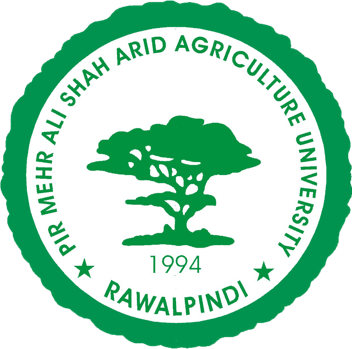
University Institute of Information Technology

PMAS-Arid Agriculture University, Rawalpindi



Project Proposal

For

**Family GPS Tracker**

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1-11-2021

revised version 1

Project ID: \_\_\_\_\_\_\_\_\_\_\_

(ID will be assigned by coordinator)

**Please select the appropriate category of your project**

**A-**Desktop Application/Information System **🞏** **B-**Problem Solving and AI **🞏**

**C-**Web Application/Web Application based Information System. **🞏 D-**Simulation & Modeling **🞏**

**E-**Smartphone Application **🞏 F-**Smartphone Game **🞏**

**G-**Image Processing **🞏** **H-**Networks **🞏**

**I-** Other: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **🞏**

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## Introduction

The project titled “Family GPS Tracker” is basically an Android Application which lets your family members stay linked all the time. This app tracks your family members location on the google map and logs their movements/activities throughout the day, ensuring that your loved ones are safe and don’t go to any dangerous places.

## Literature Review

The brief review and the short comings of the existing systems are given below :

**Find My Kids :**

This is a GPS location tracker app that is designed for child safety and parental control. This can be

done discreetly and track your child without them having to even know. You can connect a GPS

watch or install the app to track your child’s phone and location instantly.

**Short Comings :**

It has no option to view or download an entire location history of your family members.

**Life 360 Family Locator :**

Family Locator lets you stay linked to your family members during the day and will allow you to share status via GPS. You can install the Life360 Family Locator app on your phone, and invite

your family to join also so you can all stay connected.

**Short Comings :**

It has no option for immediately notifying your family members in case of emergency.

**Beacon Family Locator :**

This app is also a free GPS tracking, missing person and personal safety app.

**Short Comings :**

It doesn’t have a feature like smart alert in which you receive real time smart alerts when your loved ones arrive or leave home,school or any places you set.

## Problem Statement

The cases of missing children continue to rise which has been highly alarming to parents and apart from this, we as a family member feel worried whenever our loved ones are away from us therefore , we need something with which we can keep track of our family members or have information about their whereabouts.

There are already applications that provide GPS location tracking feature but the problem is those applications are mostly paid , our application will provide all those features free of cost.

## Problem Solution

It is a Centuries-old problem that children go missing but now we have internet and with the use of it, we can provide a virtual solution to this problem by developing an app which will make sure the safety of our loved ones by helping us in keeping track of their locations.

The proposed application will facilitate family member’s monitoring by providing Gps location tracking feature which includes live tracking , logging location history , draw safe zones and many more . Family linking would be done with simple steps to make the process convenient for user and tracking will be triggered after receiving a proper permission for it.Once the tracking is triggered , user will be able to draw safe zones and receive notification when family members leave or enter that zone.In short , This will make sure you are linked with your family even if you are busy.

## Advantages/Benefits of proposed system

List down the advantages and benefits of the system you are developing

* + Peace of mind for parents
  + Reassurance for children and women
  + Gives kid more freedom
  + Assurance of women/child safety

## Scope

The proposed system allows the user to have information about their loved ones. System asks the user for the registration .Once you are registered and logged in to the system , it will ask you for family linking and device connectivity which would done through QR scanning and password. On device Connection, user will be able to start monitoring his family members.System provides the user with many features .One of them is that user can set a virtual boundary for his family members and receive a notification whenever they breach that boundary.Location History is another feature which shows what activities your family members were involved in throughout the day.Apart from this, user can also download the entire location history.There is also an option of live tracking in which the currents position of your family members are displayed on google map. Last but not the least , system provides the user with panic button which immediately send notification containing your GPS coordinates to all your family members.

**Modules of the project:**

**Common Features :**

Signup Module

Login Module

Message Notify Module

Download Location History Module

Manage Family Members List

**Special Features :**

Device Connectivity

Live Tracking

Draw Safe Zones

**Location History Logging**

**Panic Button**

**Real Time Alerts**

**Notification History Logging**

**Explanation of a Module:**

**Device Connectivity Through QR Code :**

Its lets the user connect to their family member’s device through QR code scanning . The QR code is generated on family member’s phone after setting a proper password , user will then use that password along QR code scanning to make a connection with their family members device.

**Live Tracking :**

This feature lets user know where his family members are on real-time basis by showing their current location on google map.

**Draw Safe Zones :**

It is one of the special features of our app . it lets the user create a specific geographical boundary or set a virtual fence for their family members on a google map . User will immediately be notified whenever his family members breach the geo-fence.

**Location History :**

This feautres keeps the user informed about their family members movements throughout the day by

logging their activities every 1 minutes.

**Message Notify Module :**

This module allows family members to send notification to their tracker . This is useful when the

user has to notify its tracker about reaching or leaving a particular destination .User can use this

module incase of emergency aswell.

**Real Time Alerts :**

**With this module , you can receive real time smart alerts when your loved ones arrive home, school, or any places you set.**

**Notification Log :**

This module provides the family manager with a notification history log where it logs all the

notifications received by the family manager.

**Manage Family Members List :**

This module lets you manage a list of your family members you want to supervise .With this module,

you will be able to start or stop the supervision of your family members.

**Download Location History Module :**

This module enables user to download the entire location history in excel sheet.

**Panic Button :**

In emergency situations ,your family members can press the panic button to notify you immediately.

## Software Methodology

The software methodology used in this project is agile method which is a methodology for modeling and documenting software systems based on best practices. We chose this methodology because it ensures customer satisfication by rapid, continuous delivery of useful software.

Graphical user interface, application

Description automatically generated

## Tools and Technologies

**Example:**

|  |  |  |
| --- | --- | --- |
| **Tools**  **And**  **Technologie** | **Tools** | **Version** |
| MS Visual Studio | 2019 |
| MS SQL Server | 2019 |
| Figma | 93.4.0 |
| MS Word | 2013 |
| MS Power Point | 2013 |
| Android Studio | 8.5 |
| PostMan | 9.1.3 |
| **Technology** | **Version** |
| C#.Net | 5.0 |
| SQL | 2011 |
| Android Framework (Kotlin) | Api Level 31 |

## Concepts

**MVVM Architecture :**

It is an Architecture pattern which has three layers model , view and view model .This architecture helps us maintain seperations of concerns between the architecture components.we will be using this architecture while developing android application.

**Web Services Integeration :**

We will also be integerating web services with our app .Our application will be making calls to these REST Apis running on server and in response we will get a json object.We will use an open source library named as retrofit to implement this concept.

**Data Binding :**

Data Binding is concept of binding the UI compnents to data sources in your app . Android provides a support library called as data binding library which helps us in implementing this concept.

**Object Relational Mapping :**

**O**bject-**R**elational **M**apping (ORM) is a programming technique for converting data between relational

databases and objects in programming languages.This technique will be used through entity framework in C#

developing web services.

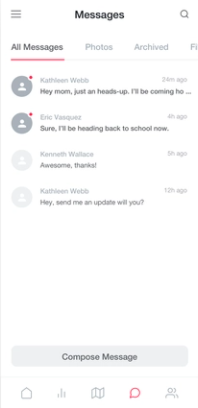
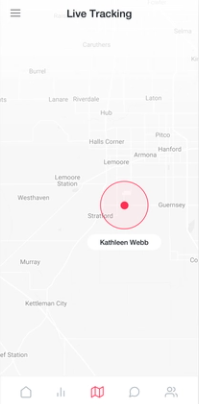
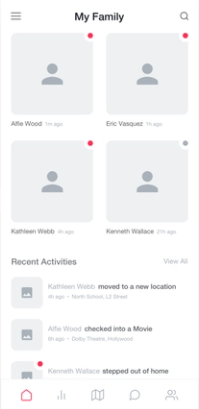
**Dependency Injection :**

Dependency injection is a technique that is used to **reduce the tight coupling** amongst the components in an application and promotes easier testability and maintainability. To implement this concept , we will use dagger which is an open source library based on android framework kotlin and java.

## Intended Users

This is App is useful for anyone in family.Parents can use it to keep a watch on their children and in the same way , teenagers can use it to stay connected with their old parent

## Mockups



## Timeline

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## Conclusion

The main purpose of this project is to ensure your loved one’s safety by fascilitating family monitoring.This app make will sure you are linked with your family members even if you are far away.

## References

https://developer.android.com/guide

<https://www.familyorbit.com/blog/best-family-tracking-apps/>

**Evaluation Page**

**Evaluator 1 Comments:**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Evaluator 2 Comments:**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Project Coordinator Comments**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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