Design Summary

Team name: PISA

App name: Lighte

Platforms Targeted: The development platform and database used are Android Studio and Microsoft Azure respectively.

Tools used: Speech to text conversion, text to speech conversion, Google Maps integration and SMS API.

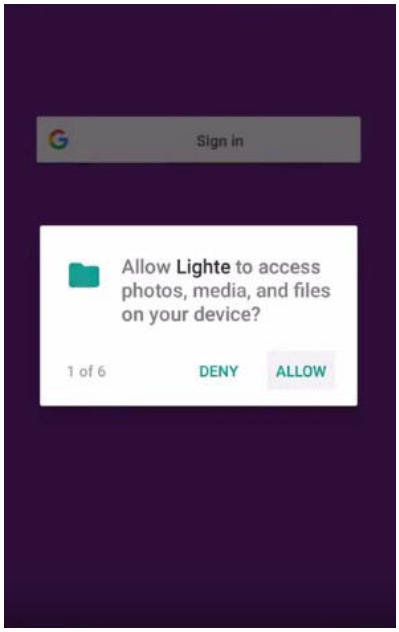
Link for video demonstration: https://1drv.ms/v/s!ApajREYfhaLGay3qXVI6nXp-TEU

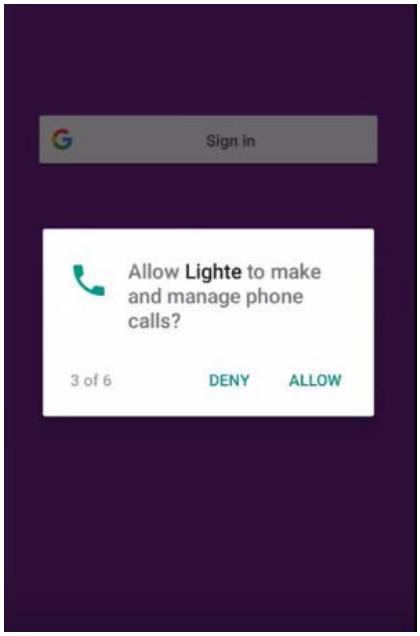
Summary Of Idea

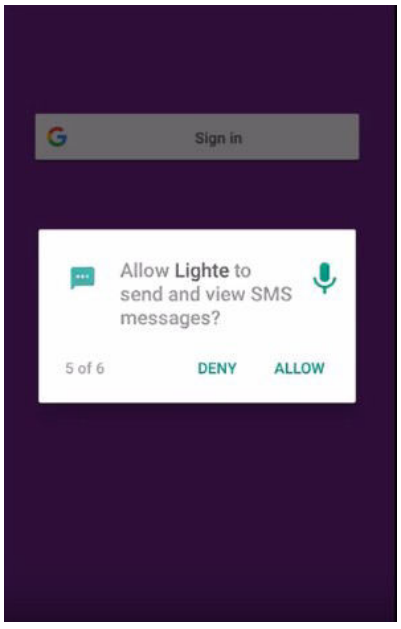
The application 'Lighte' is for visually impaired people. It is a forum where blind people can communicate with each other and with a few organizations which will be volunteering to help them.
We feel this is an innovative idea because of its uniqueness and eccentricity. It aims to help the visually challenged to progress, which in turn paves the way for cumulative advancement of every section of society. The commercial apps available these days aim at entertainment, management systems, discussion forums but through this competition, we aim to contribute a little to society by putting technology to good use and developing an app for aiding the unprivileged.

The workflow of the app is explained as below :

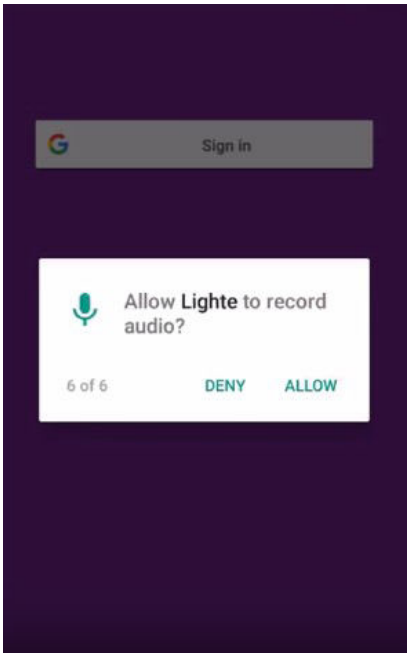
When we start the app, we have to give it certain permissions.

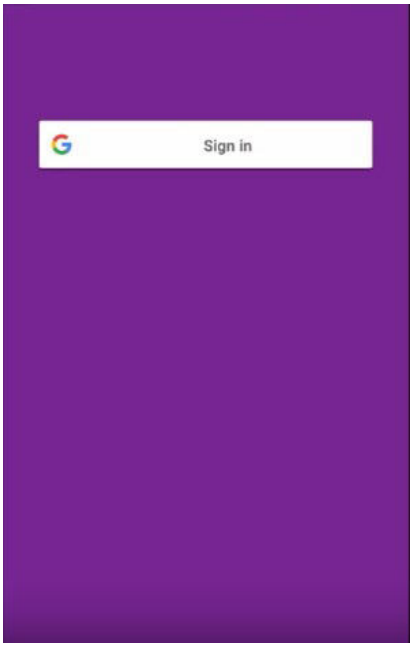




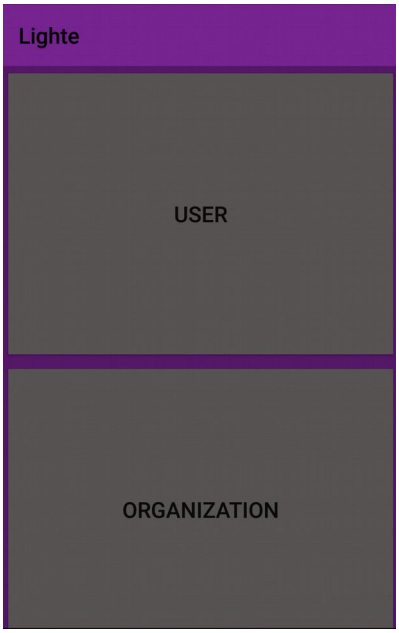


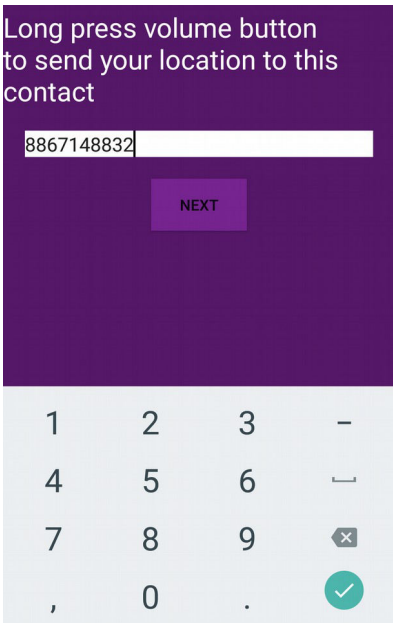
Next, we sign in.

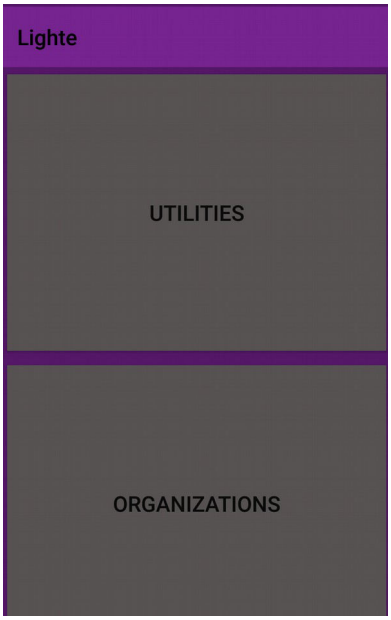




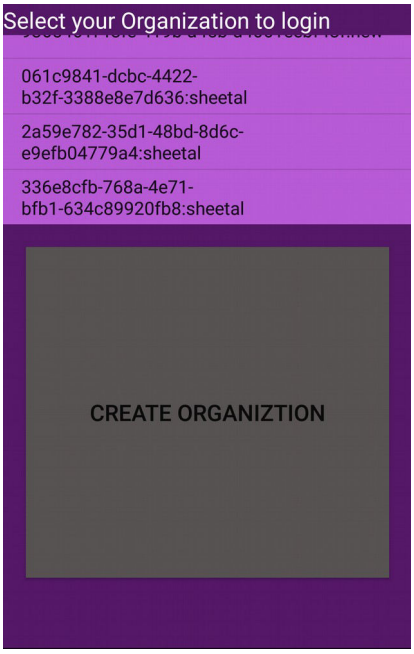
After signing in, we get a page with 2 buttons (User and Organization). When we click on User, an emergency contact number for the blind user can be fed. After clicking on Next button, another page appears, which comprises of 2 buttons (Utilities and Organizations).

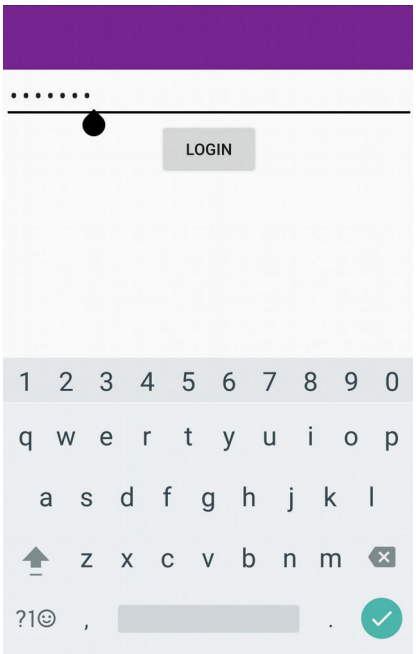




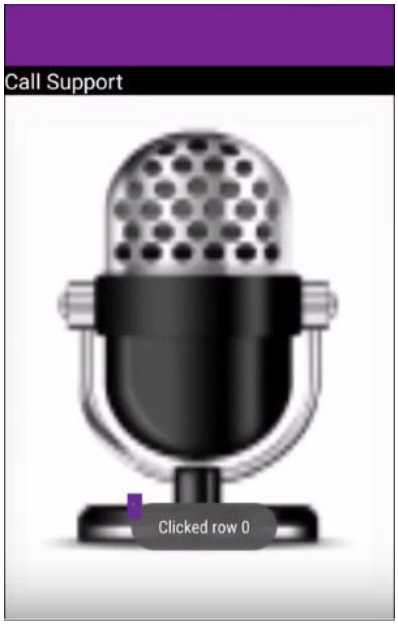


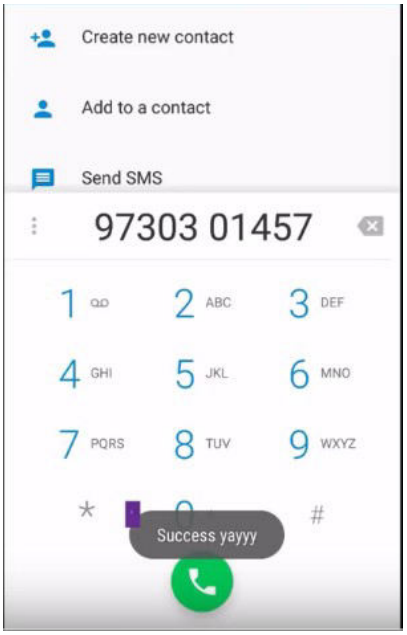
On clicking on Organization button, we get options to create an organization or choose from an existing one.
To create an organization, we need to first register and then login.

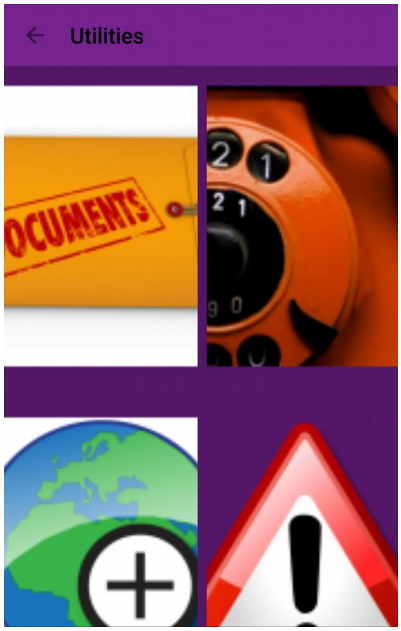




Then we can select an organization from the registered ones and a call will be made to that organization.
Now coming to the Utilities tab, when we click on it, we get a screen with 4 buttons (Documents, Speed Dial, Location and Emergency). Each of these buttons will cover a quarter of the screen space, so that it is easy for the blind user to click on the desired button. The GUI has been carefully crafted, in order to make it more convenient for the blind user to navigate.

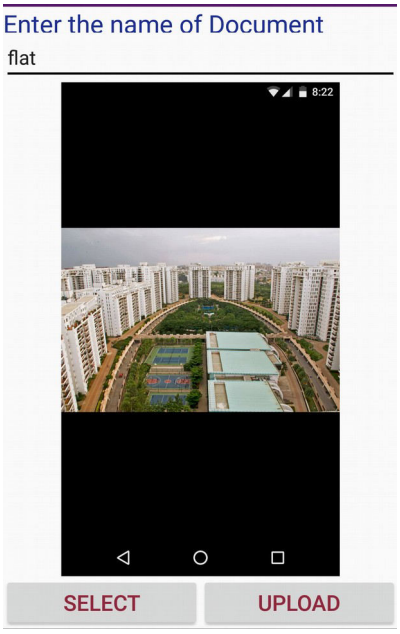


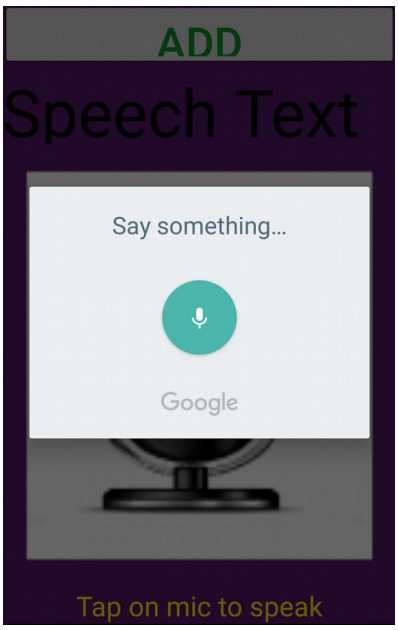




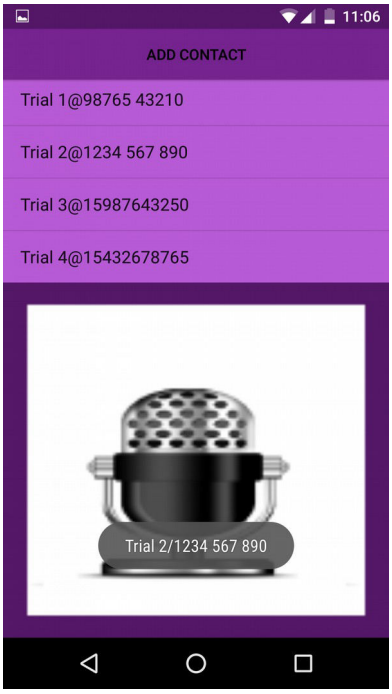
When the user clicks on the first button, which is Documents, he can add documents,and then later the blind user can retrieve those documents by just voicing out the name of the document, and the app converts speech to text and retrieves the document from the database. He can tell out the name of any document which he

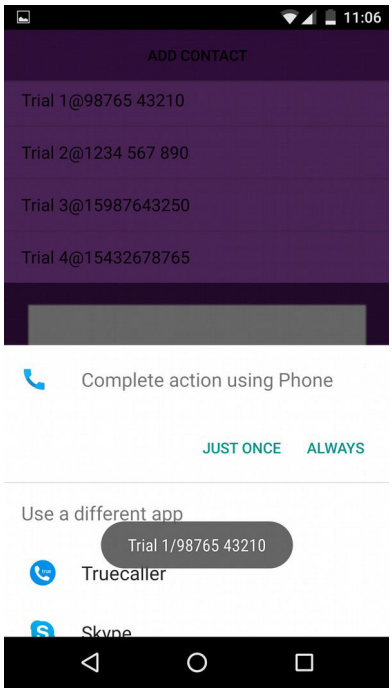
wants to be displayed on the screen. Documents like Aadhar Card, PAN card and so on will be already fed into the database. So when he says the name of a document, that speech will get converted to text, and that document will appear on screen.

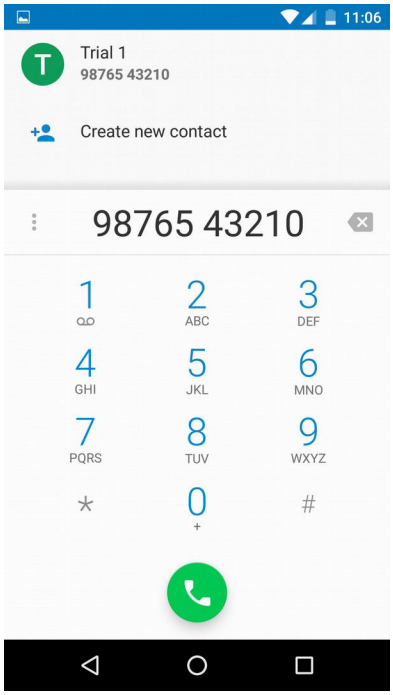




When he clicks on the second button, which is speed dial, he can voice out the name of a contact, and a call will be made.

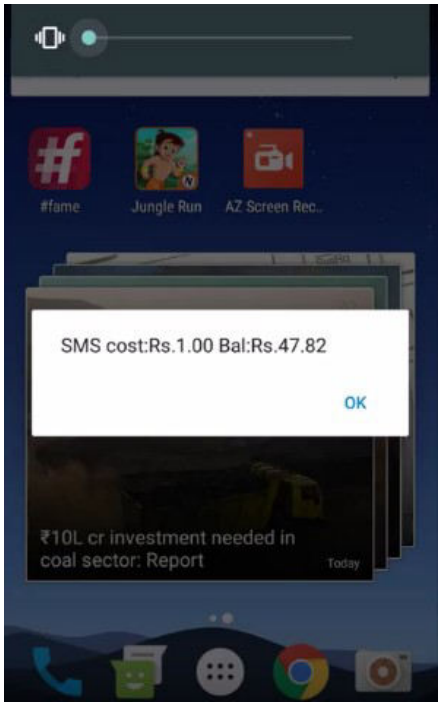


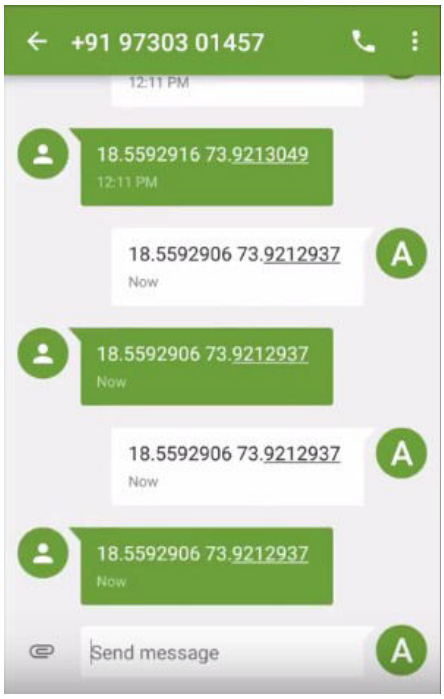




When the user clicks on the third button, which is Location, his current location will be shown and when he holds the volume down button for a long time, an SMS will be sent to the emergency number which had been earlier fed into the database. The SMS

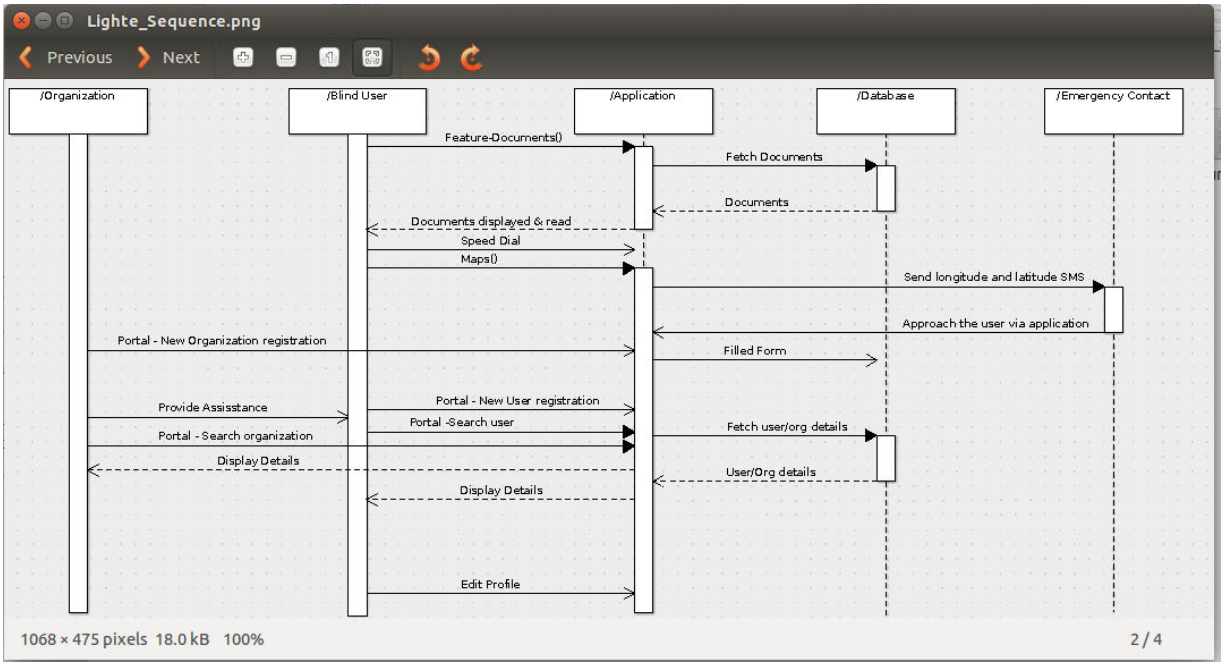
will contain the latitude and longitude of the current location of the user.





When he clicks on the fourth button, he will be directed to the page with the User and Organization buttons.
This is the summary of the design of 'Lighte'.

Sequence Diagram



Use Case Diagram