
GPS based Location Tracking using Android

*Submitted in partial fulfillment of the requirements
for the degree of
Bachelor of Engineering*

by

Utkarsha S. Khachane

Roll No. 29

Priya R. Pandey

Roll No.41

Surbhi Varande

Roll No.55

Under the Supervision of

Prof.A.S.Kunte



DEPARTMENT OF INFORMATION TECHNOLOGY
KONKAN GYANPEETH COLLEGE OF ENGINEERING
KARJAT-410201

May 2021

Certificate

This is to certify that the project entitled **GPS Based Location Tracking Using Android** is a bonafide work of **Utkarsha S.Khachane (Roll No.29)**,**Priya R.Pandey(Roll no.41)**,**Surbhi Varande(Roll No.55)** submitted to the University of Mumbai in partial fulfillment of the requirement for the award of the degree of **Undergraduate** in **DEPARTMENT OF INFORMATION TECHNOLOGY**.

Supervisor/Guide

Prof.A.S.Kunte

Department of Information Technology

Head of Department

Dr.Anil W.Kale

Department of Information Technology

Principal

Dr. M.J.Lengare

Konkan Gyanpeeth College of Engineering

Project Report Approval for B.E.

This project report entitled **GPS Based Location Tracking Using Android** by **Utkarsha S.Khachane (Roll No.29),Priya R.Pandey (Roll NO.41),Surbhi Varande (Roll No.55)** is approved for the degree of **DEPARTMENT OF INFORMATION TECHNOLOGY**.

Examiners

1.....

2.....

Date.

Place.

Declaration

I declare that this written submission represents my ideas in my own words and where others' ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. I understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

Signature

(Utkarsha S.Khachane) Roll No.29

Signature

(Priya R.Pandey) Roll No.41

Signature

(Surbhi Varande) Roll No.55

Date.

Abstract

Every organization, whether big or small, has human resource challenges to overcome. Every organization has different employee management needs. In the employee tracking application admin can see employee task status and current location. This is designed to assist in strategic planning, and will help you ensure that your organization is equipped with the right level of human resources for your future goals. Also, for those busy executive who are always on the go, our application show map direction features, which will help the employee to complete their task at anytime. These systems will ultimately allow you to better manage resources .One of the main features in employee tracking application is current location tracking for employees. Effective time tracking mechanism saves both time and money for the organization.

Acknowledgements

We wish to express our profound and sincere gratitude to Prof. A.S.Kunte, Department Information Technology, KGCE, Karjat, who guided us into the intricacies of this project with matchless magnanimity. We thank Dr. Anil W. Kale, Head of the Dept. of Information Technology, KGCE Karjat and Dr. M. J. LENGARE, Principal, KGCE Karjat for extending their support during the Course of this investigation. We would be failing in our duty if we don't acknowledge the co-operation Rendered during various stages of image interpretation by. We are highly grateful to who evinced keen interest and invaluable support in the progress and successful completion of our project work. We are indebted to for their constant encouragement, co-operation and help. Words of Gratitude are not enough to describe the accommodation and fortitude which they have shown throughout my endeavor.

Contents

Certificate	i
Project Report Approval for BE	ii
Declaration	iii
Abstract	iv
Acknowledgements	v
Contents	vi
List of Figures	ix
List of Tables	x
Abbreviations	xi
1 INTRODUCTION	1
1.1 Introduction	1
1.2 Objectives	2
1.3 Purpose, Scope, and Applicability	2
1.3.1 Purpose	2
1.3.2 Scope	2
1.3.3 Applicability	3
1.4 Achievements	3
1.5 Organisation of Report	3
2 LITERATURE SURVEY	4
2.1 Research Papers	4

2.1.1	TITLE: An Android based Employee Tracking System AUTHOR: Etuk Enefiok A, Onwuachu Uzochukwu C PUBLICATION YEAR: 2016	4
2.1.2	TITLE: Employee Monitoring and Management System Using GPS and Android AUTHOR: Prashant Dhotre, Ganesh Rasal, Mamta Jha, Nihal Pawar PUBLICATION YEAR: 2017	5
2.1.3	TITLE: Employee Tracking System Using NFC AUTHOR: Awais Mulla , Uzair Ansari , Shadab Khan PUBLICATION YEAR: 2018	6
2.1.4	TITLE: Employee Monitoring and Tracking System AUTHOR: Sumit Kuldharan, Shubham Bhabad, Saurabh Shirsath, Supriya Borhade PUBLICATION YEAR: 2020	7
2.2	paper comparison	8
3	SURVEY OF TECHNOLOGY	9
3.1	Android Studio	9
3.2	GPS	10
3.3	phpMyAdmin	10
4	REQUIREMENTS AND ANALYSIS	12
4.1	Problem Definition	12
4.2	Requirements Specification	12
4.3	Planning and Scheduling	14
5	SYSTEM DESIGN	15
5.1	UseCase Diagram	15
5.2	Class Diagram	16
5.3	ER Diagram	16
5.4	Activity Diagram	17
5.5	Sequence Diagram	18
5.6	WireFrame Design	18
6	IMPLEMENTATION AND TESTING	19
6.1	Code	19
6.1.1	Android manifest	19
6.1.2	Assign Task	21
6.1.3	Task Complete	25
6.2	User interface design	31
6.3	Testing Approach	33
6.3.1	Unit Testing	34

6.3.2	Integrated Testing	34
6.4	Test Case table	35
7	RESULTS AND DISCUSSION	36
7.1	Conclusion	36
7.2	Future Scope Of The Project	36

List of Figures

4.1	Gantt chart	14
5.1	UseCase Diagram for Admin	15
5.2	UseCase Diagram for Employee	15
5.3	Class Diagram for Admin	16
5.4	class Diagram for Employee	16
5.5	ER Diagram for Admin	16
5.6	ER Diagram for Employee	16
5.7	Activity Diagram for Admin	17
5.8	Activity Diagram for Employee	17
5.9	Sequence Diagram for Admin	18
5.10	Sequence Diagram for Employee	18
5.11	WireFrame Design	18
6.1	Admin Menu	31
6.2	Employee Menu	32
6.3	Employee task	33

List of Tables

2.1	Paper Comparison	8
6.1	Test case table	35

Abbreviations

GPS **G**lobal **P**ositioning **S**ystem
AVD **A**ndroid **V**irtual **D**evice

Chapter 1

INTRODUCTION

1.1 Introduction

In the employee tracking application, there are two sides. One is the admin side and another one is the employee side. On the admin side, admin need to first login the application. If the admin login is successfully then only admin can use this application. After that the admin can add employee, see employee, add a task and see task features. In the add employee, the admin can add employee personal information. If the employee is added successfully then the admin can see all employees' information. In add task section, the admin can add task title, description, address, and assigned employee for a particular task. If the task is added successfully then the admin can see all task information. In the particular task section, the admin can see the current task status and the current employee location. The admin can see current employee location on Google map. If the task is completed then the admin can see task completed photo for a particular task. On the employee side, employee need to first login into the application. If the employee login is successfully then only employee can use this application. After that the employee can see the assigned task list assigned by the admin. The employee can see the task title, description, and address in the task list. If the task is completed then the employee needs to upload the task completed photo and update the task status. Employees can see address details on google map. Also, the employee can see the current location and destination location on google map with direction.

1.2 Objectives

- The main objective of the application tracks the task information of all the employees.
- The objective of the project is to create a technical solution that serves both the users and the admin. To develop a system that will be able to locate current position of the employee.
- To create an interface to google map and obtain data. Admin can assign task for a particular employee. Admin can see the task status of all the employees. If the task is completed then the admin can see the employee current location on google map.
- The employee can see the assigned task list assigned by the admin. The employee can see the task title, description, and address in the task list. If the task is completed then the employee needs to upload the task status. Employees can see address details on google map. Also, the employee can see the current location and destination location on google map with directions.

1.3 Purpose, Scope, and Applicability

Purpose, Scope and Applicability: The description of Purpose, Scope, and Applicability are given below:

1.3.1 Purpose

The proposed system is focused on the tracks the task information of all the employees. In this application there are two modules. One is admin module and another one is employee module.

1.3.2 Scope

- The scope of this project is to develop a tracking/monitoring android application using object GPS devices to ascertain its current location.

- The preparation of the environment need to build the system the testing of the system and the migration and the preparation of the data that will ultimately be used by system are equally important.
- The location based tracking systems is a real life problem solving application both the admin section and user section are designed in such a way that both are easily usable.
- This project is developed for location tracking of an individual person using various latest demanding tools and technology like Json, Java, AVD, etc.

1.3.3 Applicability

Every organization has different employee management needs. Using this application the admin can keep track of task information. If the task is complete then the admin can see the employee current location on google map. Also, the admin can see can task completed photo for a particular task. If the task is completed then the employee needs to upload the task completed photo and update the task status. Employees can see address details on google map. Also, the employee can see the current location and destination location on google map with direction.

1.4 Achievements

Achievements: Explain what knowledge you achieved after the completion of your work. What contributions has your project made to the chosen area? Goals achieved describe the degree to which the findings support the original objectives laid out by the project. The goals may be partially or fully achieved, or exceeded.

1.5 Organisation of Report

Organization of Report: Summarizing the remaining chapters of the project report, in effect, giving the reader an overview of what is to come in the project report.

Chapter 2

LITERATURE SURVEY

2.1 Research Papers

2.1.1 TITLE: An Android based Employee Tracking System

AUTHOR: Etuk Enefiok A, Onwuachu Uzochukwu C

PUBLICATION YEAR: 2016

In this paper, an employee tracking system based on Android operating system was developed. All the activities of the Employee will be monitored using this system. Scheduling information and time off requests are often considered part of personnel tracking; as this information will enable managers know when employees are expected to actually be in the office or other work areas. This system is really very helpful for the managers to monitor their employees through mobile phones. It was implemented using JAVA programming language, and the result was stored in SQLite database. An object-Oriented Analysis and design (OOAD) approach was adopted which consist of a well-planned iterative steps. Data was collected using document analysis and field Methods and the application of relevant analytical methods like bar-charts were used to interpret the facts collected. The developed system was able to increased productivity, reduction of cost, instant access to

employee attendance record. This application enables the managers to update the overall performance of the employees in their respective areas. This monitoring system is a revolutionary mobile application which uses Android OS for monitoring time attendance of employees. There is no need of manual entering of the daily activity details of each employee onto the database. It completely abolishes the traditional way of calculating performances. This will considerably reduce the paperwork and save ones precious time. This application makes good use of the recent mobile development technologies and thereby increases the overall performance of the employees, also has a substantial business value because it reduces hardware and maintenance cost and increases customer's satisfaction.

2.1.2 TITLE: Employee Monitoring and Management System Using GPS and Android

AUTHOR: Prashant Dhotre, Ganesh Rasal, Mamta Jha, Nihal Pawar

PUBLICATION YEAR: 2017

In this paper, we have implemented the new generation employee monitoring system and system features to meet the organization requirements. By using this system, it is possible for the manager to track an employee in the organization and calculate the behavior of the employee. In this application, it is also possible for the manager to know all the incoming calls, outgoing calls and text messages sent by an unknown person to the employee. Using telephony manager technique, the proposed employee monitoring system can get detailed information about mobility of employee by adjusting network.

2.1.3 TITLE: Employee Tracking System Using NFC**AUTHOR: Awais Mulla , Uzair Ansari , Shadab Khan****PUBLICATION YEAR: 2018**

This project is aimed at developing an NFC tracker system to monitor the location of every employee in the workplace that of importance to an organization. The system is hoped to help organization to increase the performance of the working environment among all the staff of the organization. Every staff will be provided with a smart ID with embedded NFC tag. Certain location at the workplace will be put an NFC reader to locate the staffs. This will ease the administration, manager or Principle to monitor their staff and to find their staff if they need the staff immediately. The location of the staff not be detected when employee go out from workplace and also waste the time when the administration, manager or bosses want their staff immediately. This project implemented is to ensure the employees current location effectively and to ensure the location of the staff whether the staff is in or out of workplace. This NFC Employee Tracker system contains three main elements in order to ensure that this project completes successfully, that is designing part, implementing part and deployment the devices (hardware and software); which are NFC reader, NFC tags, Graphical User Interface (GUI) and a database. In conclusion at the end is to build an effective system that automatically record and update location of the employee and to make the administration, manager or bosses to track the employee location in required immediately

2.1.4 TITLE: Employee Monitoring and Tracking System**AUTHOR: Sumit Kuldharan, Shubham Bhabad, Saurabh Shirsath, Supriya Borhade****PUBLICATION YEAR: 2020**

In this paper, we have actualized the new ERA employee monitoring system and system elements to meet the pre requirements. Utilizing this system it is feasible for the supervisor to track a employee in the association and it is additionally workable for the supervisor to know all the approaching calls, cordial calls and messages sent by obscure individual to the employee. Utilizing telephone manager technique, the proposed new ERA employee tracking system can adjust to different functionality of employee by changing system Every organization has different employee management needs to manage this employee means to map there work and provide services to the employee therefore, we design Employee Monitoring and Tracking System This system is a web Application where the user will be using the application will work with web application. This application is made for field work Employers. When the Admin will login to the system with user id and password .Admin can assign task to the worker as well as project manager and workers. Here using this web application worker or manager can see the assign task also they shows the status of complete work.it will helpful for tacking and monitoring of system.

2.2 paper comparison

Sr. No	Title	Author	Description
1.	An Android based Employee Tracking System (2016)	Etuk Enefiok A ,Onwuachu Uzochukwu C.	An employee tracking system based on Android operating system was developed. All the activities of the Employee will be monitored using this system
2.	Employee Monitoring and Management System Using GPS and Android (2017)	Prashant Dhotre, Ganesh Rasal, Mamta Jha, Nihal Pawar.	Using telephony manager technique, the proposed employee monitoring system can get detailed information about mobility of employee by adjusting network.
3.	Employee Tracking System Using NFC (2018)	Awais Mulla , Uzair Ansari , Shadab Khan.	The NFC Based Employee Tracking System could automatically detect the identities of the employees and will perform the Location Tracking.
4.	Employee Monitoring and Tracking System (2020)	Sumit Kuldharan, Shubham Bhabad, Saurabh Shirsath, Supriya Borhade.	This system is a web Application where the user will be using the application will work with web application. This application is made for field work Employers

TABLE 2.1: Paper Comparison

Chapter 3

SURVEY OF TECHNOLOGY

3.1 Android Studio

Android Studio is the official integrated development environment (IDE) for Google's Android operating system, built on JetBrains' IntelliJ IDEA software and designed specifically for Android development. It is available for download on Windows, macOS and Linux based operating systems. It is a replacement for the Eclipse Android Development Tools (ADT) as the primary IDE for native Android application development. Android Studio was announced on May 16, 2013 at the Google I/O conference. It was in early access preview stage starting from version 0.1 in May 2013, then entered beta stage starting from version 0.8 which was released in June 2014. The first stable build was released in December 2014, starting from version 1.0. The current stable version is 3.3, which was released in January 2019. Android Studio supports all the same programming languages of IntelliJ (and CLion) e.g. Java, C++, and more with extensions, such as Go; and Android Studio 3.0 or later supports Kotlin and "Java 7 language features and a subset of Java 8 language features that vary by platform version." External projects backport some Java 9 features. While IntelliJ that Android Studio is built on supports all released Java versions, and Java 12,

3.2 GPS

GPS, or the Global Positioning System, is a global navigation satellite system that provides location, velocity and time synchronization. GPS is everywhere. You can find GPS systems in your car, your smartphone and your watch. GPS helps you get where you are going, from point A to point B. its history and future advancements. GPS works through a technique called trilateration. Used to calculate location, velocity and elevation, trilateration collects signals from satellites to output location information. It is often mistaken for triangulation, which is used to measure angles, not distances. Satellites orbiting the earth send signals to be read and interpreted by a GPS device, situated on or near the earth's surface. To calculate location, a GPS device must be able to read the signal from at least four satellites. Each satellite in the network circles the earth twice a day, and each satellite sends a unique signal, orbital parameters and time. At any given moment, a GPS device can read the signals from six or more satellites. A single satellite broadcasts a microwave signal which is picked up by a GPS device and used to calculate the distance from the GPS device to the satellite. Since a GPS device only gives information about the distance from a satellite, a single satellite cannot provide much location information. Satellites do not give off information about angles, so the location of a GPS device could be anywhere on a sphere's surface area. When a satellite sends a signal, it creates a circle with a radius measured from the GPS device to the satellite.

3.3 phpMyAdmin

phpMyAdmin is an open-source software tool introduced on September 9, 1998, which is written in PHP. Basically, it is a third-party tool to manage the tables and data inside the database. phpMyAdmin supports various type of operations on MariaDB and MySQL. The main purpose of phpMyAdmin is to handle the administration of MySQL over the web. It is the most popular application for MySQL database management. We can create, update, drop, alter, delete, import, and export MySQL database tables by using this software. phpMyAdmin also supports a wide range of operation like managing databases, relations, tables, columns, indexes, permissions, and users, etc., on MySQL and MariaDB.

These operations can be performed via user interface, while we still have the ability to execute any SQL statement.phpMyAdmin is a GUI-based application which is used to manage MySQL database. We can manually create database and table and execute the query on them. It provides a web-based interface and can run on any server. Since it is web-based, so we can access it from any computer.

Chapter 4

REQUIREMENTS AND ANALYSIS

4.1 Problem Definition

Manual handling of employee information poses a number of challenges. The use of paper work in handling some of these processes could lead to human error, papers may end up in the wrong hands and not forgetting the fact that this is time consuming. A number of current systems lack employee self-service meaning employees are not able to access and manage their personal information directly without having to go through their HR departments or their managers. Another challenge is that multi-national companies will have all the employee information stored at the headquarters of the company making it difficult to access the employee information from remote places when needed at short notice. To overcome this problem, the employee tracking application is helpful to keep track of employee information and their related tasks.

4.2 Requirements Specification

Hardware and Software Requirements

Software Constraint

- Platform used:-Windows 10
- Android Studio Software
- Android Phone

Hardware Requirement

- Laptop or computer
- Processor:-Intel core i3
- RAM:-8GB

Front End

- Android Studio: - Android studio is used for developing the application. In android studio we can design multiple screens.

Back End

- phpMyAdmin:- phpMyAdmin is used for the database. In phpMyAdmin, we can create databases and tables. In phpMyAdmin, we can modify and delete the database and tables.

Operating System

- Windows Operating System

4.3 Planning and Scheduling

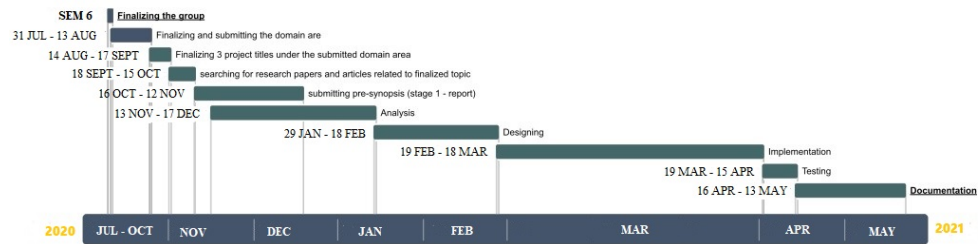


FIGURE 4.1: Gantt chart

Chapter 5

SYSTEM DESIGN

5.1 UseCase Diagram

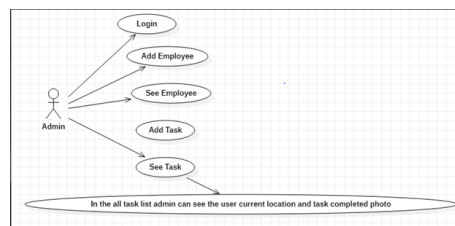


FIGURE 5.1: UseCase Diagram for Admin



FIGURE 5.2: UseCase Diagram for Employee

5.2 Class Diagram

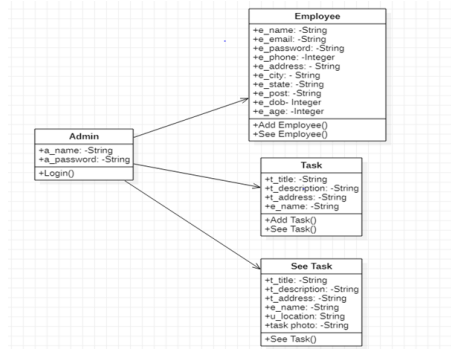


FIGURE 5.3: Class Diagram for Admin

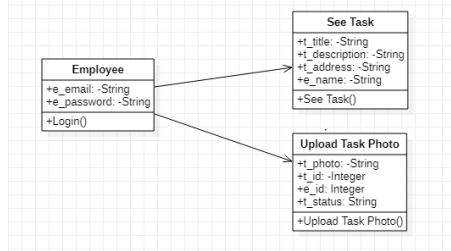


FIGURE 5.4: class Diagram for Employee

5.3 ER Diagram

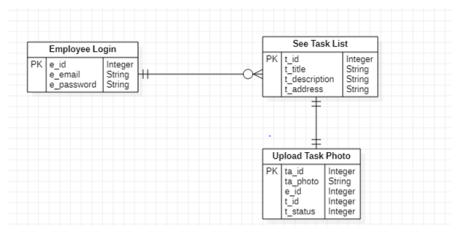


FIGURE 5.5: ER Diagram for Admin

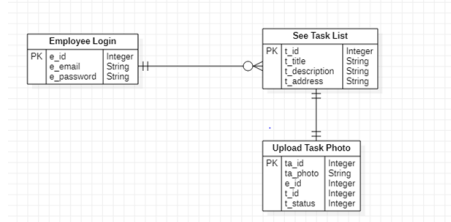


FIGURE 5.6: ER Diagram for Employee

5.4 Activity Diagram

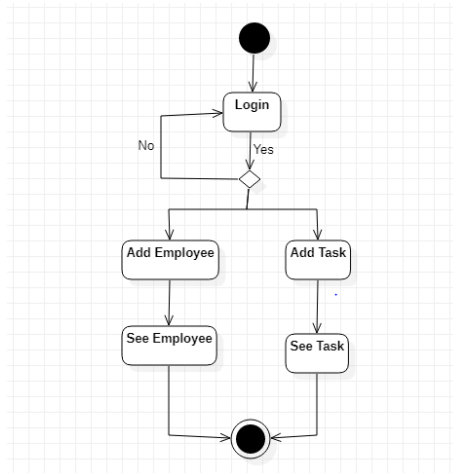


FIGURE 5.7: Activity Diagram for Admin

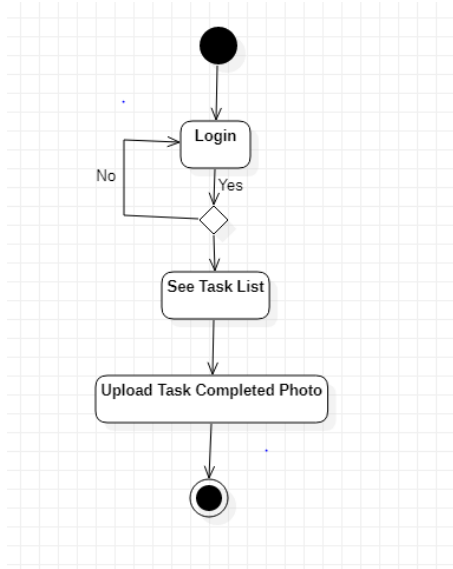


FIGURE 5.8: Activity Diagram for Employee

5.5 Sequence Diagram

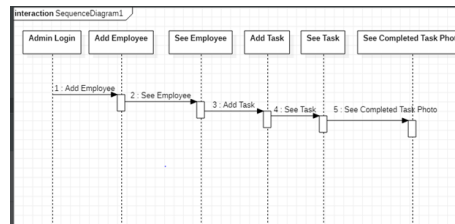


FIGURE 5.9: Sequence Diagram for Admin

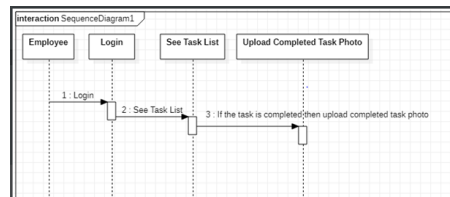


FIGURE 5.10: Sequence Diagram for Employee

5.6 WireFrame Design

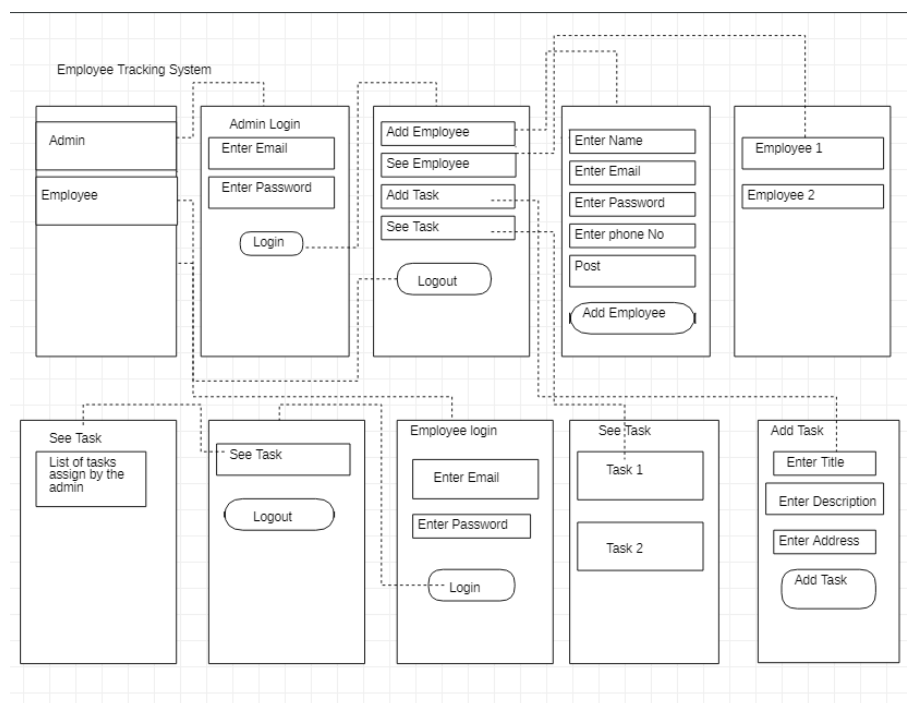


FIGURE 5.11: WireFrame Design

Chapter 6

IMPLEMENTATION AND TESTING

6.1 Code

6.1.1 Android manifest

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.college.employeetrackingapplication">

    <uses-permission android:name="android.permission.INTERNET" />
    <uses-permission android:name="android.permission.ACCESS_NETWORK_STATE" />
    <uses-permission android:name="android.permission.ACCESS_FINE_LOCATION" />

    <uses-sdk android:minSdkVersion="10" />

    <uses-permission android:name="android.permission.READ_EXTERNAL_STORAGE" />
    <uses-permission
        android:name="android.permission.WRITE_EXTERNAL_STORAGE"
        android:maxSdkVersion="18" />
    <uses-permission android:name="android.permission.CAMERA" />

    <uses-feature
        android:name="android.hardware.camera"
        android:required="true" />

</manifest>
```

```
<application
    android:allowBackup="true"
    android:icon="@mipmap/ic_launcher"
    android:label="@string/app_name"
    android:roundIcon="@mipmap/ic_launcher_round"
    android:supportsRtl="true"
    android:theme="@style/Theme.EmployeeTrackingApplication"
    android:usesCleartextTraffic="true">
    <activity android:name=".TaskCompleteActivity">

    </activity>
    <activity android:name=".TaskDetailsActivity" />
    <activity android:name=".AssignTaskActivity" />
    <activity android:name=".SeeTaskActivity" />
    <activity
        android:name=".AddTaskActivity"
        android:theme="@style/NoThemeAction" />
    <activity android:name=".SeeEmployeeActivity" />
    <activity
        android:name=".AddEmployeeActivity"
        android:theme="@style/NoThemeAction" />
    <activity android:name=".MainMenuActivity" />
    <activity android:name=".EmployeeMenuActivity" />
    <activity
        android:name=".EmployeeLoginActivity"
        android:theme="@style/NoTheme" />
    <activity android:name=".AdminMenuActivity" />
    <activity
        android:name=".AdminLoginActivity"
        android:theme="@style/NoTheme" />
    <activity
        android:name=".SplashScreenActivity"
        android:theme="@style/NoTheme">
        <intent-filter>
            <action android:name="android.intent.action.MAIN" />

            <category android:name="android.intent.category.LAUNCHER" />
        </intent-filter>
    </activity>

    <provider
        android:name="androidx.core.content.FileProvider"
        android:authorities="com.college.employeeetrackingapplication"
```



```
        android:exported="false"
        android:grantUriPermissions="true">
        <meta-data
            android:name="android.support.FILE_PROVIDER_PATHS"
            android:resource="@xml/fileprovider" />
    </provider>
</application>

</manifest>
```

6.1.2 Assign Task

```
package com.college.adapter;

import android.content.ActivityNotFoundException;
import android.content.Context;
import android.content.Intent;
import android.graphics.Paint;
import android.net.Uri;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.Button;
import android.widget.TextView;

import androidx.annotation.NonNull;
import androidx.recyclerview.widget.RecyclerView;

import com.college.employeetrackingapplication.R;
import com.college.employeetrackingapplication.TaskCompleteActivity;
import com.college.pojo.AssignTaskList;
import com.college.util.SharedPreference;

import java.util.ArrayList;

public class AssignTaskAdapter extends
RecyclerView.Adapter<AssignTaskAdapter.ViewHolder> {

    private Context context;
    private ArrayList<AssignTaskList> list;

    public AssignTaskAdapter(Context context, ArrayList<AssignTaskList> list) {
```

```

        this.context = context;
        this.list = list;
    }

    @NonNull
    @Override
    public AssignTaskAdapter.ViewHolder
        onCreateViewHolder(@NonNull ViewGroup parent, int viewType) {
        LayoutInflater inflater = LayoutInflater.from(context);
        View listItem = inflater.inflate(R.layout.custom_assign_task\
        , parent, false);
        listItem.setLayoutParams(new RecyclerView.LayoutParams
        (RecyclerView.LayoutParams.MATCH_PARENT, RecyclerView.LayoutParams.WRAP_CONTENT));
        return new AssignTaskAdapter.ViewHolder(listItem);
    }

    @Override
    public void onBindViewHolder(@NonNull
        AssignTaskAdapter.ViewHolder holder, int position) {
        AssignTaskList taskList=list.get(position);
        holder.tv_title.setText("Title: "+taskList.getT_title());
        String source= SharedPreferences.get("source");

        holder.tv_desc.setText("Description: "+taskList.getT_description());
        holder.tv_source.setText("Address: "+taskList.getT_address());
        holder.tv_source.setPaintFlags(holder.tv_source.getPaintFlags()
        | Paint.UNDERLINE_TEXT_FLAG);
        holder.tv_source.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                displayTrack(source,taskList.getT_address());
            }
        });
        holder.tv_time.setText("Time: "+taskList.getT_time());

        if (taskList.getT_status().equals("0")){
            holder.tv_status.setText("Status: Task Pending");
            holder.tv_status.setTextColor(
                context.getResources().getColor(R.color.blue));
        }else {
            holder.tv_status.setText("Status: Task Completed");
            holder.tv_status.setTextColor
            (context.getResources().getColor(R.color.green));
        }
    }

```

```

        if (taskList.getT_status().equals("0")){
            holder.button_task.setVisibility(View.VISIBLE);
        }else {
            holder.button_task.setVisibility(View.GONE);
        }

        holder.button_task.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent intent=new Intent(context, TaskCompleteActivity.class);
                intent.addFlags(Intent.FLAG_ACTIVITY_CLEAR_TASK);
                intent.putExtra("t_id",taskList.getT_id());
                context.startActivity(intent);
            }
        });
    }

    private void displayTrack(String source, String t_source) {
        try {
            Uri uri=Uri.parse("https://www.google.co.in/maps
                               /dir/"+source+"/"+t_source);
            Intent intent=new Intent(Intent.ACTION_VIEW,uri);
            intent.setPackage("com.google.android.apps.maps");
            intent.setFlags(Intent.FLAG_ACTIVITY_NEW_TASK);
            context.startActivity(intent);
        }catch (ActivityNotFoundException e){
            Uri uri=Uri.parse("https://play.google.com/store/
                               apps/details?id=com.google.android.apps.maps");
            Intent intent=new Intent(Intent.ACTION_VIEW,uri);
            intent.setFlags(Intent.FLAG_ACTIVITY_NEW_TASK);
            context.startActivity(intent);
        }
    }

    @Override
    public int getItemCount() {
        return list.size();
    }

    public class ViewHolder extends RecyclerView.ViewHolder {

        TextView tv_title,tv_desc,tv_source,tv_status,tv_time;

```

```
        Button button_task;

    public ViewHolder(@NonNull View itemView) {
        super(itemView);
        tv_title=itemView.findViewById(R.id.txt_title);
        tv_desc=itemView.findViewById(R.id.txt_desc);
        tv_source=itemView.findViewById(R.id.txt_address);
        tv_status=itemView.findViewById(R.id.txt_status);
        tv_time=itemView.findViewById(R.id.txt_time);
        button_task=itemView.findViewById(R.id.btn_complete_task);

    }
}
```

6.1.3 Task Complete

```
package com.college.employeeetrackingapplication;

import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
import androidx.core.content.FileProvider;

import android.Manifest;
import android.content.Context;
import android.content.Intent;
import android.content.pm.PackageManager;
import android.net.Uri;
import android.os.Build;
import android.os.Bundle;
import android.provider.MediaStore;
import android.util.Log;
import android.view.MenuItem;
import android.view.View;
import android.widget.Button;
import android.widget.ImageView;
import android.widget.Toast;

import com.college.util.AppController;
import com.college.util.Keys;
import com.college.util.SharedPreferences;

import net.gotev.uploadservice.BuildConfig;
import net.gotev.uploadservice.MultipartUploadRequest;
import net.gotev.uploadservice.ServerResponse;
import net.gotev.uploadservice.UploadInfo;
import net.gotev.uploadservice.UploadNotificationConfig;
import net.gotev.uploadservice.UploadService;
import net.gotev.uploadservice.UploadStatusDelegate;

import org.json.JSONException;
import org.json.JSONObject;

import java.io.File;
import java.text.SimpleDateFormat;
import java.util.Date;
import java.util.Locale;
import java.util.UUID;
```

```

public class TaskCompleteActivity extends AppCompatActivity {

    ImageView imageView;
    Button button_upload;
    File imageFile=null;
    ImageView imageView_task;
    private String selectedImagePath="",filename="",imageFilePath="";

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_task_complete);
        UploadService.NAMESPACE = BuildConfig.APPLICATION_ID;
        UploadService.NAMESPACE = "com.college.employeeetrackingapplication";
        SharedPreferences.initialize(getApplicationContext());
        AppController.initialize(getApplicationContext());
        String e_id=SharedPreferences.get("e_id");
        getSupportActionBar().setDisplayHomeAsUpEnabled(true);
        Intent i=getIntent();
        String t_id=i.getStringExtra("t_id");
        button_upload=findViewById(R.id.btn_upload);
        imageView_task=findViewById(R.id.img_task);
        imageView_task.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                if (check_permissions()){
                    openCameraIntent();
                }
            }
        });
        button_upload.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                try {
                    Log.i("nik",selectedImagePath);
                    String image= UUID.randomUUID().toString();
                    UploadNotificationConfig config =
                    new UploadNotificationConfig();
                    config.getCompleted().autoClear = true;
                    config.setTitleForAllStatuses("photo");
                    config.setIconForAllStatuses(R.mipmap.ic_launcher);
                    new MultipartUploadRequest
                        (getApplicationContext(),image, Keys.URL.UPLOAD_TASK)
                        .addFileToUpload(selectedImagePath,"ta_photo")
                        .addParameter("t_id",t_id)

```

```
.addParameter("e_id",e_id)
.setMaxRetries(5)
.setNotificationConfig(config)
.setDelegate(new UploadStatusDelegate() {
    @Override
    public void onProgress(Context context, UploadInfo uploadInfo) {
        Log.i("nik","on progress upload");
    }

    @Override
    public void onError(Context context, UploadInfo uploadInfo,
        ServerResponse serverResponse, Exception exception) {

        Log.i("nik","on error upload");
    }

    @Override
    public void onCompleted(Context context,
        UploadInfo uploadInfo, ServerResponse serverResponse) {

        Log.i("nik","on completed upload");
        Log.i("nik",serverResponse.getBodyAsString());
        try {
            JSONObject json=new JSONObject(serverResponse.getBodyAsString());
            if (json.getString("success").equals("1")){
                Toast.makeText(TaskCompleteActivity.this,
                    "Task Completed Successfully", Toast.LENGTH_SHORT).show();
                imageView_task.setImageResource(0);
                imageView_task.setImageResource(R.drawable.ic_photo);

            }else {
                Toast.makeText(TaskCompleteActivity.this,
                    "Unsuccessfully uploaded", Toast.LENGTH_SHORT).show();
            }
        }catch (JSONException e){
            e.printStackTrace();
        }
    }

    @Override
    public void onCancelled(Context context, UploadInfo uploadInfo) {
        Log.i("nik", "onCancelled");
    }
})

.startUpload();
```

```
        }catch (Exception e){
            e.printStackTrace();
        }
    }
});

}

public static boolean hasPermissions
(Context context, String... permissions) {
    if (context != null && permissions != null) {
        for (String permission : permissions) {
            if (ActivityCompat.checkSelfPermission(context, permission)
                != PackageManager.PERMISSION_GRANTED) {
                return false;
            }
        }
    }
    return true;
}

public boolean check_permissions() {

    String[] PERMISSIONS = {
        Manifest.permission.READ_EXTERNAL_STORAGE,
        Manifest.permission.WRITE_EXTERNAL_STORAGE,
        Manifest.permission.CAMERA
    };

    if (!hasPermissions(this, PERMISSIONS)) {
        if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.M) {
            requestPermissions(PERMISSIONS, 2);
        }
    } else {

        return true;
    }

    return false;
}

private void openCameraIntent() {
```



```

        Intent pictureIntent = new Intent(
            MediaStore.ACTION_IMAGE_CAPTURE);
        if (pictureIntent.resolveActivity(this.getPackageManager())
            != null) {
            //Create a file to store the image
            // File photoFile = null;
            //try {
            String timeStamp =
                new SimpleDateFormat("yyyyMMdd_HHmmss",
                    Locale.getDefault()).format(new Date());
            String imageFileName = "IMG_" + timeStamp + ".png";

            File filesDir = getApplicationContext().getFilesDir();
            imageFile = new File(filesDir, imageFileName);
            //      } catch (IOException ex) {
            //          // Error occurred while creating the File
            //
            //      }
            if (imageFile != null) {
                SharedPreferences.save("imagefilepath", imageFile.getAbsolutePath());
                Uri photoURI = FileProvider.getUriForFile
                    (this.getApplicationContext(), this.getPackageName(), imageFile);
                pictureIntent.putExtra(MediaStore.EXTRA_OUTPUT, photoURI);
                startActivityForResult(pictureIntent, 2);
            }
        }
    }

    @Override
    public void onRequestPermissionsResult(int requestCode,
        @NonNull String[] permissions, @NonNull int[] grantResults) {
        if (requestCode==2) {
            if (grantResults.length > 0) {
                openCameraIntent();
            }
        }
        super.onRequestPermissionsResult(requestCode, permissions, grantResults);
    }

    @Override
    public void onActivityResult(int requestCode, int resultCode, Intent data) {

```

```
        super.onActivityResult(requestCode, resultCode, data);
        if (requestCode == 2) {
            if (resultCode == RESULT_OK) {
                filename="";
                imageFilePath=SharedPreferences.get("imagefilepath");
                Uri selectedImage = Uri.parse(imageFilePath);
                imageView_task.setImageURI(selectedImage);
                selectedImagePath = selectedImage.getPath();
            }
        }

    }

    @Override
    public boolean onOptionsItemSelected(@NonNull MenuItem item) {
        switch (item.getItemId()) {
            case android.R.id.home:
                this.finish();
                return true;
        }
        return super.onOptionsItemSelected(item);
    }
}
```

6.2 User interface design

Following Pictures/User Interface Design can be further modified in implementation phase.

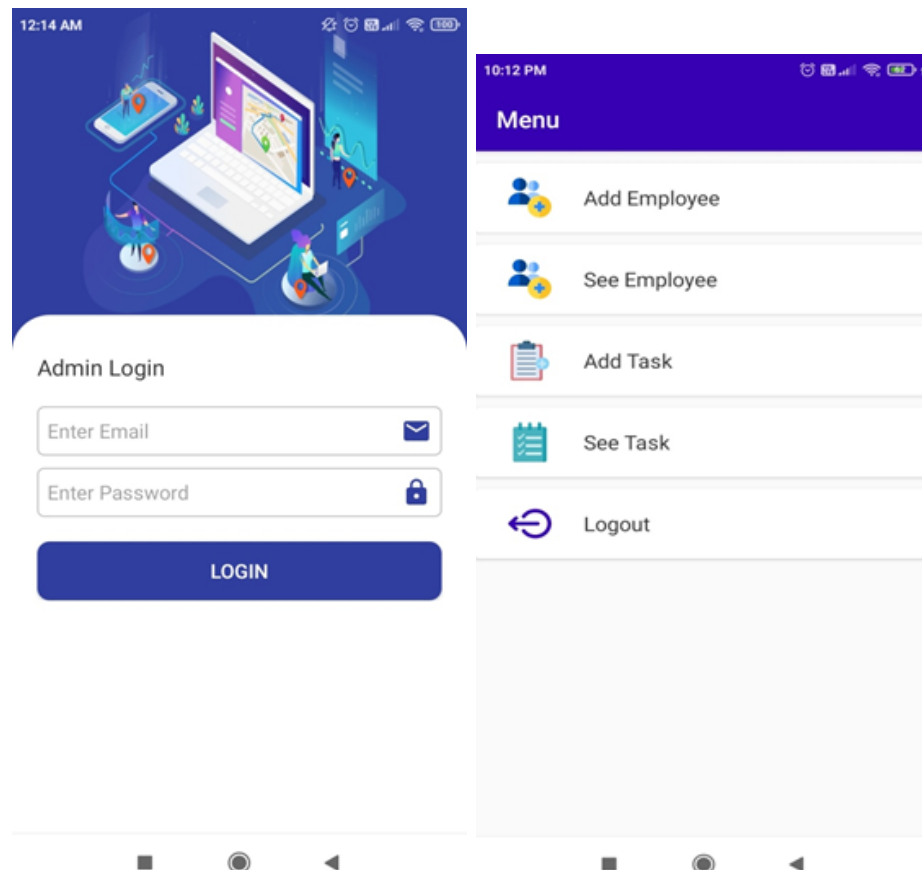


FIGURE 6.1: Admin Menu

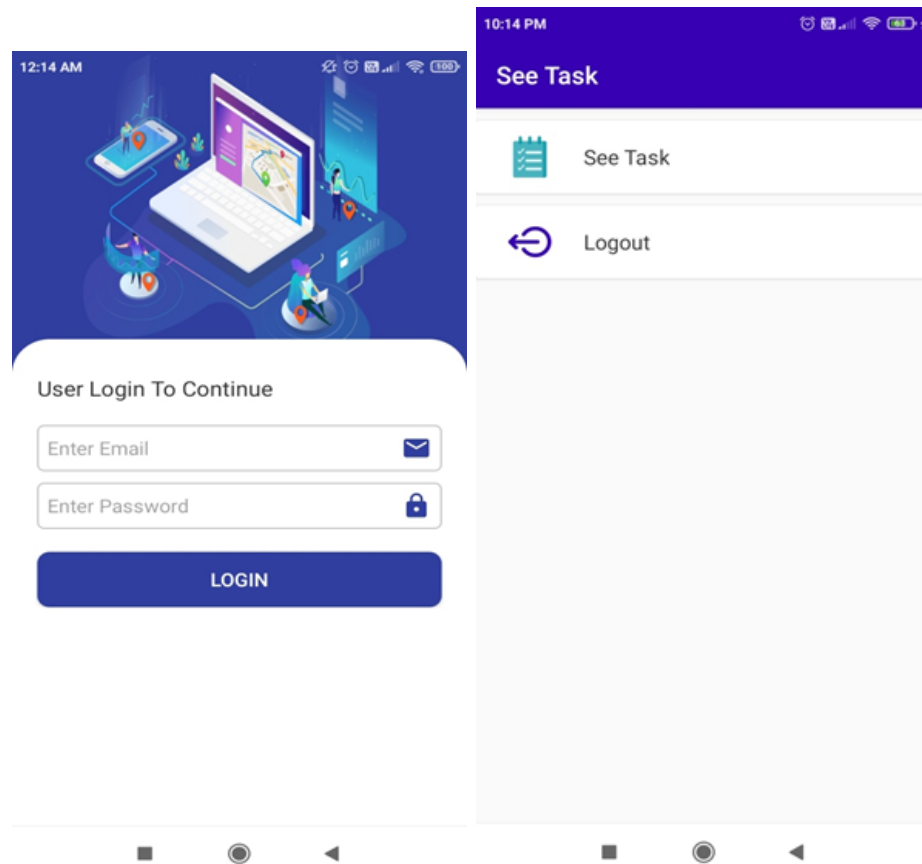


FIGURE 6.2: Employee Menu

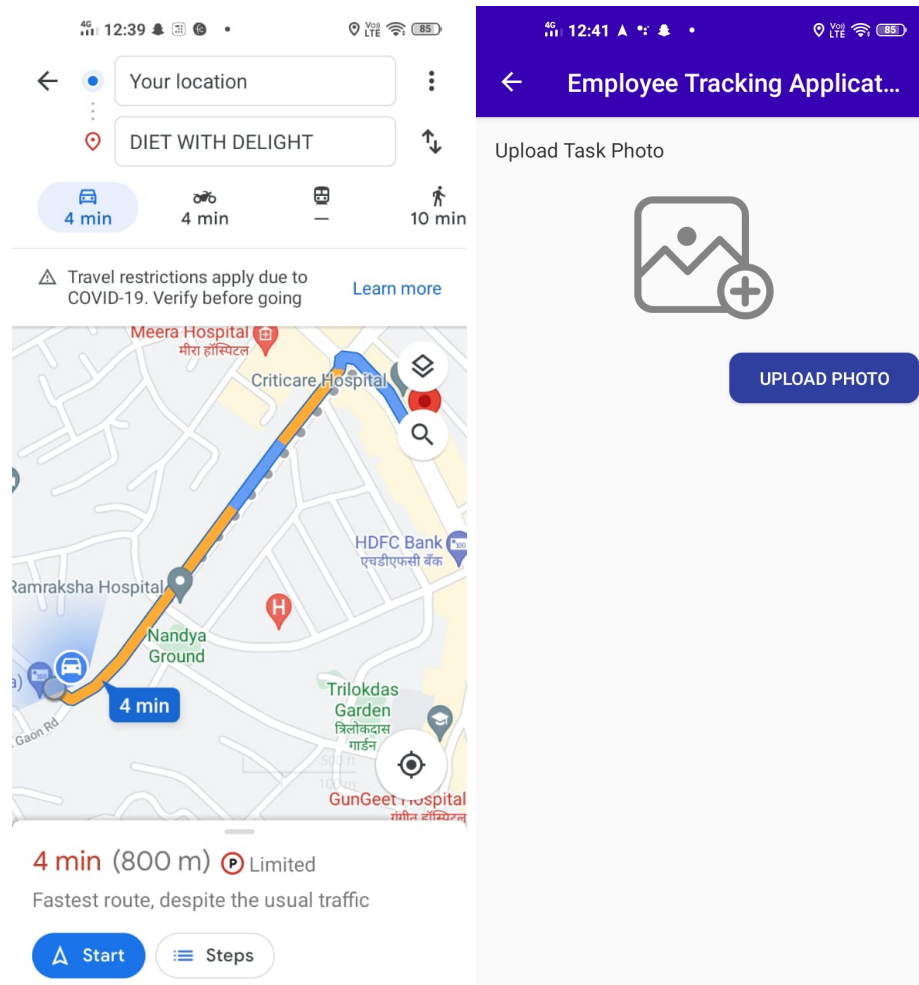


FIGURE 6.3: Employee task

6.3 Testing Approach

Testing Approach tells us how to test the entire project. There are two types of testing, unit testing where the basic components are tested with the basic codes to check if the components are running properly and are then modified, integration testing is where the all small single modules are connected together to perform a desired task at a time.

6.3.1 Unit Testing

Unit testing is the testing of an individual unit or group of related units. It falls under the class of white box testing. It is often done by the programmer to test that the unit he/she has implemented is producing expected output against given input. In this application actual functionality is task. In the admin section admin can assigned a task for a particular employee. Unit testing checks whether the task is successfully assigned for a particular employee or not. Unit-testing checks whether the admin can see current employee location on google map or not.

6.3.2 Integrated Testing

Integration testing is to check whether the application is working or not. In shop your need application every feature is check. After unit testing each module, all the modules are tested simultaneously. In employee tracking application the first activity is login screen. If the admin and employee login is successfully then only they can use this application. Integration testing checks whether the employee is added successfully or not. Integration testing checks whether the task is added successfully or not. Integration testing checks whether the admin can see current employee location on google map or not. Integration testing checks whether the employees can see address details on google map or not. Also, the integration testing checks whether the employee can see the current location and destination location on google map with direction.

6.4 Test Case table

Test Case ID	Test Case	Input	Expected Result
1	If the name, email, password, phone number, address, city, state, post, dob and age field is empty.	Name:- _____ Email :- _____ Password:- _____ Confirm Password: ____ Address:- _____ City:- _____ State:- _____ DOB:- _____ Age:- _____ Post:- _____	Please fill all the details.
2	If the user enter an email without @ sign	johngmail.com	Enter valid email.
3	If the user enter password is below 6 digit number	123456	Password must be 6 digits.
4	If the password and confirm password do no match	a) 123456 b) 12345	Please Confirm the password
5	If the dob is below 18	17	You are not eligible.
6	If the task title, description, address, employee name field is empty	Title :- _____ Description:- _____ Address:- _____ Employee Name:- _____	Please fill all the details.
7	If the task is complete then upload task completed photo	Capture Photo	Upload Photo

TABLE 6.1: Test case table

Chapter 7

RESULTS AND DISCUSSION

7.1 Conclusion

The main advantage and feature of the project is that its simplicity attracts a lot of users. Login and registration of the employee are done in this application for security purposes and to identify the employees. Admin can keep track of task information. If the task is complete then the admin can see the employee current location on google map. Also, the admin can see can task completed photo for a particular task. If the task is completed then the employee needs to upload the task completed photo and update the task status. Employees can see address details on google map. Also, the employee can see the current location and destination location on google map with direction.

7.2 Future Scope Of The Project

The application show assigns tasks in graph. Also the application pending task and completed task count. In further worked we can add task for a particular time period.

Bibliography

- [1] Awais Mulla¹, Uzair Ansari², S. K. (2018). Employee monitoring system using android smartphone. *International Research Journal of Engineering and Technology*.
- [2] Etuk Enefiok A, O. U. C. (2016). An android based employee tracking system. *International Journal of Computer Applications*.
- [3] Prof.Rachana Sabale, Pranjal pawar, S. S. A. K. P. K. (2017). Employee tracking system using nfc. *International Journal of Computer Science and Information Technologies*.
- [4] Sumit Kuldharan, Shubham Bhabad, S. S. S. B. (2020). Employee monitoring and tracking system. *International Journal of Computer Science and Information Technologies*.