Software Engineering Lab

Implementation Report I - Build I

Course Assistant for Educators

Streamlining the teaching process

Dibyadarshan Hota (16CO154)

Omkar Prabhu (16CO233)

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1. Basic Information

The software is majorly built using Java and Android-XML. The IDE for Android development is provided by Google and JetBrains - Android Studio. TravisCI has been used for integration, Android API provided by Android Studio IDE through SDK tools has been used. SQLite has been used as Database and Firebase has been used for authentication, receiving feedback from users and tracking the application usage. Gradle build tool has been as the build automation software. Lastly, Git has been used as VCS. Material Design Guidelines have been referred for UI creation.

2. Functional Requirements (Implemented)

FR.ID	Name	Description
FR-1.1	Download Application	APK (VCS link) has been provided for downloading the application.
FR-1.2	User Registration	Users can register using any Email account. Firebase authenticates and tracks users.
FR-1.3	Add Course	Course can be added along with course name, course code, student count, CR and TA contact details.
FR-1.4	Record Attendance	Attendance can be recorded. This data is stored in SQLite DB.
FR-1.11	Contact CR/TA	An email with a pre-defined template can be sent via Gmail.
FR-1.12	Document Similarity	Two documents can be tested for plagiarism (using Cosine similarity algorithm).
FR-1.13	Feedback	Feedback can be sent by users. This data is recorded using Firestore provided by

		Firebase.

3. Functional Requirements (Not Implemented)

FR.ID	Name	Description	Reason for Inclusion in next Build
FR-1.5	Add Marks	Add in-semester and end-semester marks	Considering various approaches like reading CSV files or taking data directly. The most beneficial mechanism yet to be finalized.
FR-1.6	Add Project Deadlines	Users can set project deadlines	Planned to be completed in the next sprint (Agile model has been chosen).
FR-1.7	Display Marks and Attendance Percentage	User can view marks and attendance percentage	Implementation relies on FR-1.5
FR-1.8	Search by Student	Attendance and marks will be displayed student-wise.	Customer feedback on the display in FR-1.10 needed.
FR-1.9	Sort in Student List	Sorted list of students will be visible	Implementation relies on FR-1.5
FR-1.10	View Attendance for a Day	Attendance for a day will be visible	Database creation is complete. Layout creation yet to be finalized depending on user's need.

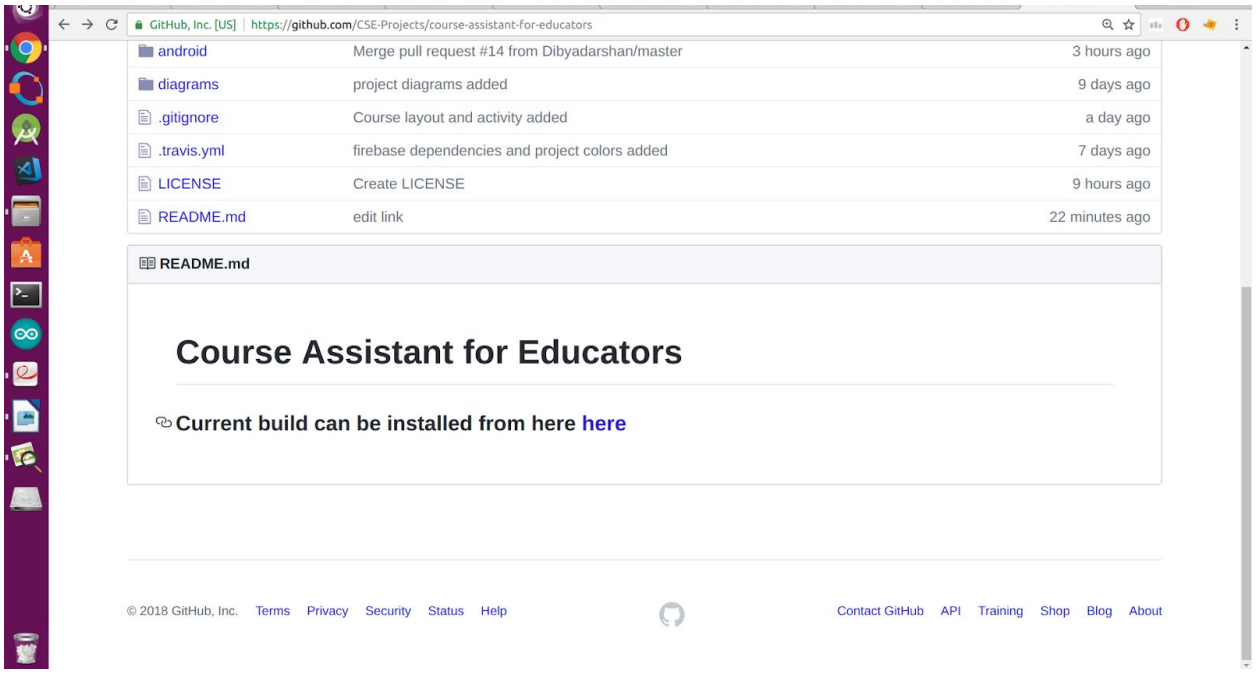
4. Screenshots

FR-1.1 Download Application

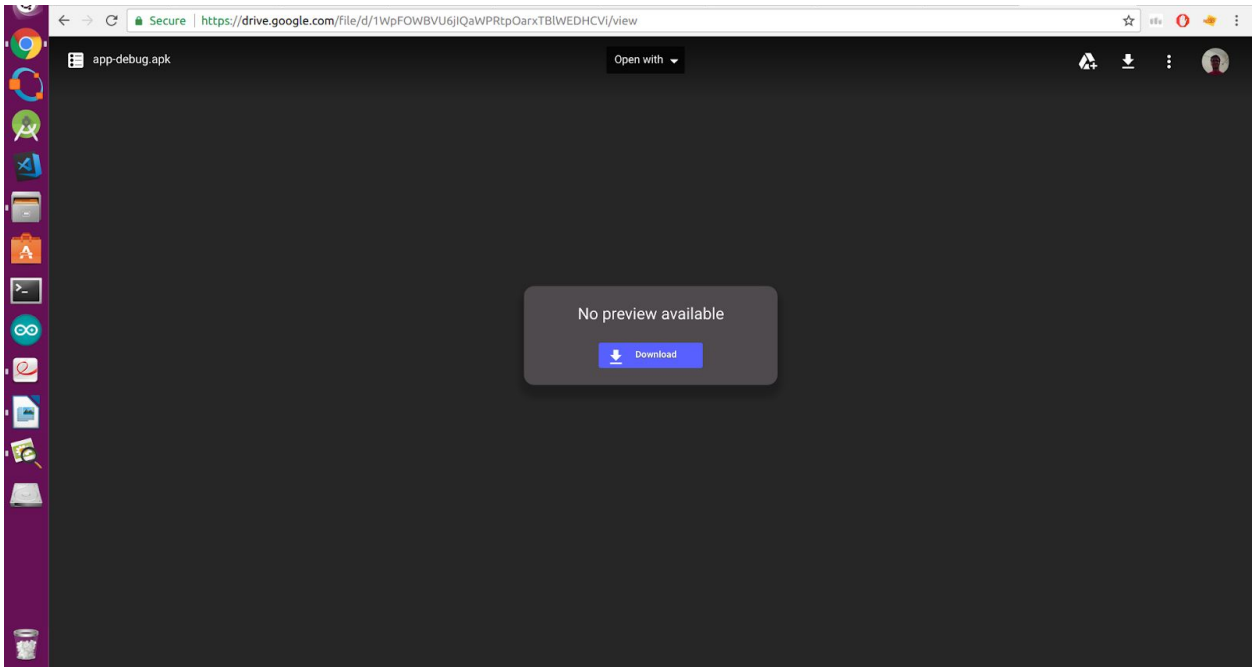
The application can be downloaded here:

https://github.com/CSE-Projects/course-assistant-for-educators

README.md provides APK download link

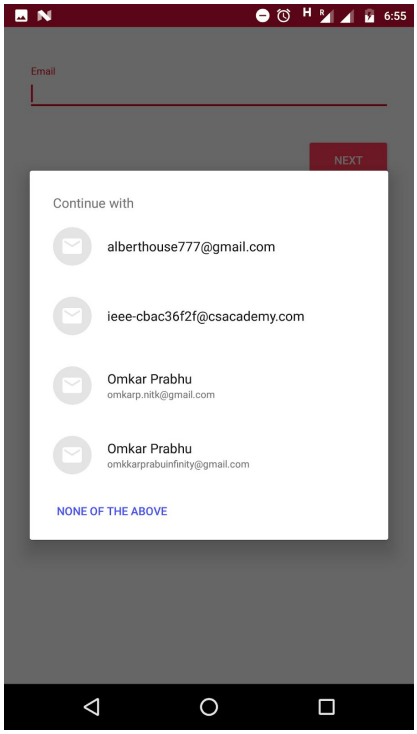


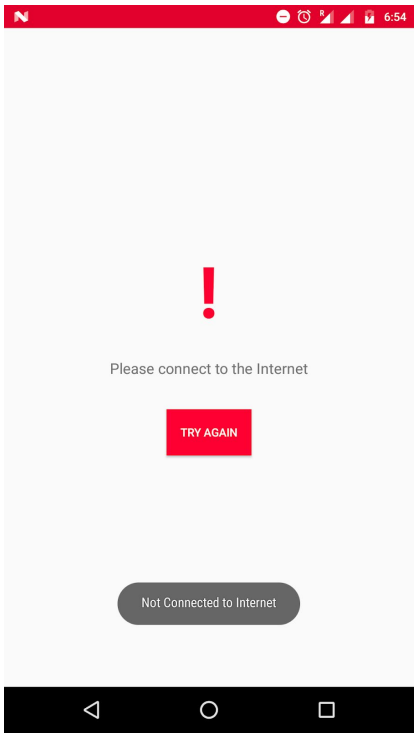
APK file download (Google Drive link)

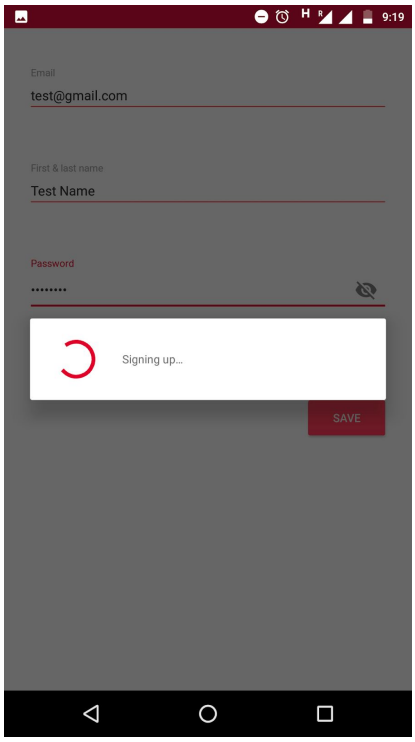


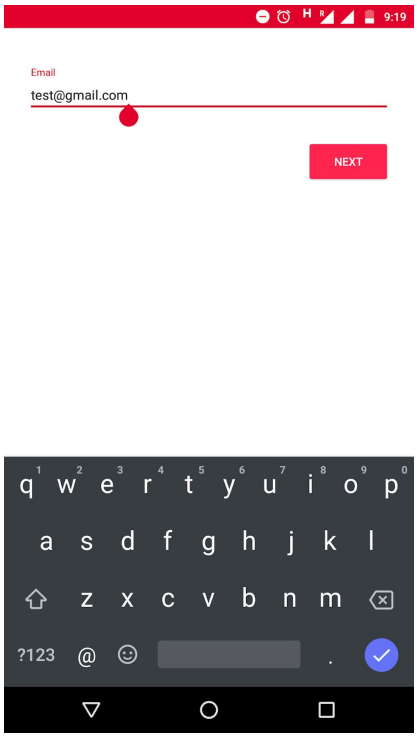
FR-1.2 User Registration

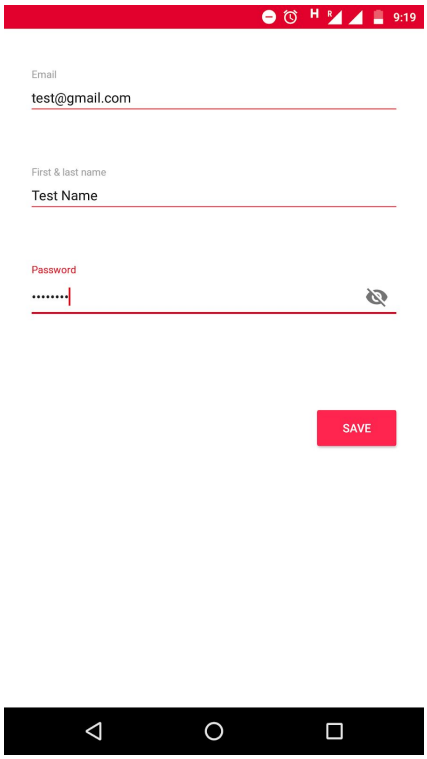
Internet connectivity is a must for registration. An error screen appears otherwise. Screenshots below show what appears in case of new registration and old users.

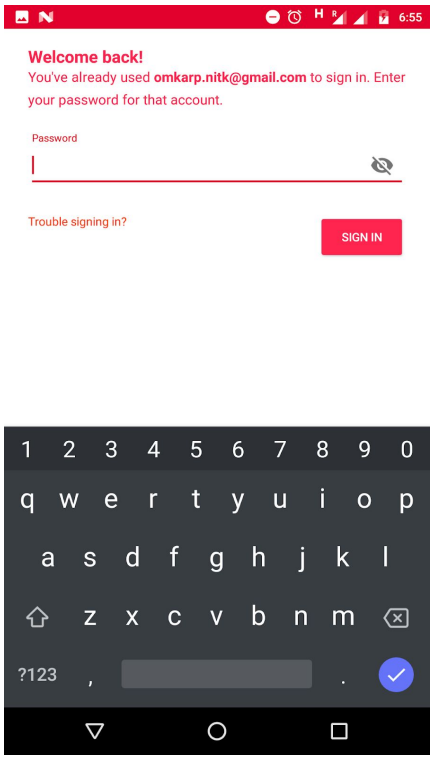





9:19
Email
test@gmail.com
First & last name
Test Name
Password
Signing up...
SAVE

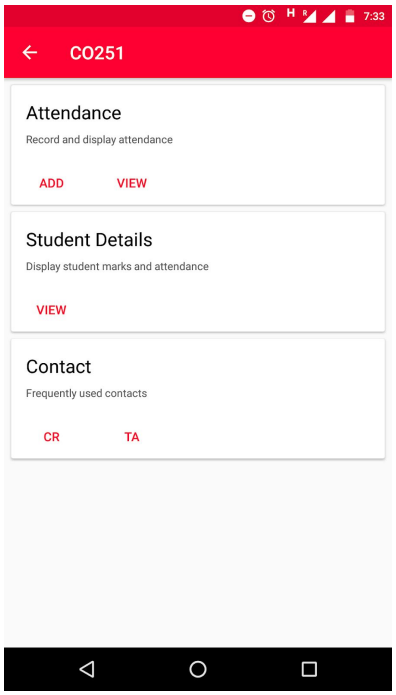

9:19
Email
test@gmail.com
NEXT


9:19
Email
test@gmail.com
First & last name
Test Name
Password
SAVE

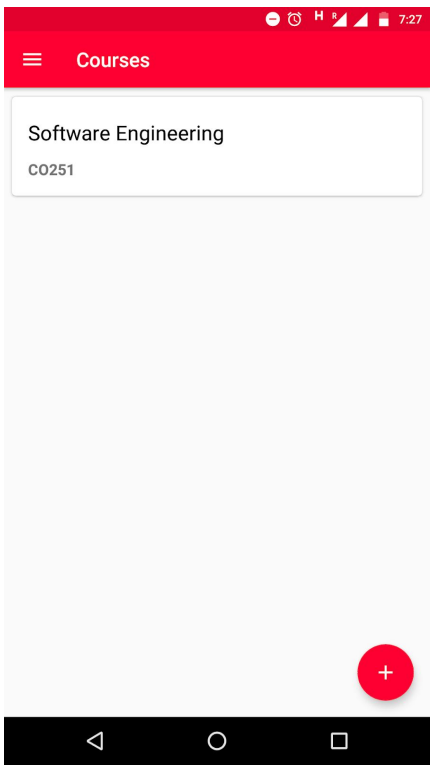

6:55
Welcome back!
You've already used omkarp.nitk@gmail.com to sign in. Enter your password for that account.
Password
Trouble signing in?
SIGN IN

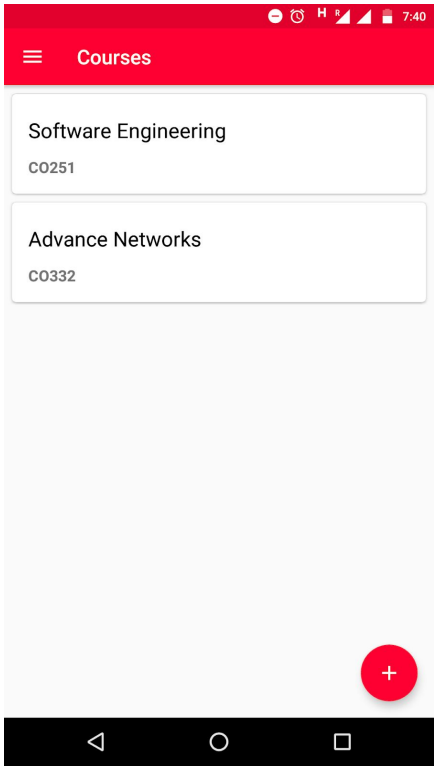
FR-1.3 Add Course

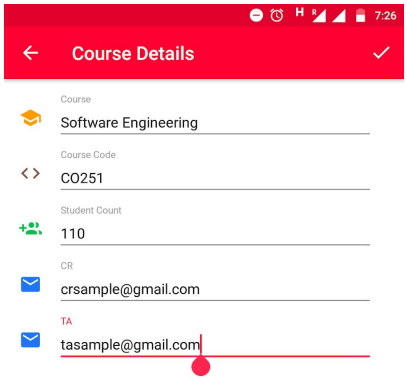
Once, the course is added and on choosing a course, the following screen appears.

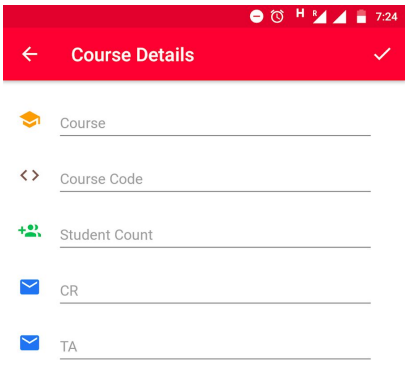


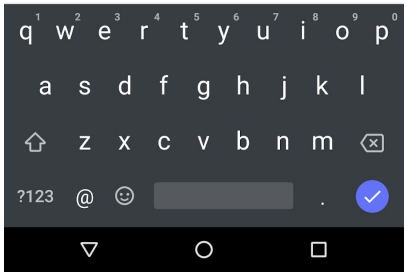
The following screen shows list of courses.







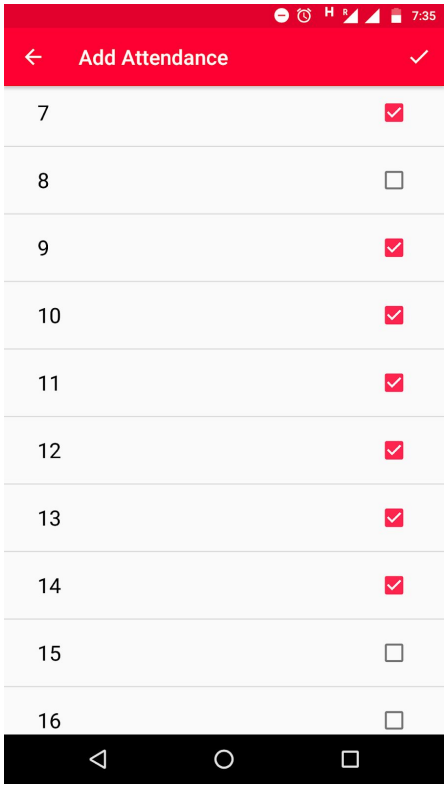




The images above show how a course can be created.

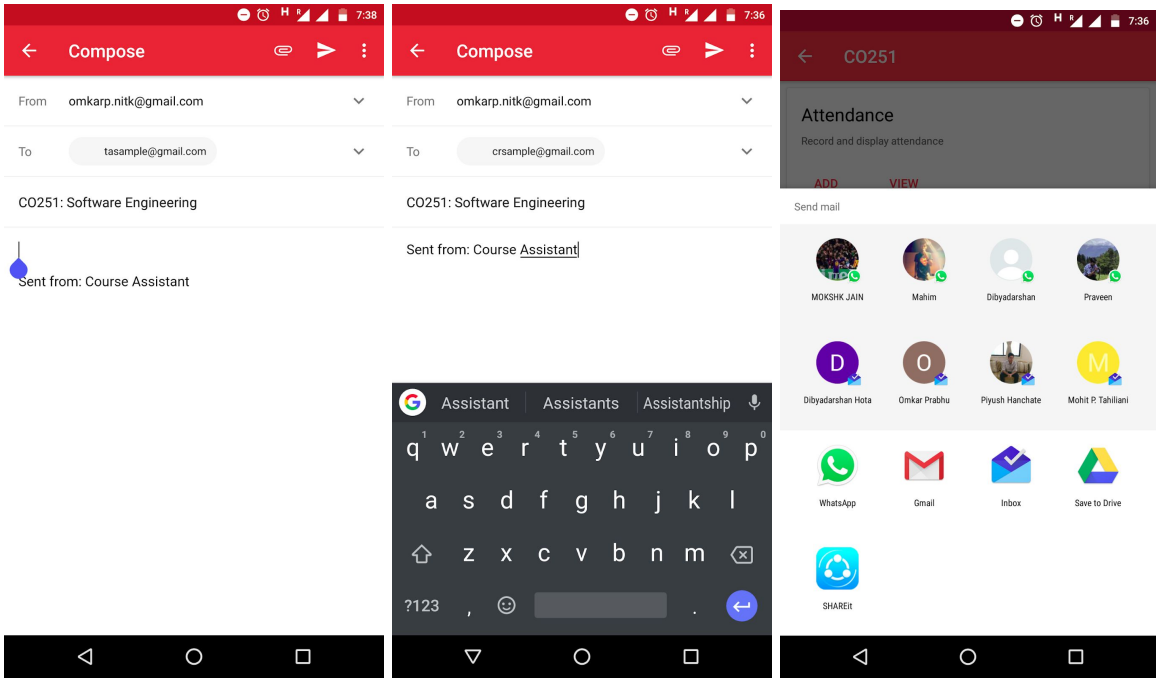
FR-1.4 Record Attendance

Attendance can be recorded for a course as follows.



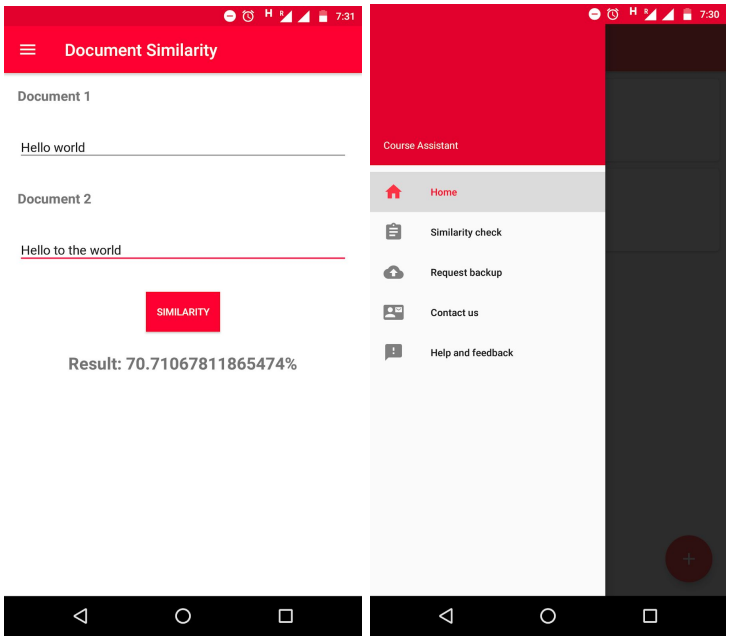
FR-1.11 Contact CR/TA

CR/TA can be contacted using email. The template shown below is completely rendered by the software to save time and effort. Any application can be used to send email.



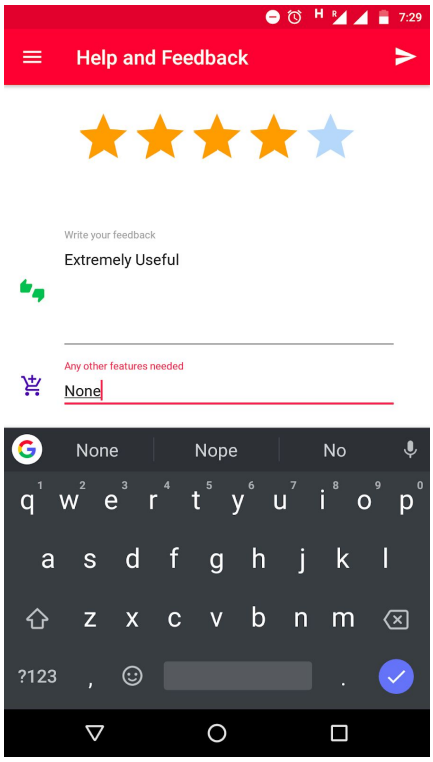
FR-1.12 Document Similarity

The following screenshots show how the application is calculating similarity between two strings.



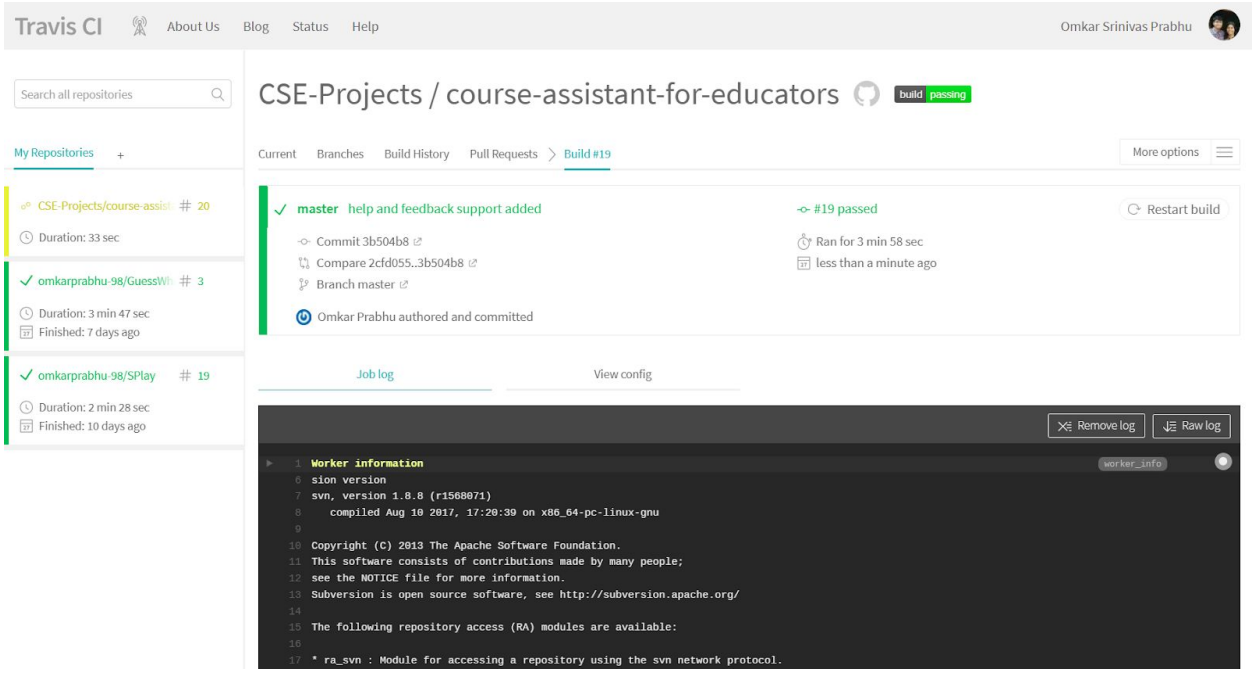
FR-1.13 Feedback

The following screenshots show how the user feedback is taken.

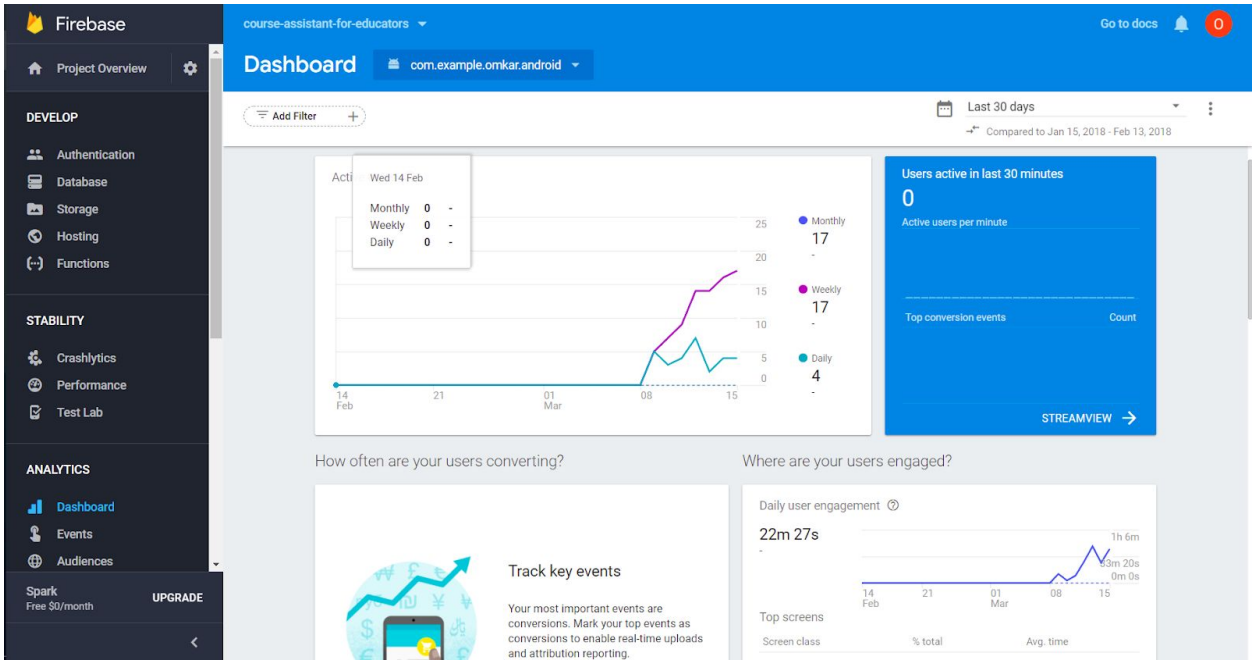


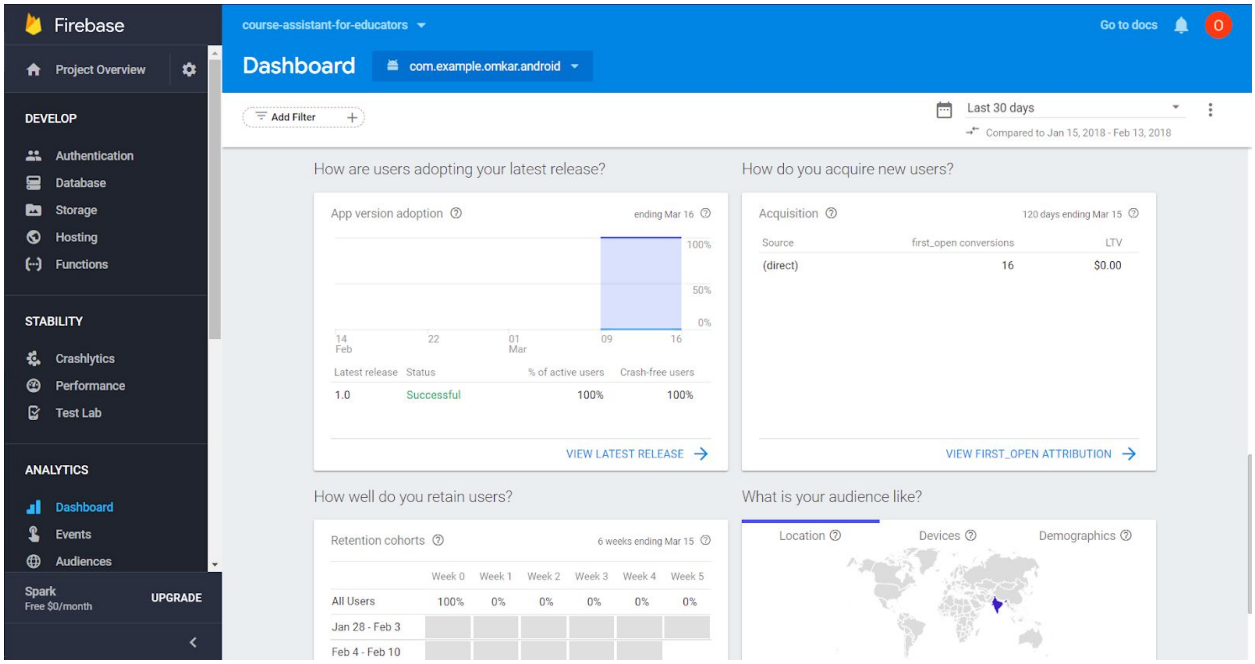
Additional Screenshots

TravisCI interface

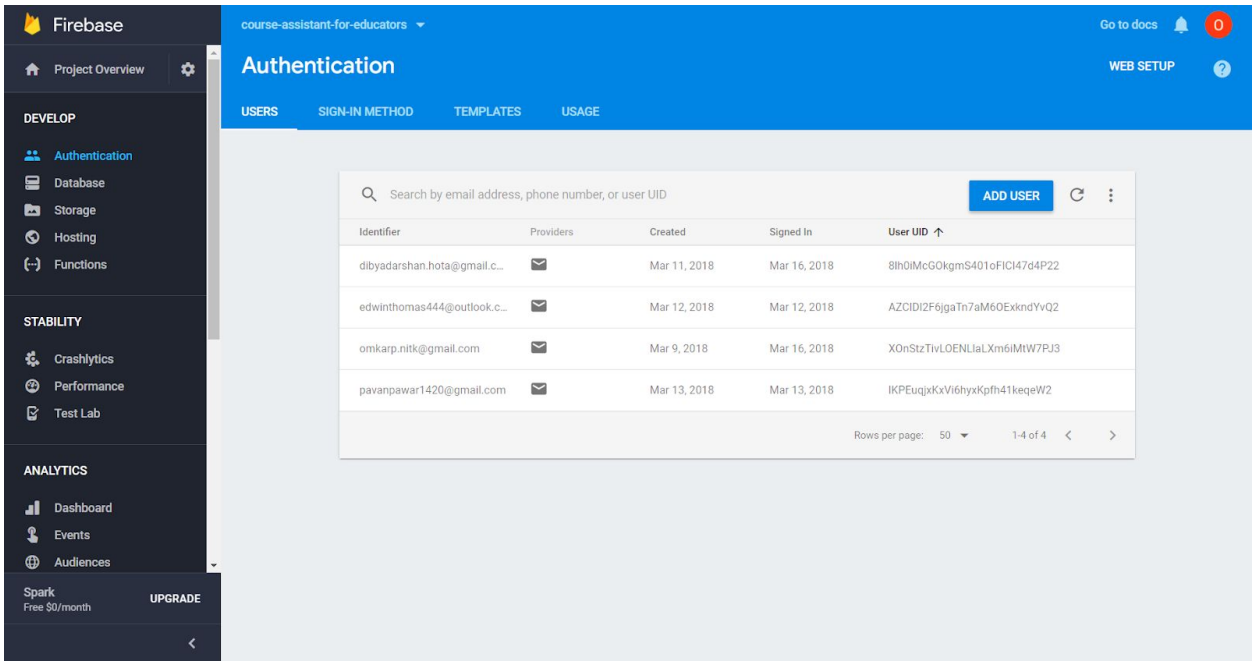


Firebase usage statistics

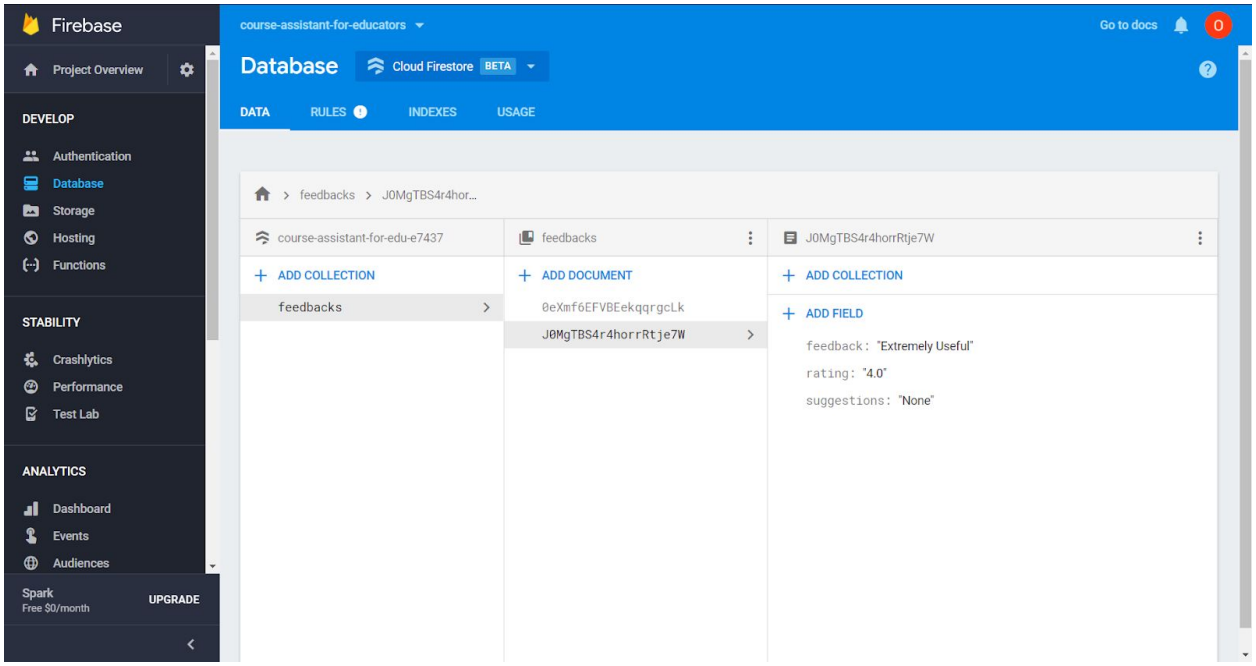




Registered users



User feedback



5. Plan for Next Build

- For the upcoming builds we shall increase the accuracy of plagiarism check.
- Functional requirements haltedfor user feedback shall be completed.
- The database access functions would be made for ease of access.
- Proper input format for marks will be decided upon and implemented.
- The future sprints will focus on optimizing the existing features as well as improving UI/UX based on feedback.

6. Summary

Most of the project features have been implemented. The product shall be completely operational in the coming weeks. The source code has been made public along with usage license. Pull requests and issues are constantly being resolved and arranged with Project Board. The accuracy of the plagiarism check will be improved with various optimizations.