

Design and Development of a Secure Civic Engagement Platform for Community Problem Reporting and Volunteer Management

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ABSTRACT

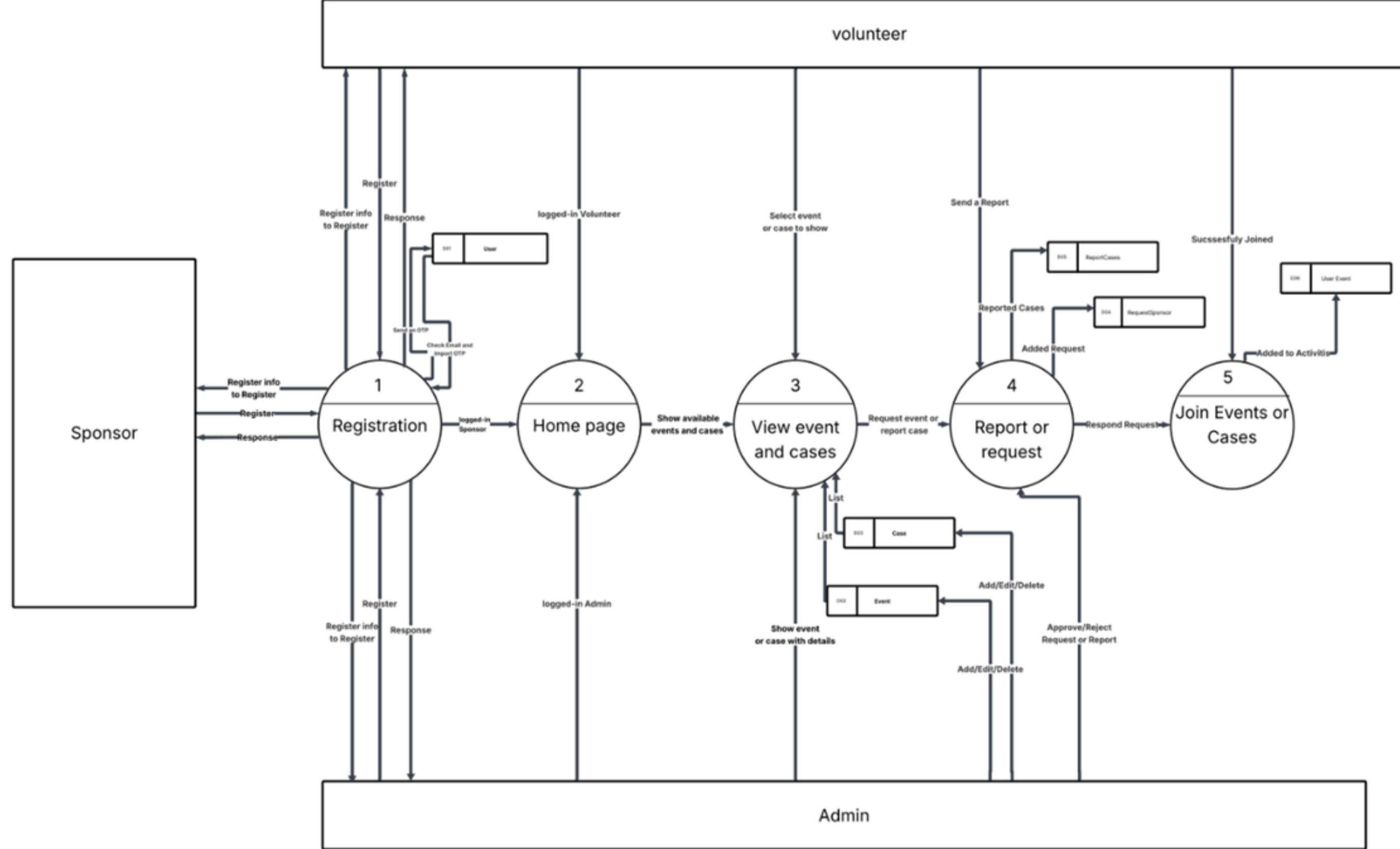
“We Are The Change” is a secure mobile civic engagement platform that lets citizens report local issues with photos and join community volunteering activities. It combines issue reporting, volunteer and sponsor workflows, and Firebase-based authentication to ensure reliable operation and data protection. Testing shows the system improves reporting efficiency and supports safer, more organized community participation.

OBJECTIVES

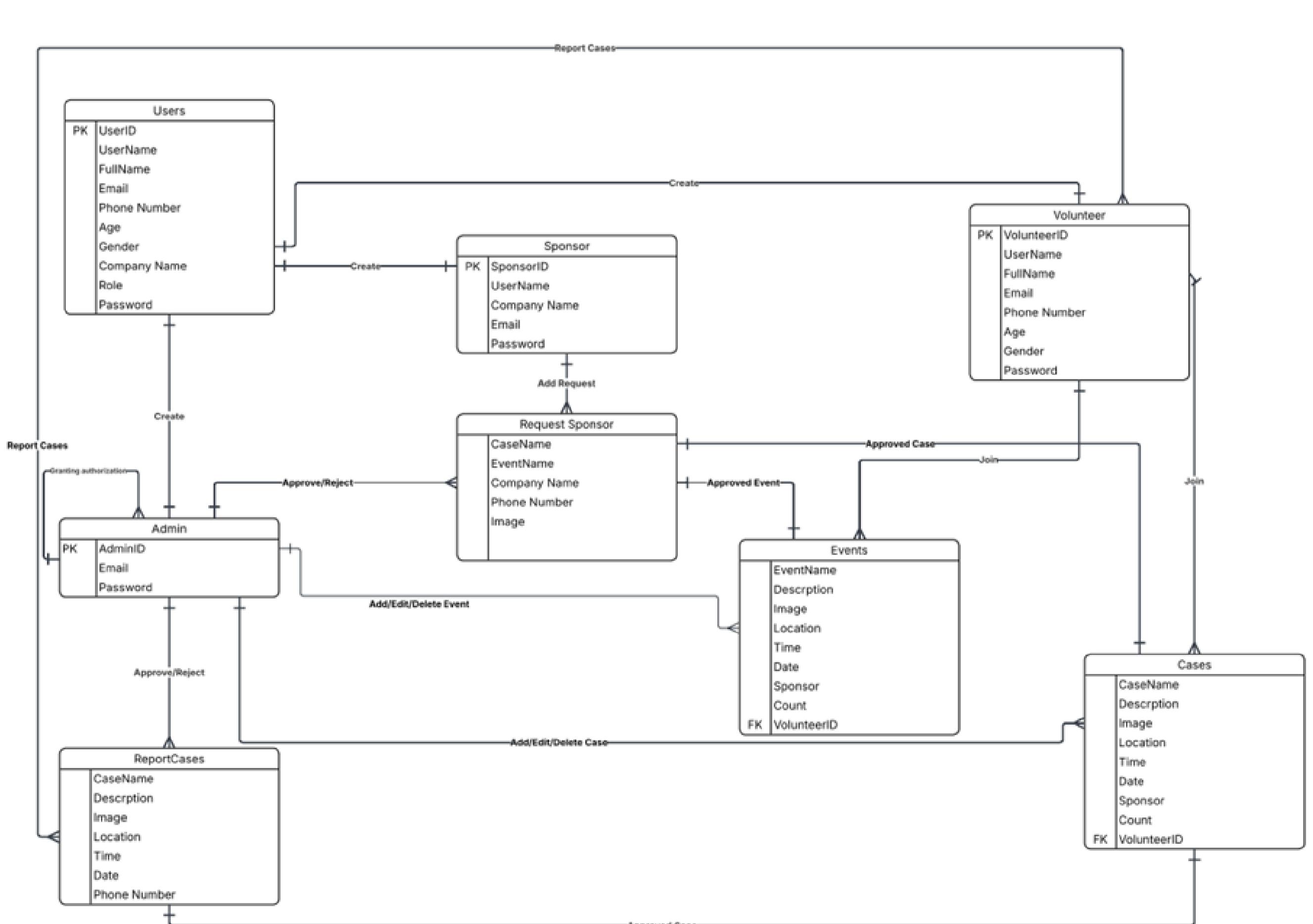
- Build a secure, user-friendly mobile app for community issue reporting in Bahrain.
- Collect system requirements and design workflows using proven security methods.
- Identify and address security threats through structured threat modeling.
- Implement core features with FlutterFlow and Firebase.
- Test, deploy, and document the application for community use.

METHODS/DIAGRAMS/FIGURES

Data Flow Diagram (DFD) Level 1



Entity Relationship Diagram (ERD)



RESULTS

- Built a working cross-platform civic engagement app.
- Implemented secure login and role-based access.
- Enabled reporting with photos, volunteering, and sponsor support.
- Passed core functional tests under Firebase limits.
- Validated main security controls using STRIDE-based testing.

CONCLUSION & FUTURE WORK

This project successfully designed, implemented, and evaluated a secure civic engagement platform that integrates issue reporting with volunteer and sponsor management for Bahraini communities. Future enhancements include integrating with official e-government services, extending security and performance testing at larger scale, and adding advanced features such as analytics dashboards and real-time notifications.