How to Use this Template

1. Create a new document, and copy and paste the text from this template into your new document [Select All → Copy → Paste into new document]
2. Name your document file: "**Capstone_Stage1**"
3. Replace the text in green

GitHub Username: princesv

Aveon Racing: Official app

Description

The app is the official application of team Aveon Racing. A team of students dedicated to design and fabricate an electric off road vehicle. The app has an overview about the team in the main

activity along with links to all our social media handles like facebook, Instagram, Youtube, Medium etc and an activity that shows a list of teammates in a list view. Clicking on a list item directly takes you to activity in whatsapp where one can direct a message to that team member . Further the app uses an external library to display a real time graph of the battery temperature while the vehicle is running on the track. It helps the team to monitor the performance of the vehicle while operating and avoid overheating. The app also implements Google maps and shows current location of the vehicle.

Intended User

The intended users for the app are all the team members in team Aveon and students of our university who are interested in our team's activities and updates.

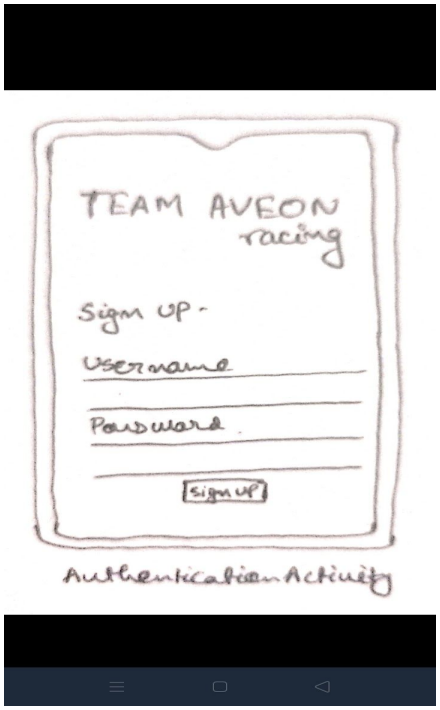
Features

- User authentication
- Description of team Aveon
- Advertise our social media handles
- Make contacting team members easy
- Display a real time graph of battery temperature
- View current location of the vehicle using GPS tracking

User Interface Mocks

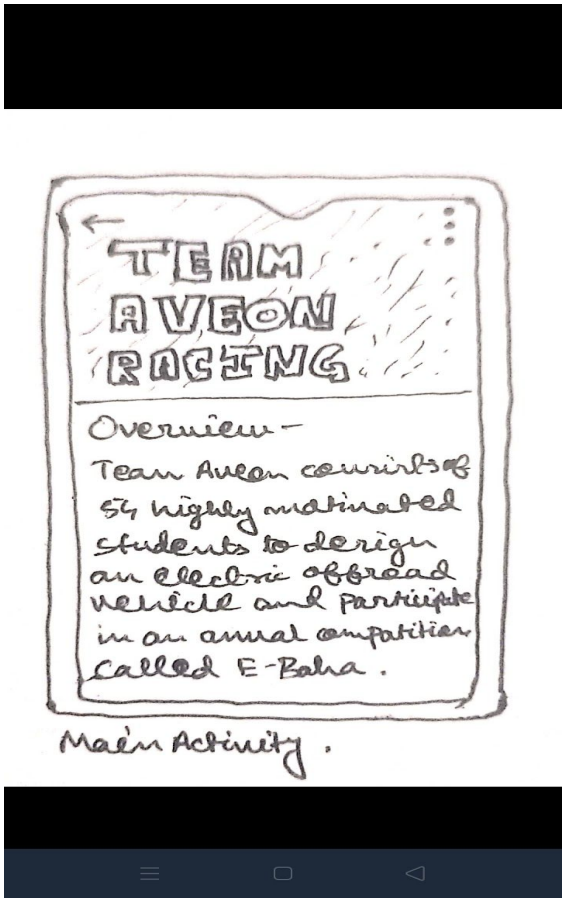
These can be created by hand (take a photo of your drawings and insert them in this flow), or using a program like Google Drawings, www.ninjamock.com, Paper by 53, Photoshop or Balsamiq.

Screen 1



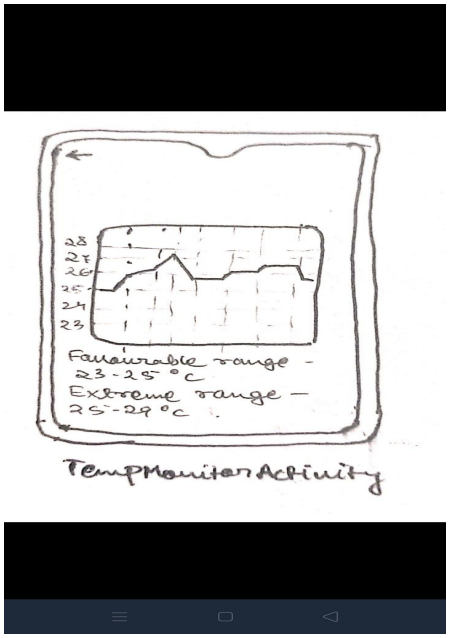
This is the screen that opens up When the app is first opened. It allows users to login. This is achieved in the backend using firebase authentication.

Screen 2



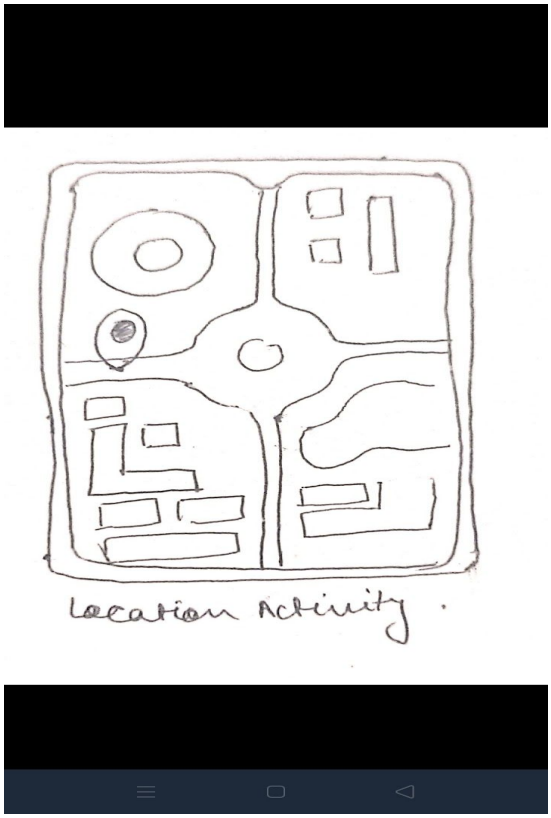
When a user logs in, The main activity opens up. It contains a description about the team, links to all our social media handles and buttons to navigate to other activities.

Screen 3



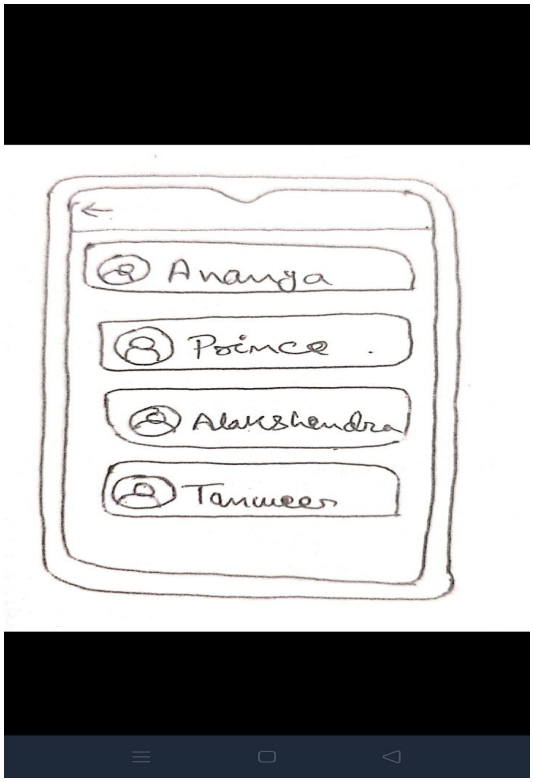
This activity displays a graph of the vehicle's battery temperature which the app extracts in real time from the firebase database. The activity also contains a description about what temperature conveys about the current operating condition of the vehicle. What temperature range is desirable, and what temperature range means the vehicle needs to be stopped immediately in case of overheating.

Screen 4



This activity shows the current location of the vehicle on Google maps.

Screen 5



This activity displays a list view of all the team members from where users can communicate with them on whatsapp.

Key Considerations

How will your app handle data persistence?

All the data that the app will be using will be stored and fetched from Firebase realtime database.

Describe any edge or corner cases in the UX.

To display a real time graph of temperature I will use runnable. So during orientation change or during navigation to other apps while the runnable is running, it is stopped as soon as possible in onPause method and once the activity is resumed the runnable starts again in onResume.

Describe any libraries you'll be using and share your reasoning for including them.

1)MPAndroid chart is the open source library I will be using to display the real time graph of the temperature.
2)Google play services library will be used for accessing Google maps service in my app.
3)Firebase will be used for data persistence and authentication.
4)Picasso library will be used to display images.

Describe how you will implement Google Play Services or other external services.

Google play services will be used to display the Google map that shows the location of the vehicle. The value of latitude and longitude will be extracted from the firebase realtime database and will be used as a parameter to inflate the map screen.

Next Steps: Required Tasks

This is the section where you can take the main features of your app (declared above) and break them down into tangible technical tasks that you can complete one at a time until you have a finished app.

Task 1: Project Setup

Create a new project in android studio with min sdk version 19 and java as the language and set up other basic requirements to begin the development of the app.

- Configure libraries
- Create a new Google cloud project and generate API to use Google maps service in Maps activity.

Task 2:Create signin and signup activities

- Build UI for signup and signin activities
- Implement firebase authentication in both the activities.

Task 3: Build main activity

- Build UI for main activity.
- Fetch the content to be displayed in the main activity from firebase database and display on the activity.

- Add three buttons to this activity which will be used later to navigate to temperature monitoring activity, maps activity and contact activity.

Task 4: Build Temperature monitoring activity

Describe the next task. List the subtasks. For example:

- Build UI for temperature monitoring activity.
- Implement the basic codes required to set up the MPAndroid library.
- Fetch temperature value from firebase database and display in the graph.

Task 5: Build maps activity

- Build UI for maps activity.
- Write the basic code to implement Google play maps service.
- Fetch value of latitude and longitude and inflate the map activity passing in the values.

Task 6: Build contact activity

- Build UI for contact activity.
- Create a listview adapter and inflate the list with teammates' names.
- Write code to open up whatsapp activity to message the person when a list item is clicked.

Task 7: Implement material design

Submission Instructions

- After you've completed all the sections, download this document as a PDF [File → Download as PDF]
    - Make sure the PDF is named "**Capstone_Stage1.pdf**"
- Submit the PDF as a zip or in a GitHub project repo using the project submission portal

If using GitHub:

- Create a new GitHub repo for the capstone. Name it "**Capstone Project**"
- Add this document to your repo. Make sure it's named "**Capstone_Stage1.pdf**"