MY TRACKER

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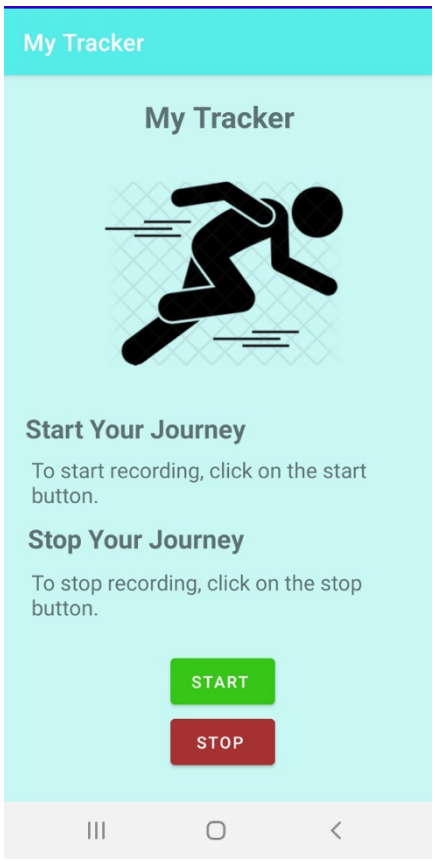
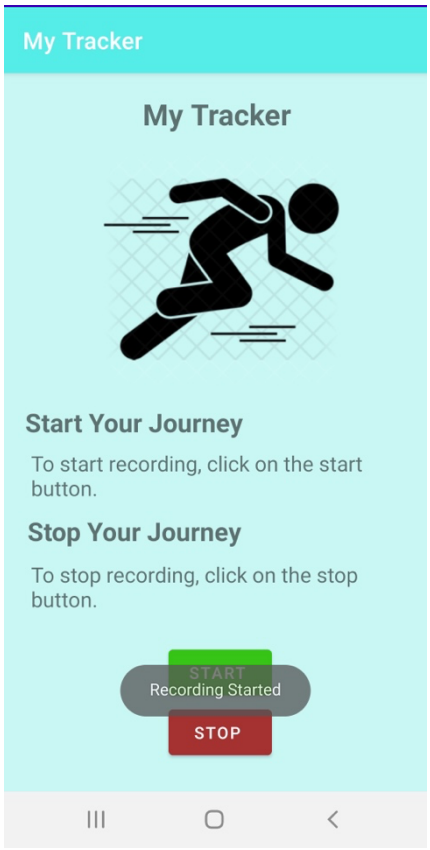
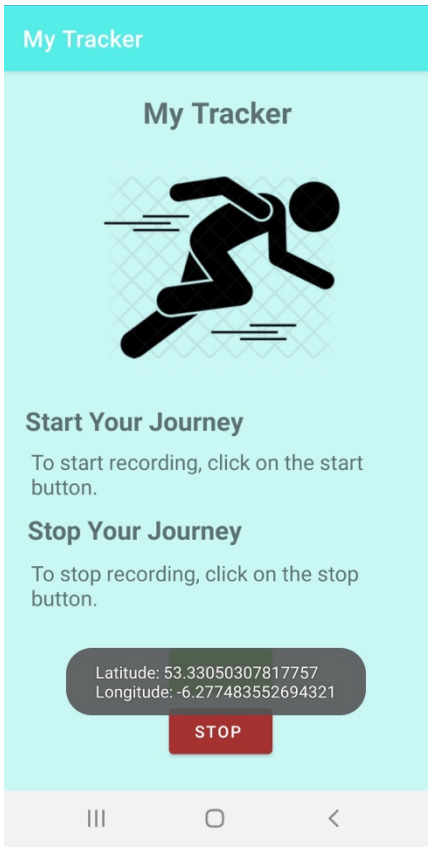
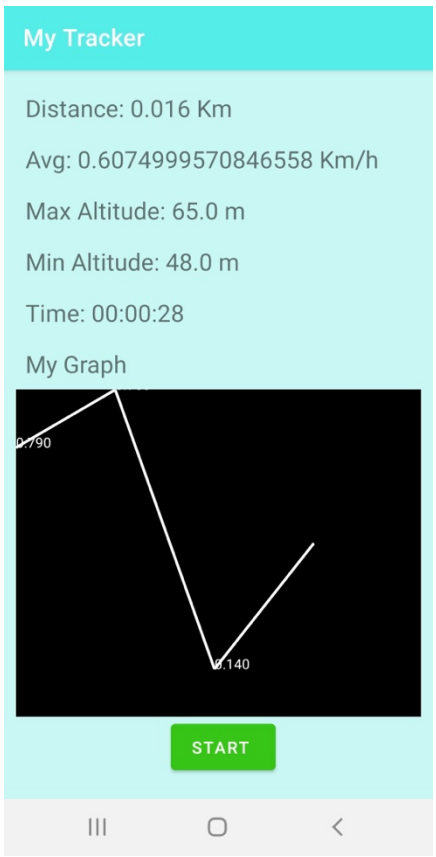
Table of Contents

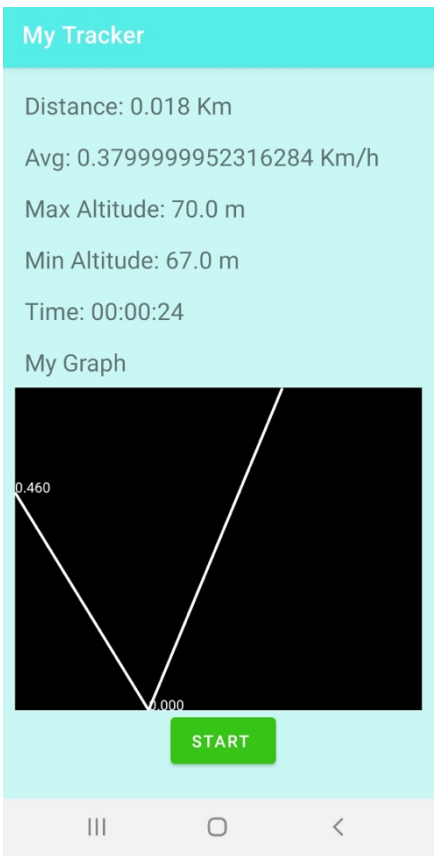
UI Design


My Tracker
My Tracker
Start Your Journey
To start recording, click on the start button.
Stop Your Journey
To stop recording, click on the stop button.
START
STOP

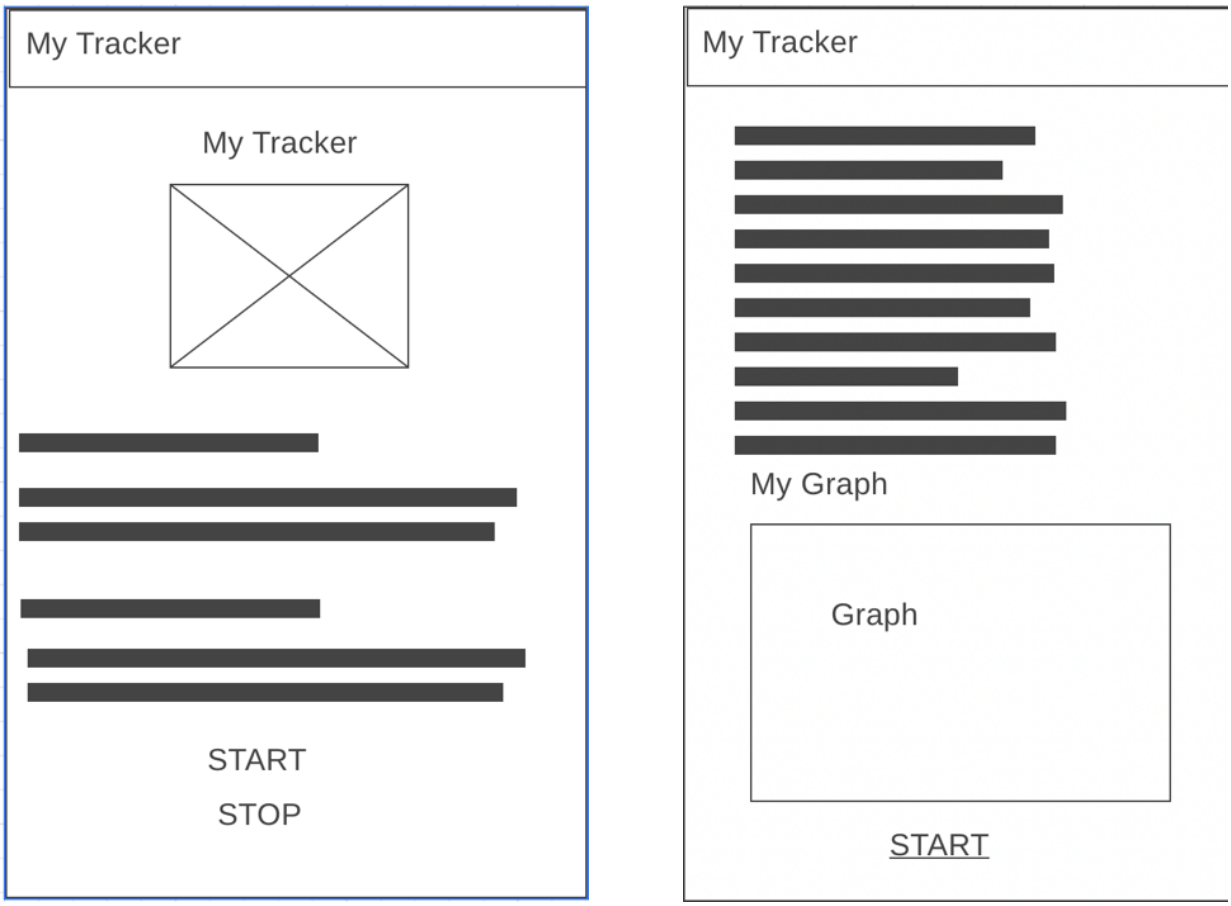

My Tracker
My Tracker
Start Your Journey
To start recording, click on the start button.
Stop Your Journey
To stop recording, click on the stop button.
START
Recording Started
STOP


My Tracker
My Tracker
Start Your Journey
To start recording, click on the start button.
Stop Your Journey
To stop recording, click on the stop button.
Latitude: 53.33050307817757
Longitude: -6.277483552694321
STOP


My Tracker
Distance: 0.016 Km
Avg: 0.6074999570846558 Km/h
Max Altitude: 65.0 m
Min Altitude: 48.0 m
Time: 00:00:28
My Graph
0.790
0.140
START


My Tracker
Distance: 0.018 Km
Avg: 0.3799999952316284 Km/h
Max Altitude: 70.0 m
Min Altitude: 67.0 m
Time: 00:00:24
My Graph
0.460
0.000
START

Wireframe Diagram



Main Activity

Upon starting, the app request for permission to access location and storage. Once permission is granted, the app can function without issues. The Main Activity consists of the app name on the top of the page, followed by an image of runner.
Afterward, there are few instructions on how to use the app to enable the user to navigate through the app properly.The app also consists of two buttons, namely a START button and a STOP button. The START button is green in colour as even without reading what's written in the button the user will understand it start. The STOP button is red in colour, which is generally used for stop sign. When the start button is pressed, a message is appears on screen using Toast and timer is also started. After every 5 seconds, another Toast message appears displaying location. When the stop button is pressed then the details of the journey is stored in a file name. Afterward the page changes to the Result Activity.

Result Activity

The result page displays the distance, average speed, time, maximum altitude, minimum altitude and a graph of speed. The graph has a background with white lines displaying the change in speed.

Code Description

Main Activity file

OnCreate Method

- Initialise all the variable, buttons and file that the page is connected to.
- Asks for permission from user to use location and store data.
- It listens for click for the start and stop button, to proceed to next task.

startRecording Method

- It calls the addLocationListener method which tracks the location and output a Toast message about the update in location.
- It start the timer.

stopRecording Method

- It finds the time taken by subtracting the start time and running time. It calls the stop location Listener.
- It calls the writepath method that writes to the file, where file name is the date and send to it to the next page which is the ResultActivity page.

checkPermissionRequest method

- It checks whether all the permission required is granted by the user.
- It creates the dialogue box for the permission.

ReportActivity File

onCreate Method

- It initialise the Textview and custom view for this page an it also has a button for restart. It also check whether read permission is granted.

getValues method

- This method read readerGPX method and takes the maximum altitude, minimum altitude, time, speed and total distance.
- It iterate through the graphPoints to get the point to display in the graph.

startAgain method

- It links bring the user back to the mainActivity page, where the user can restart the tracking.

Convert

- It takes in parameter as long and add the time in terms of hr:min:s

Calculate File

This file listens to the location and perform the calculation.

addLocationListener method

- It checks whether permission is granted and takes the user location every 5 seconds.
- This method is connected to the onLocationChanged method.

stopLocationListener method

- This method stop the location updates and call methods to calculate the altitude, speed and distance.

OnLocationChaged Methods

- This methods takes the latitude, longitude, altitude and speed of the location and add it in the list.

locationList method

- It returns the list of location values.

calDistance Method

- It iterates through the list and calculate the total distance

altitudeMax method

- It return the maximum altitude.

altitudeMin method

- It return the minimum altitude.

pointDistances Method

- It takes two locations as input and measure the distance between them.

calculateSpeed method

- It calculates the speed using distance and time.

locationSpeed method

- It takes two location as input, and determine which one is maximum and which is minimum.

calAltitude method

- It find the maxAltitude, minAltitude.

calculateSpeed method

- It calculates the speed using distance and time.

graphPoints

- It takes the vales of the speed and store it in an array called myPoint.

GPSFile file

- It has as methods, writePath and readerGPX.

writePath method

- It takes four parameters as input the file details, the elements from Calculate, context and mainActivity.
- The writePath() has details of the structure of the gpx file and how details are saved in the header, distance, time, averageSpeed, minAltitude, maxAltitude and myPoints which has latitude, longitude and speed and footer as well. All these details are added to the file after checking if permission is granted. The extention of this file is .gpx

readerGPX method

- It takes the path of the file as input.
- Determine which are the values of each parameters while reading

MyGraphFile

Init method

- It initialises the paint colours and the side of the stroke for the graph.

graphDetail Method

- It takes as input, an array and a variable.
- It initislise the array passed in as the pointArray where I put all the values of speed.

graphDetail Method

- It takes one parameter as input which is an array and initialise the maximum speed which would be on the y-axis.

onDraw Method

- It takes as input parameters, the canvas
- It draws the rectangle where the graph would be plot
- It plots the graph
- Have values on each points

onMeasure method

- It measures the width and height of the canvas, to determine the width and height of the graph background.