Swami Keshvanand Institute of Technology, Management & Gramothan, Jaipur

FACULTY KIT

Objective –

The goal of this faculty kit is to outline the roles, responsibilities, and tools necessary for the successful project implementation of the **Feature-rich, Practical Online Application for the Training and Placement Dept.** by students. This system involves students, company recruiters, and admin staff interacting through various functionalities such as user registration, job drive postings, resume submissions, job applications, messaging/notifications, and admin-level monitoring. This kit will guide the development process and ensure that faculty can effectively manage and oversee the design, development, testing, and deployment of the application, while also tracking progress and ensuring that all project objectives are fulfilled efficiently.

Requirements Specification –

The Training and Placement system will include:

- **User Management:** Secure login and role-based access for different users (Student, Admin).
- **Job Drive Management:** Admins can create and update company job drives for student participation.
- **Job Application Module:** Students can view drive details and apply directly through the app, with real-time status tracking.
- **Notification System:** Push notifications for drive announcements, selection results, and important updates.
- **Admin Dashboard**: Admins can manage student records, drives, company data, and track system usage.
- **Resume Upload & Download**: Students can upload resumes; admins and companies can download them during drive evaluation.

Technology Familiarization –

The project will be developed using **Android Studio** with **Java** as the primary language. Backend services like authentication, real-time database, and notifications will be implemented using **Firebase**. Firebase Authentication provides secure login for students and admins. Firestore is used to store data including student records, applications, and job drive details.

Database Creation –

The Training and Placement application uses **Firebase Firestore**, a cloud-hosted NoSQL database to handle different data types:

- **Students :** Stores login credentials, personal info, resumes, and application history.
- **Admins:** Stores authentication details and permissions to manage drives and users.
- **Companies**: Job drive records, eligibility criteria, job descriptions, and schedules.
- **Applications:** Contains each student's application data, current status, and timestamps.

High-Level and Detailed Design –

System Overview:

The system consists of three layers:

- **Frontend**: Android application that allows smooth interaction for student registration, job applications, notifications, and profile management.
- **Backend**: Firebase Authentication, Firebase Cloud Messaging manage all server-side operations, including data sync and push notifications.
- **Database**: Firebase stores structured and semi-structured data securely and supports real-time data syncing.

Detailed Design:

The backend exposes functions through Firebase SDKs to perform authentication, data storage/retrieval, and messaging. Android activities represent screens like login, registration, drive list, and applications., Firebase's real-time listeners allow instant data updates on the app without refreshing.

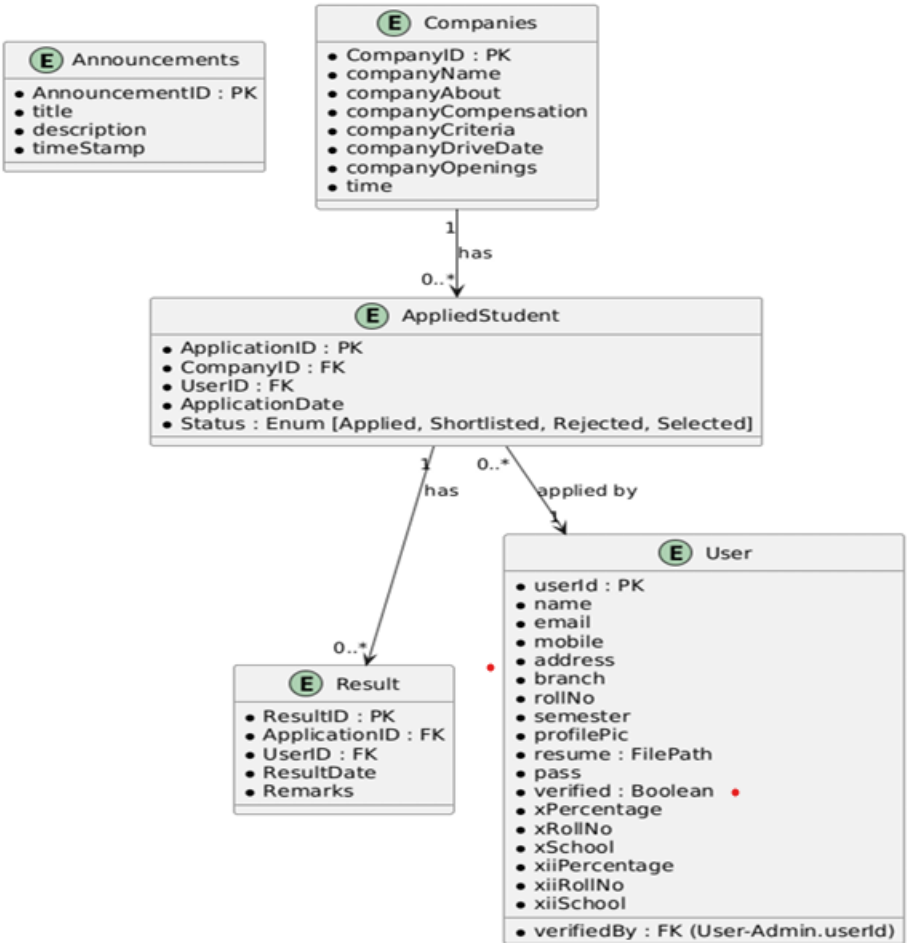

Fig-1

Frontend Implementation –

The Android app interface is designed for different users:

- **Students:** Register, login, view job drives, apply, upload resumes, and receive notifications.
- **Admins:** Create and edit job drives, send announcements, approve or reject student profiles, and generate analytics reports.

Integrating the Frontend with the Database –

The Android app connects to Firebase through SDKs. Data operations like job drive creation, application submission, and status updates are handled by Firestore. Firebase Authentication handles login sessions, while Firebase Cloud Messaging pushes important drive-related updates to users. Realtime syncing ensures students receive updates without delay.

Test Plan Review -

Testing is an important phase and is carried out at various levels:

- **Unit Testing**: Each Firebase method (login, add drive, apply) is tested independently.
- **Integration Testing**: Interaction between UI and backend (e.g., submit application, fetch drives) is validated.
- **UI/UX Testing**: Ensures the mobile interface is user-friendly, responsive, and follows best practices.
- **Performance Testing**: App is tested under multiple drive uploads and user loads to evaluate real-time responsiveness.

Final Review -

At the conclusion of the project, a comprehensive review is conducted to ensure the application meets all outlined objectives. This includes verifying user login, job posting visibility, application workflows, resume uploads, and notification delivery. Faculty will gather feedback from test users (students or T&P cell) to refine the product further.

Documents/References that May Aid the Process of Evaluation-

- **Android Developer Documentation**: For Java and Android UI components.
- **Firebase Documentation**: For Authentication, Firestore Database, and Cloud Messaging.
- **UI/UX Design Guides**: For best practices in mobile app layout.

Conclusion –

This Faculty Kit provides a comprehensive guide to facilitate the evaluation and supervision of the student project titled **"Feature-rich, Practical Online Application for the Training and Placement Dept."** It ensures clarity in roles, technologies, and deliverables. The structured documentation and modular system design enable smooth project tracking and quality assurance. By integrating modern technologies like Firebase and Android, the app provides an efficient, scalable, and user-friendly solution for college training and placement processes