



Inspiring Excellence

CSE471: System Analysis and Design
Assignment on Functional Requirements
Proposed Project Title: Pokémon Battle Simulator

Group No: 01, CSE471 Lab Section: 09, Fall 2025	
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Tech Stack:

- Language: JavaScript
- Framework: Next.js
- Styling: TailwindCSS
- Database: Postgres
- ORM: Prisma
- Deployment: Vercel

Functional requirements:

Module 1

1. **[Nur]** Users can register accounts with a username, email, and password, and can log in/out. Users can reset forgotten passwords
2. **[Safkatur]** Users can edit profile info, including avatar and nickname, view battle history, ELO rating, and win/loss statistics
3. **[Mehedi]** Users receive notifications for match invites, friend requests, and battle results
4. **[Abrar]** Admins can ban users for misconduct

Module 2

1. **[Nur]** Users can build teams of up to 6 Pokémon and can save, edit, or delete teams
2. **[Safkatur]** Users can select Pokémon, moves, abilities, items, and natures from available data
3. **[Mehedi]** The system validates team legality (Banned Pokemon and Banned Moves). Also, the system prevents illegal move/item combinations
4. **[Abrar]** Admins can add and update available Pokémon, moves, items, and rulesets.

Module 3

1. **[Nur]** Users can engage in real-time battles (PvP). The battle follows turn-based Pokémon mechanics. The system updates HP, status, and battle state dynamically after each move
2. **[Safkatur]** The system enforces all game rules, such as weather, abilities, and item effects. Players can forfeit or disconnect; results are recorded accordingly
3. **[Mehedi]** The battle log is visible in real-time, showing moves, effects, and results. Players can chat during battles in a moderated chat area. The system warns players before inactivity timeouts
4. **[Abrar]** Players receive a battle summary and ELO adjustment after each match. The system maintains a leaderboard based on ELO scores. Admins can reset or update rankings for new seasons. Admins can monitor ongoing battles and terminate them if necessary