Clash-A-Thon 2026

The Friction We Forget

Building Solutions for Problems We've Stopped Noticing

Kick-off	Submission Deadline	Final Presentation
Feb 24, 2026 | 09:30 AM	Feb 26, 2026 | 4:00 PM	Feb 27, 2026 | On-site

TEAM & PROJECT INFORMATION

Team Name	HisabSathi
Project Title	BaadFaad
Project Category	Finance

TEAM MEMBERS

#	Full Name	Role / Responsibility	GitHub / Contact
1	Kushal Jamarkattel	Team Lead & Frontend	kushaljk11
2	Regan Karki	Business & QA	ReganKarki555
3	Rojesh THapa	Backend Developer	rojash03
4	Samana Upreti	UI/UX Designer	samanaUpreti
5	Ujwal Timsina	Database & Logic	Berith12

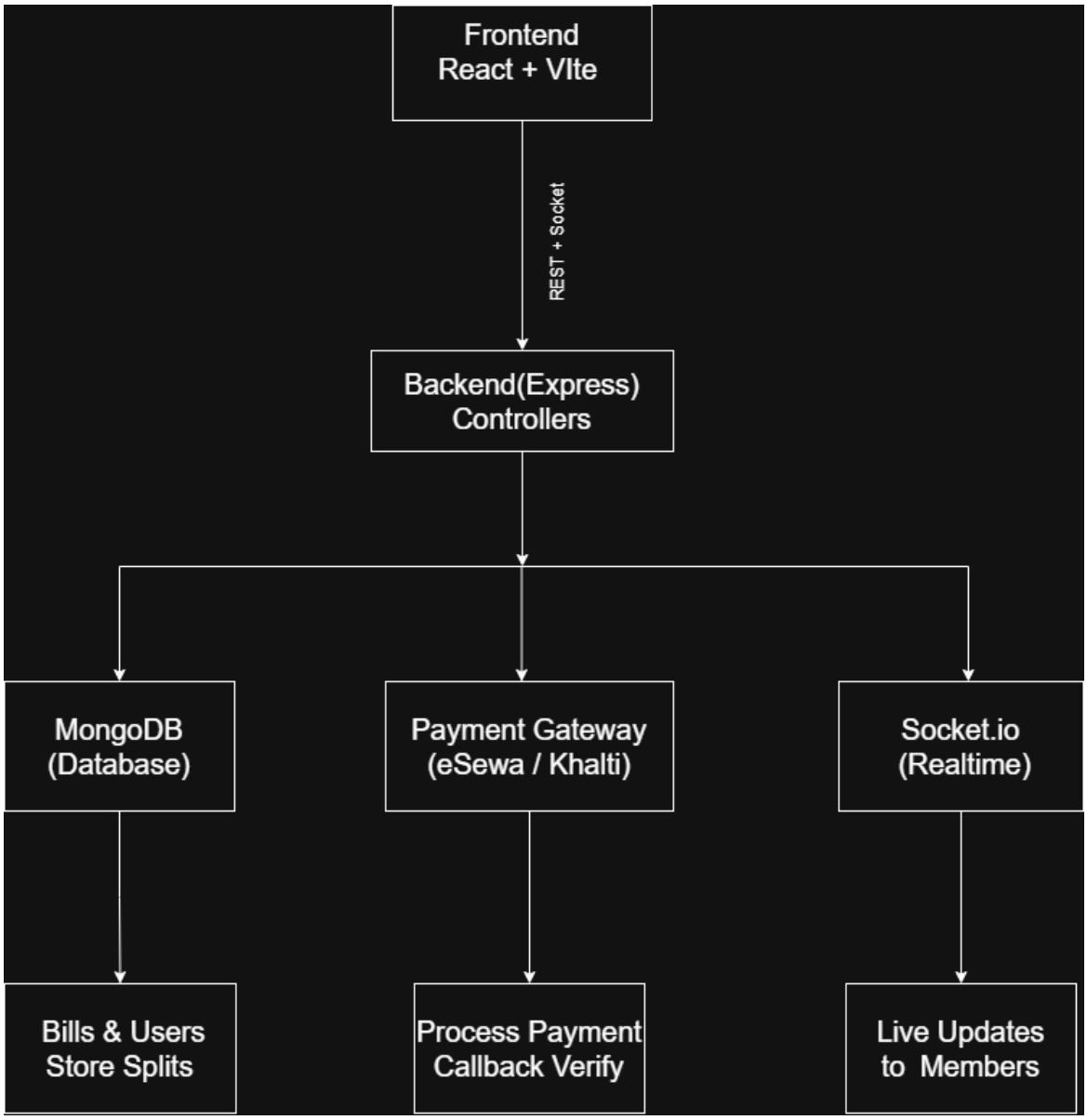
SUBMISSION LINKS

GitHub Repository	https://github.com/kushaljk11/ClassAThon-HisabSathi-BaadFaad
Deployment URL	https://baadfaad.vercel.app/
Tech Stack	MERN Stack

Declaration

We declare that this project is our original work developed during Clash-A-Thon 2026. All external resources and libraries have been appropriately credited. We understand that plagiarism or misrepresentation will result in disqualification.

1 System Architecture



BaadFaad architecture is implemented using the React and Vite as a frontend and communicates through the REST APIs and WebSockets to the centralized Node.js/Express back-end. This backend coordinates real-time data flow and bill and session information is stored in the MongoDB, instant settlements data are processed via eSewa and Khalti gateway, and live updates are sent to all participants through Socket.io.

2 Component Breakdown

User Interface Module: It is an interface specially made for mobile screen that operates by creating new sessions, bill items, selection of user's item.

Split Calculation Service: This service module receives assignment of items and also subtotals all the shares and share of service of each participant, tax/charge share.

OCR Processing Module: This module extracts out the payable amount(price) from the bill then converts it into structured data.

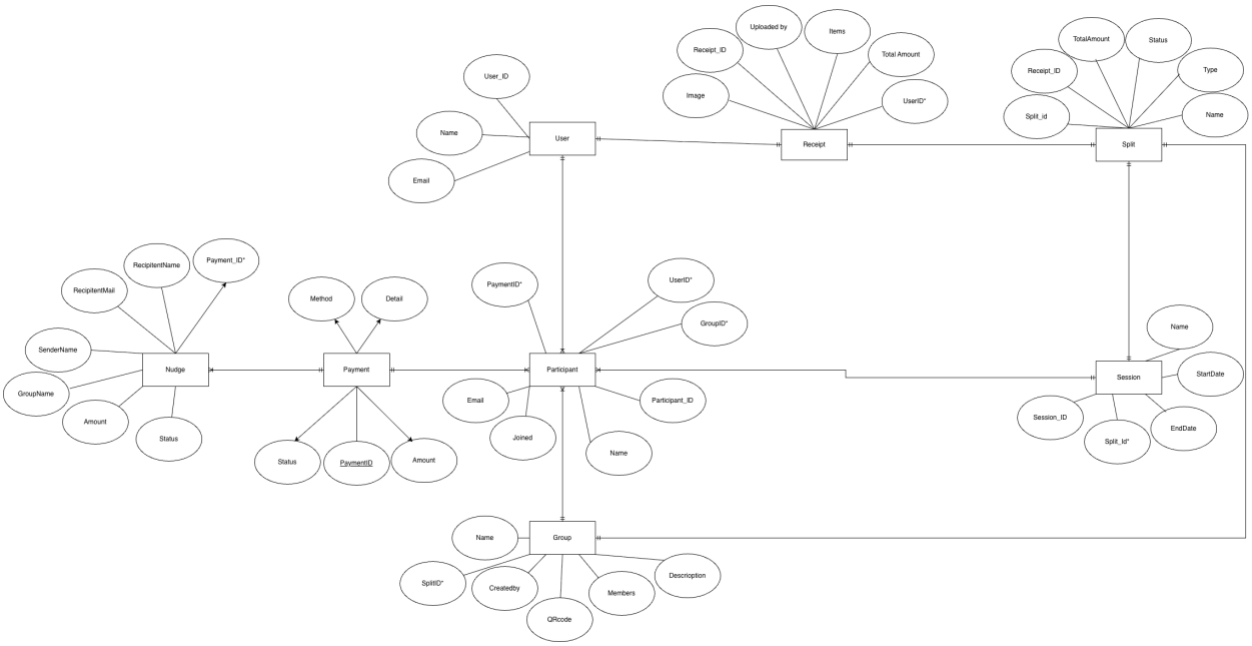
Session Management Module: This module works with generation of session ID and lists of participants and item assignment.

Payment Integration Module (eSewa/Khalti): This module includes direct payment system such as Khalti and eSewa which helps to settle bill directly from the app.

Database Module: This module is related to permanent storage of data regarding the records of session and past payments records and also verification before data storage.

Components Communication: The UI communicates with Backend through RESTful JSON APIs for real time calculations. At the same time, the OCR Module will input the data on the parsed bills into the frontend, whereas the Payment Module will be integrated with the external eSewa/Khalti APIs to change settlement statuses in the database.

3 Data Design



4 API/Interface Specifications

i. Session Endpoints

POST /session	Start a new bill splitting session and create an id of the session
GET /session/:id	Get session information such as participants, items, etc.

ii. Item Endpoint

POST /items	Addition of one or more items of the bill to a particular session
PUT /items/:itemId	Assign participants to respective selected item

iii. Split Calculation Endpoint

POST /split	Calculate each participants payable amount

iv. Payment Endpoint

POST /payment	Record payment status, amount paid, and payment method

5 Setup and Deployment

5.1 Local Setup Commands

Clone the repository: https://github.com/kushaljk11/ClassAThon-HisabSathi-BaadFaad.git

Install Dependencies: i. cd frontend/BaadFaad ii. npm install iii. npm run dev

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5.2 Deployment Process

i. **Frontend Deployment (Vercel):** React based PWA is linked to Vercel.

ii. Backend Deployment (Railway/Render): Node.js API is hosted on persistent cloud platform to handle split logic and database communication.

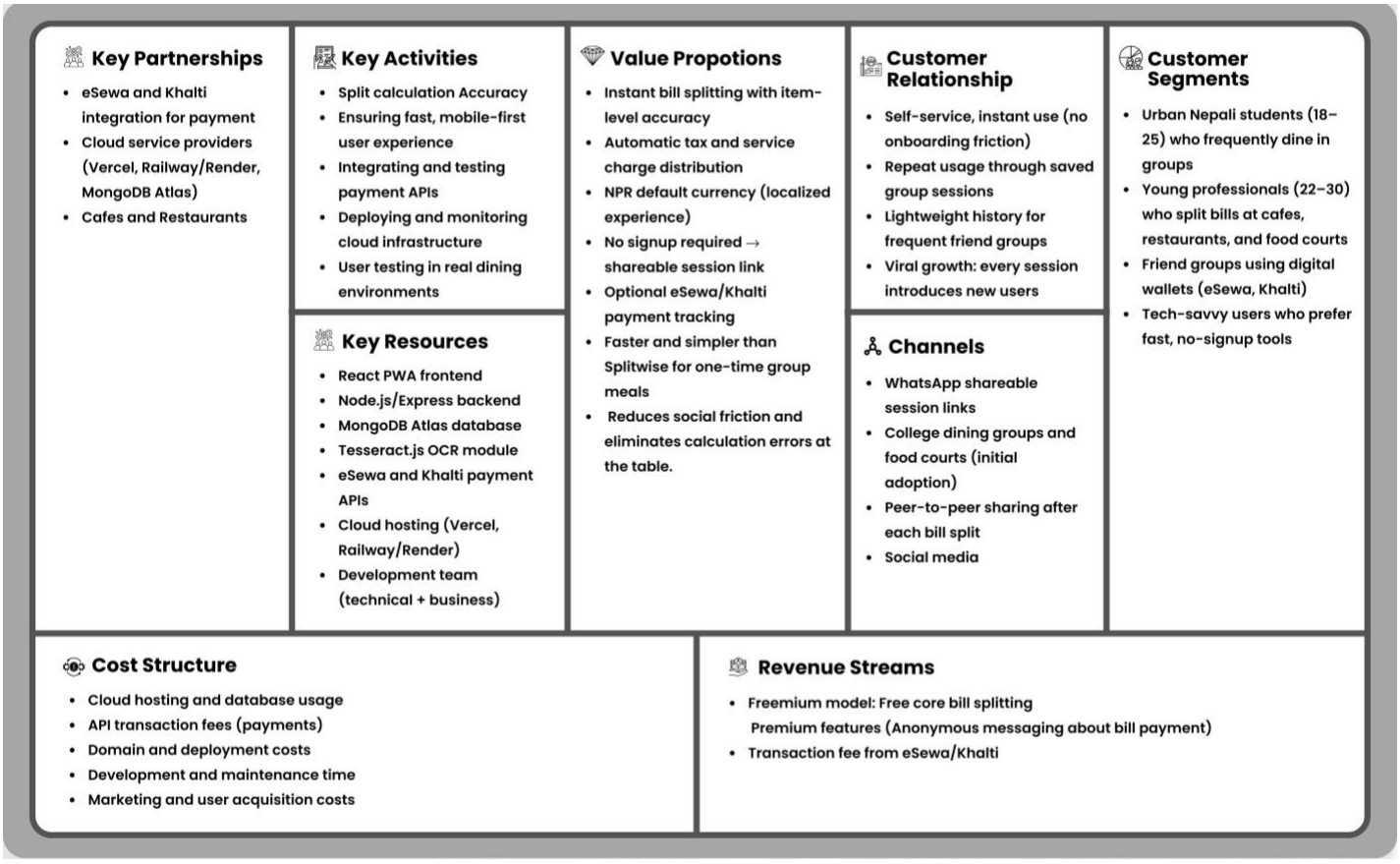
iii. Database Provisioning: MongoDB Atlas cluster is provisioned to offer cloud based layer of storage of session data.

iv. Environment Sync: Keys required are set up on the dashboard of deployment platform.

5.3 Required Environment Variables

MONGO_URI, PORT, GOOGLE_API_KEY, GOOGLE_CLIENT_ID, JWT_SECRET, GOOGLE_CLIENT_SECRET, GOOGLE_CALLBACK_URL, ESEWA_MERCHANT_ID, ESEWA_SECRET, ESEWA_PAYMENT_URL, ESEWA_PAYMENT_STATUS_CHECK_URL, KHALTI_PUBLIC_KEY, KHALTI_SECRET_KEY, KHALTI_PAYMENT_URL, HALTI_VERIFICATION_URL, GROQ_API_KEY, SUCCESS_URL, FAILURE_URL

6 Business Model Canvas



Business Model Canvas (BMC) is a one-page strategic model that represents the visualization of how BaadFaad generates and captures value through mapping nine business pillars that are important. It defines our core Customer Segments of urban Nepali students and young professionals as well as defines Revenue Streams of high-quality subscriptions and transaction commission. The BMC creates connections between all of our technical components, such as our OCR module and payment APIs, and high-impact Channels, such as WhatsApp so that all of our technical functionality can help us achieve our vision of national scalability.

7 Unique Selling Proposition

The main feature point that differentiates BaadFaad from the other big global companies is BaadFaad solving ongoing issues in terms of Nepal. The feature of without registration access using PWA architecture with support of Nepalese Currency and direct payment methods such as eSewa and Khalti allows users to go from a single bill into complete online environment within a second. It has anonymous reminders feature from which messages can be sent.

Comparison Table:

Feature	BaadFaad	Split wise	Trimount
Local Currency Support (NPR)	✓	X	X
Local Wallet Integration (eSewa/Khalti)	✓	X	X
OCR Billing Parsing for Nepal Receipts	✓	✓(Pro only)	X
No Registration PWA Access	✓	X	X
Proportional Tax/Service Charge Logic	✓	X	X

8 Market Analysis

i. Target Market: The main target market will be students of urban young working professionals, especially from age group 18 to 30 yrs old living in growing cities such as Itahari, Dharan, etc.

ii. Market Size: Approximately 50,000-70,000 students and young office workers across various popular cities and more than 200,000 from capital city alone go out to eat on regular basis.

iii. Competition

Competitor	Strengths	Weaknesses
Split wise	Globally established company	Does not support Nepali Currency
Trimount	management of group expenses	No OCR bill scanning
Manual Calculation	Zero cost	Can cause manual wrong calculation

iv. Market Opportunity: BaadFaad focuses on Nepal's online based payment system to decrease payment through cash that would be harder to manage than online transactions.

v. Go-to-Market Strategy: We will implement a hyper viral loop around multiple colleges and restaurants that involves printing and pasting QR codes around corners of the college that leads straight to the BaadFaad app.

9 Sustainability and Future Scope

BaadFaad is solid engineered system designed with diversified three-layer strategic revenue streams. The system is divided by two models where Freemium SaaS model is totally free to use while the Premium model is subscription-based model which requires NPR 199 every month to get access to premium features. The system has Khalti and eSewa payment integrated which charges around 0.5% to 1% per transaction. Another source of revenue would be promoting restaurants and cafes.

The first 6 months vision mainly focuses on dominating the local market among local cities such as Itahari, Dharan, Kathmandu and so on by putting QR code on the wall and table of the restaurant and cafe by partnering with the owners of top student favored restaurants and cafes. By organizing seminar programs in colleges, BaadFaad can be introduced to a greater number of students for increased revenue and number of users. These tactical moves help capture the base number of users upto 1,000 users with converting rate of 10% generating estimated revenue of NPR 29,000. Within 1 year, we focus on scaling upto national social fintech ecosystem by connecting with Point of Scale systems which allows flow of bill directly into the app through API. To reach the aim of 5,000 users and generating revenue of NPR 2,00,000, we will be partnering with top favored restaurants and cafes to reach the potential customers. Establishing and maintaining deep and profitable partnership with fintech providers, we will maintain good relationship with colleges and schools for promotion of our app by running different programs which would lead to surrogate marketing of BaadFaad eventually.