools Used**:

* Communication: WhatsApp, Google Meet
* Project Planning: Trello, Google Docs

**Problem Identification:**

After several rounds of discussion and idea pitching, the team unanimously agreed on solving a common issue: the difficulty in tracking and managing personal finances in a simple, visual, and accessible way.

**1. Team Formation and Role Distribution**

The foundation of any successful project lies in assembling a well-balanced and dedicated team. For our project titled **SpendSmart: Your Personal Finance Companion**, we began by identifying team members with strong enthusiasm for web development, practical problem-solving, and interest in building a real-world application from scratch.

Our team comprises four committed members. Each member was assigned a specific role based on their individual skill set, domain knowledge, and preferences. This structured approach ensured a clear division of responsibilities, accountability, and efficient collaboration throughout the development lifecycle.

| **Team Member** | **Assigned Role** | **Key Responsibilities** |
| --- | --- | --- |
| Chirag Sharma | **Testing** | Designing and executing test cases, performance testing, bug reporting. |
| P Ramesh | **UI Design** | Creating wireframes, designing user interface, ensuring responsive and intuitive UI |
| Pragni | **Backend Developer** | Developing RESTful APIs, authentication, business logic, database integration. |
| Vaibhav | **Frontend Developer** | Building React components, integrating APIs, ensuring smooth user experience. |

We adopted a collaborative model that allowed flexibility and learning opportunities. Members often cross-collaborated across modules to support one another, strengthening teamwork and overall output.

**2. Collaboration Tools and Workflow**

To ensure seamless communication and progress tracking, especially in a hybrid working environment, we utilized a range of collaboration tools. These helped us stay aligned with project goals, deadlines, and updates:

**Git & GitHub**: For version control, collaborative code reviews, branching strategies, and pull requests.

**Google Meet / Whatsapp** : For regular virtual meetings, daily/weekly stand-ups, and technical discussions.

**Google Drive / Docs**: For storing and sharing important project-related documents, reports, and references.

We followed a simplified agile approach with iterative development and continuous integration. Weekly check-ins helped us identify blockers early, track progress, and maintain momentum.

**3. Brainstorming and Problem Selection**

Our initial goal was to identify a real-world problem that could be solved effectively using the MERN stack. We conducted several brainstorming sessions where each team member proposed different ideas from areas such as:

* Personal finance management
* Health tracking apps
* Online education platforms
* Task management tools
* Expense sharing for groups

After evaluating these ideas based on feasibility, scope, relevance, and innovation, we collectively agreed upon the **SpendSmart: Your Personal Finance Companion** as the most promising and impactful choice.

**4. Why We Chose This Problem**

The decision to work on a house rent application was driven by the following key factors:

**High Practical Relevance**: Many individuals struggle to keep track of their daily expenses and income, leading to poor budgeting and financial planning.

**Market Gap**: Existing solutions are often either too complex or lack customization for individual needs. Our platform aims to bridge this gap by offering a simple, user-friendly, and accessible solution.

**Technology Fit**: The problem is ideal for implementing CRUD operations, user authentication, RESTful API design, and MongoDB-based data management—perfectly aligning with the MERN stack.

**Scalability and Innovation Potential**: This system can be expanded in the future with features such as AI-based analytics, mobile app integration, and shared wallets.

**5. Final Problem Statement**

**"To design and develop a responsive, secure, and scalable web application using the MERN stack that enables users to record, categorize, and analyze their income and expenses, thereby simplifying personal finance management and promoting better budgeting habits."**

This problem not only allowed us to apply our technical knowledge in full-stack development but also inspired us to build something that could be expanded and deployed in a real-world setting.

**Step-2: Brainstorm, Idea Listing and Grouping**

Once the team was formed and the problem statement was finalized, the next crucial step in the project development process was to brainstorm different ideas related to the solution, list those ideas collaboratively, and group them into meaningful categories. This step helped us visualize the complete scope of the application, prioritize features, and streamline the development process.

**1. Purpose of the Brainstorming Session**

The goal of the brainstorming session was to:

* Understand what functionalities users would expect from a personal finance tracker.
* Identify all possible features that can enhance user experience and platform efficiency.
* Break down the problem into smaller manageable modules for better planning and development.
* Align everyone's vision regarding the project scope and deliverables.

**2. Brainstorming Methodology**

We conducted a series of brainstorming sessions over virtual meetings using tools like:

* **Miro** for real-time collaborative whiteboarding and mind mapping.
* **Google Docs** for live note-taking and idea capturing.
* **Trello** for organizing features into categories and prioritizing tasks.

Each team member contributed ideas based on:

* Personal experiences
* Existing popular finance apps (like Walnut, Money Manager,etc.)
* User expectations and pain points

We used a **Round-Robin format** where every team member was encouraged to present one or more ideas at a time. No idea was considered irrelevant or dismissed immediately — everything was listed for review.

**3. Idea Listing**

Below is the comprehensive list of ideas/features that emerged during the brainstorming phase:

**Core Features:**

* User registration and login
* Secure authentication (JWT)
* Add, edit, delete income and expense entries
* Categorization of transactions (Food, Travel, Rent, etc.)
* Dashboard with financial summary
* Data visualization (pie/bar charts)
* Responsive design for desktop and mobile

**Extended Features:**

* Profile management
* Export data as CSV/PDF
* Notifications/reminders to log expenses
* Dark mode

**Future Enhancement Ideas:**

* AI-based budget suggestions
* Bank account integration
* Shared wallets for families/groups
* Mobile app version

**4. Grouping of Ideas**

After listing all possible ideas, we organized them into logical **feature groups** for better clarity and to ease project execution. This step was critical for defining the Minimum Viable Product (MVP) and planning development sprints.

| **Category** | **Features Grouped** |
| --- | --- |
| **User Management** | Registration, Login, Logout, Profile Management |
| **Transaction Module** | Add/Edit/Delete Transactions, Categorization, Dashboard |
| **Visualization** | Charts, Graphs, Financial Summaries |
| **Security** | JWT Authentication, Secure Data Storage |
| **Advanced Features** | Export Data, Notifications, AI Suggestions, Shared Wallets (Future) |

**5. Key Takeaways from This Phase**

* We successfully transformed a broad problem statement into well-defined, actionable modules.
* Prioritized core functionalities that are essential for launch, and documented advanced features for future expansion.
* Ensured everyone in the team had a shared understanding of what needs to be built and how we'll divide it across upcoming development phases.
* Established the foundation for Requirement Analysis, System Architecture Design, and Sprint Planning in the next phases.

**Step-3: Idea Prioritization**

After brainstorming and organizing a comprehensive list of ideas and features in Step 2, the next logical step in our development process was prioritizing these ideas. This stage was essential to identify which features to develop first (Minimum Viable Product - MVP), which ones to add later (Post-MVP or V2), and which ones to consider as long-term enhancements or stretch goals.

* Effective idea prioritization ensured that:
* The project remained manageable within the given timeline and resources.
* Core user needs were addressed from the start.
* The development process followed a clear, goal-driven roadmap.

**1. Prioritization Approach**

To determine what features should be prioritized for development, we adopted a combination of two popular techniques:

**a. MoSCoW Method**

We classified each idea into four categories:

**Must Have** – Critical features required for the app to function.

**Should Have** – Important features that enhance user experience but are not critical for MVP.

**Could Have** – Nice-to-have features that can be added if time/resources allow.

**Won’t Have (for now)** – Features we decided to postpone or not include in this version.

**b. Value vs. Effort Matrix**

Each feature was analyzed based on:

**Value** to the end-users (usability, necessity, impact)

**Effort** required to implement (time, complexity, team skill)

This allowed us to balance our work between quick wins, high-impact features, and manageable complexities.

**2. Prioritized Feature List (with Justifications)**

| **Feature** | **Priority** | **Justification** |
| --- | --- | --- |
| User Registration and Login | Must Have | Essential for access control and personalized data |
| JWT Authentication | Must Have | Secures APIs and protects user data |
| Add/Edit/Delete Transactions | Must Have | Core CRUD functionality for expense tracking |
| Categorization of Transactions | Must Have | Enables better analysis and reporting |
| Dashboard & Visualization | Must Have | Provides users with financial insights |
| Profile Management | Should Have | Enhances user experience and personalization |
| Export Data | Could Have | Useful for record-keeping, not critical for MVP |
| Notifications/Reminders | Could Have | Improves user engagement, can be added later |
| AI Suggestions | Won’t Have | Out of scope for MVP, planned for future |
| Shared Wallets | Won’t Have | Advanced feature, planned for future |

**3. Final MVP Feature Set**

Based on the prioritization, the following features were **locked in as MVP (Minimum Viable Product)**:

* User Registration & Login
* JWT Authentication
* Add/Edit/Delete Transactions
* Categorization of Transactions
* Dashboard with Financial Summary
* Data Visualization (Charts/Graphs)
* Responsive Design

This MVP would allow us to deliver a fully functional product that solves the primary pain points of individual users.

**4. Post-MVP Planning**

We also created a **Phase 2 backlog** to record "Should Have" and "Could Have" features, which could be implemented after the initial launch if time permits. This list was added to Trello for tracking and sprint planning purposes.

These features include:

* Profile Management
* Export Data
* Notifications/Reminders
* AI Suggestions
* Shared Wallets

**5. Outcome of the Prioritization Phase**

* We defined a clear roadmap that separates core from auxiliary features.
* The team could now focus on the most impactful and feasible deliverables.
* Helped manage scope and timeline, avoiding overengineering or feature creep.
* Set the stage for requirement analysis, UI wireframing, and architecture design.