

FASTConnect — Project Overview and ERD Documentation

Project Summary

FASTConnect is an exclusive social networking platform designed specifically for FAST-NU students, societies, and faculty.

It combines the core functionalities of Instagram, Reddit, and LinkedIn, providing a unified space for student interaction, event promotion, content sharing, and professional networking.

The platform focuses on creating a verified, secure, and interactive environment within the university ecosystem.

Key Features

- **Verified Access:** Registration via FAST-NU email or roll number for authenticity.
 - **Multi-Role System:** Separate privileges for Students, Society Representatives, Faculty, and Admins.
 - **Dynamic Feed:** Users can post text, images, or videos, interact via comments and likes, and use hashtags for discoverability.
 - **Society Integration:** Each society has a dedicated page to post announcements, events, and manage members.
 - **Faculty Pages:** Verified faculty profiles act as informational pages where students can follow updates and participate in discussions.
 - **Event Management:** Allows societies and students to create, manage, and register for campus events.
 - **Reels Module:** Short video content creation and interaction system for creative campus engagement.
 - **Chat System:** One-to-one and group chat using WebSocket/Firebase integration for real-time messaging.
 - **Connection System:** Enables students to send connection requests, form verified professional relationships, and receive notifications.
 - **Notifications:** Instant updates for likes, comments, event invites, and connection requests.
 - **Admin Tools:** Reporting, flagging, and audit systems for content moderation and transparency.
 - **Role-Based Access Control:** Spring Security and JWT authentication for secure API access.
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Technology Stack

Layer	Technology
Frontend	Flutter (Dart) — Responsive UI, State Management (Provider/BLoC), REST API integration
Backend	Java Spring Boot — REST APIs, JPA, Role-based Authentication, Swagger API Docs
Database	PostgreSQL — 25 normalized entities (3NF design)
Storage	Cloudinary / Firebase for media uploads
Version Control	GitHub — Separate repositories for backend and frontend
API Documentation	Swagger UI via springdoc-openapi

Modules Overview

Module	Owner	Description	Core Entities
Authentication & User Management	Maaz	Handles registration, login, JWT generation, and role-based access.	User, Role, AuthToken, Profile
Societies Module	Maaz	CRUD for societies, verification workflow, and membership management.	Society, SocietyMembership
Faculty Pages Module	Maaz	Faculty act as verified pages with followers and posts.	FacultyPage, FacultyFollower
Feed & Post System	Partner	Post creation, comments, likes, and hashtags.	Post, Comment, Like, Hashtag
Reels Module	Partner	Short video uploads, likes, and comments for campus creators.	Reel, ReelLike, ReelComment
Events Module	Partner	Event creation, registration, and management.	Event, EventRegistration
Notifications Module	Partner	Alerts for interactions, events, and connection requests.	Notification
Chat Module	Partner	One-to-one and group messaging.	Conversation, Message
Admin Module	Maaz	Moderation, report handling, and action logging.	Report, AuditLog, Flag
Connection Module	Maaz	Handles user connection requests and confirmed relationships.	ConnectionRequest, Connection

Final ERD (v2.2 — 25 Entities)

The finalized schema contains **25 entities**, grouped by modules, maintaining complete referential integrity and normalization.

- **Authentication & User:** User, Role, AuthToken, Profile
- **Societies:** Society, SocietyMembership
- **Faculty:** FacultyPage, FacultyFollower
- **Feed:** Post, Comment, Like, Hashtag
- **Reels:** Reel, ReelLike, ReelComment
- **Events:** Event, EventRegistration
- **Notifications:** Notification
- **Chat:** Conversation, Message
- **Admin:** Report, AuditLog, Flag
- **Connections:** ConnectionRequest, Connection

This model supports:

- Secure authentication and profile management
- Comprehensive social interactions (posts, reels, chats)
- Verified academic and society presence
- Transparent moderation and scalable architecture

Key Highlights

- **25 fully normalized entities (3NF)** across 10 modules
- **Bi-directional relationships** for user connections and content interaction
- **Modular backend structure** enabling parallel development
- **Swagger-documented REST APIs** for easy Flutter integration
- **Practical scope** for 2 developers over an 8-week project timeline
- **Extensible design** — future modules (Marketplace, Internship Portal, AI-based recommendations) can be added easily

Conclusion

FASTConnect demonstrates a complete enterprise-scale architecture built with **Spring Boot + Flutter**. It combines authentication, communication, media sharing, and administrative control into a single,

cohesive system tailored for the FAST-NU community.

This project not only fulfills academic requirements but also carries startup-level scalability and professional portfolio value.