



IT314 - SOFTWARE ENGINEERING PROJECT 25-26

G28 Coinscious : Smart Expense Tracker

IN GUIDANCE OF

Prof. Saurabh Tiwari

MENTORED BY

Sarthak Darji

Team Members & Roles

Role	Name	Enrollment No.	GitHub Profile
Team Lead, Full Stack Dev, DB Dev, Deployment & Tester	Tirth Kaushal Gandhi	202301413	Tirthgandhi05 / TirthGandhi18
Backend Dev, DB Dev, AI Engineer & Tester	Karthik	202301407	karthikraman30 / karthik300106
Backend Dev, DB Dev & QA Engineer	Tanish Patel	202301411	Tanishkumar-Patel
Frontend Developer & Tester	Aum Patel	202301448	aum9049
Frontend Developer & Tester	Darshit Ramani	202301404	ramani3311
Frontend Developer & Tester	Kirtan Chauhan	202301409	KirtanChauhan-47
UI/UX Designer, Backend Dev & Tester	Ashka Pathak	202301270	AshkaPathak
Frontend, Backend Dev & QA Tester	Ruchir Joshi	202301410	Ruchir966
Frontend Developer & Documentation	Pratik	202301435	Pratik1435
Backend Developer	Rujal	202301277	Rujal-Jiyani-78

Task Distribution

◆ Project Management & Planning

- Sprint Formulation & Planning: Tirth K Gandhi, Tanish, Darshit
- Epic Formulation: Ashka, Ruchir, Darshit

- Elicitation Techniques (Brainstorming & Docs): Tanish, Tirth K Gandhi, Ashka
- Meeting Minutes (MOMs): Ashka, Aum
- Mid-Evaluation Documentation: Pratik

◆ Research & Analysis

- Gathering User Stories: Ashka, Kirtan, Ruchir, Pratik
- Identifying FRs and NFRs: Tirth K Gandhi, Kirtan, Ruchir, Karthik, Tanish
- Survey Form Creation: Aum, Tirth K Gandhi
- Target Audience Interviews: Kirtan, Ruchir, Rujal
- Contextual Analysis: Tanish, Kirtan
- Research on OCR & Text-to-Speech Models: Karthik
- Survey Analysis: Rujal

◆ Design & Prototyping

- Concept Poster & Chart Work: Ashka
- Initial Submission Documentation: Rujal, Karthik
- Basic Frontend Website Prototype: Aum, Darshit, Ashka

◆ Development & Implementation (Early Phase)

- AI Categorization Model Prototype: Tirth K Gandhi, Karthik, Tanish
- Coding Landing & Login Pages: Aum, Darshit
- Readme File Documentation: Karthik

Detailed Technical Implementation & Feature Breakdown

1. System Architecture & Backend Infrastructure

- Database Engineering: (Tirth K Gandhi, Karthik, Tanish)
- Backend Initialization: (Karthik)
- MVC Architecture Update: (Tirth K Gandhi)
- Data Performance: Added indexing and better data access methods to Supabase to speed up the app. (Tirth K Gandhi)

2. Authentication & User Management

- Auth System Setup: (Tirth K Gandhi, Karthik, Tanish)
- Frontend Auth Integration: (Tanish)
- Account Recovery & Verification:
 - "Forgot Password" feature (Rujal, Tirth K Gandhi)
 - Added verification for user registration and secure account deletion. (Rujal, Ruchir)

3. Frontend Architecture & Development

- UI/UX Implementation: (Darshit, Aum, Pratik, Ruchir, Kirtan)
- Routing, Navigation & Auth Management: (Pratik, Ruchir, Kirtan)

4. Artificial Intelligence & Advanced Modules

- AI Categorization Engine:
 - Built the first version of the AI model and logic. (Tirth K Gandhi, Karthik)

- Connected the categorization logic to Supabase and the frontend, allowing the AI to learn from individual user habits. (Tirth K Gandhi)
- Receipt Scanning System:
 - Built the prototype for the OCR/Vision model. (Karthik)
 - Created the API endpoint, handled image processing, and built the drag-and-drop scanning UI. (Tirth K Gandhi)
- AI Financial Advisor:
 - Designed the chat interface for the AI Assistant. (Kirtan)
 - Built the full-stack Chatbot feature, including the backend logic and prompt engineering. (Karthik, Tirth K Gandhi)

5. Core Application Features

- UI/UX Implementation: (Darshit, Aum, Pratik, Ruchir)
- Personal Expense Module: Created the full Create, Read, Update, Delete (CRUD) flow for personal expenses and connected the backend to the UI. (Tirth K Gandhi, Ashka)
- Group Expense Management: (Tanish, Karthik)
- Dashboard Analytics:
 - Built the backend endpoint to send data for visualization. (Tanish, Ashka)
 - Created frontend charts for Total Expense, Group analytics, Budget Management, and Goals. (Tirth K Gandhi, Tanish)
 - Built the Budget feature frontend and Monthly Analytics graphs. (Kirtan)
- Profile & Settings:
 - Connected the backend for profile management and secure avatar image uploads. (Tirth K Gandhi)
 - Built the Application Settings page and Data Export feature. (Darshit, Tirth K Gandhi)

6. Utilities & Enhancements

- Notifications System: (Tanish, Kirtan)
- Expense Calendar: (Darshit, Aum, Rujal)
- Recurring Expenses: (Kirtan, Ruchir)
- Support & Landing Pages: (Aum, Pratik)

7. Quality Assurance, Testing & Deployment

- Non-Functional Testing: Checked performance, volume handling, stress limits, and code readability. (Tirth K Gandhi)
- Reliability Testing: Tested the system's security, ease of use, and reliability. (Tanish)
- GUI & Visual Testing: Checked the interface for consistency and responsiveness across devices. (Ashka)
- Unit & Mutation Testing: Tested individual components to ensure the logic holds up under changes. (Karthik, Darshit, Rujal)
- System Testing: Tested the complete application flow from start to finish. (Kirtan, Ruchir)
- Deployment: Managed the final deployment of the full-stack application to the production server. (Tirth K Gandhi)

8. Final Documentation & Wrap-Up

- Sprint Formulation: (Darshit, Tanish, Karthik, Tirth K Gandhi)
- Graphical & Design Document Analysis: (Darshit, Aum, Kirtan, Ruchir)
- Working Prototype Recording: (Ashka, Rujal)
- PPT Formulation: (Aum, Pratik)