

PROJECT PROPOSAL

CSE299

Faculty: RIH

Section: 7

Group: 6

Project Name: Family App

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# Abstract:

The purpose of this proposed application is to ease family peer-to-peer communication through powerful and effective solutions, all through an intuitive and user-friendly UI.

The application will be geared towards families who wish to communicate using the Internet but want more than just text-based messaging systems which they currently use to carry out communication.

Through a plethora of functionalities like location-based services, emergency distress call systems, and effective reminder systems, we will work to serve the modern family of thiscentury through this application.

# Introduction:

Communication remains to be one of the core elements that make a modern family functional. With the unprecedented growth of technology and the newfound ease of access to user-friendly electronic peripherals, every day, a noticeable number of messages are being exchanged by multiple members of a household for a myriad of reasons. This practice of digital communication is increasingly being adopted by families. From checking up on a member to asking another to run an errand – the advantages of the Internet are being well-utilized by all.

The messaging services of the social media platforms have served people well to communicate freely without major interruptions, but the people in question are those who have registered accounts on these platforms and know where is what. For the lesser-knowing public, of the features of these text applications, it can be a challenge to set up chat inboxes and communicate freely. This phenomenon is more so significant in third world countries where proper education still has places to reach to.

Digital communication also appears to be much more reliable as households today house multiple working members. As each clock in and out at different times of the day, it stands as a challenge to catch up, and more so to remember who needs to complete what task, who has a what appointment, and who is where.

Another notable phenomenon is the inexistence of stand-alone applications geared towards family communication. Household members are today only confined to text-based messaging for communicating with their loved ones. This is where our application, “Family App,” steps in. We aim to cater to people who wish to, through effective and powerful features behind the curtains of a smooth and intuitive UI, communicate with each other by not being solely bound to boring text messages.

Apart from enjoying the old school, tried and tested generic chat system, users can track each through location-based features after mutual consent for location sharing is given. This app aims to improve task assignments between members by digitizing this system. Users can create and assign specific tasks or chores for themselves or others – thus enabling all family members to be on the same page. We wish to bring further functionality to the application by creating a cloud storage service and introducing life-saving features like One-Tap-Alert systems and a One-Tap-Call feature to call emergency services.

# 3) Existing Solutions Review/Related Literature:

Although during our course of the research, we found no such application that comes with the said features in one single platform, we did find some apps with motivations somewhat similar to ours’.

1. **Bachao:**

A natively developed android app aimed to reduce rape incidents in our country by emergency response system. But our proposed system, in addition to that, does much more.

2. **Microsoft Family Safety:**

Developed by Microsoft, this system mostly focuses on parental control rather than family communication and management. Despite having many features similar to ours, it, however, doesn’t have any emergency response system and storage system.

3. **Google Family Link:**

In spite of having a similar name, it actually works quite differently than our proposed system. Google family mainly integrates different google services among the family members.

To continue our work and implement innovative features, we will need to work with various techs which are covered in section 4. We will have to properly know and will need to have a clear idea of android development, designing a database, establishing database connection, maintaining the database, working with Google Map API, and code testing.

# 4) Description:

Family App will be an android application developed in Flutter using the Dart programming language. A new user will need to create an account on the app and then join their family hub. Any user can create a hub and invite their family members to join. Each family hub will contain one member of Father, Mother, and numerous members in Children. Other members will be gradually added to the app.

The app’s homepage will be a glance at family members online and tasks to do. A menu navigation drawer on the left will redirect to chat, location, To-Do, and other features. A floating action button will be present on the homepage on the bottom right for the emergency alert button and other options. For location sharing, each family member will be able to see each other’s location. For privacy reasons, there will be a setting for individuals to turn it on/off.

## 4.1) Project Features:

The initial features for Family App are listed below. Note: The project is not limited to these features. More will be added along the journey.

* Instant chat messaging.
* To-Do tasks.
* Live location sharing.
* Last active status, with location and timestamps.
* Hub for storing prominent family documents.
* One-Tap-Alert system to notify all members during the wake of an emergency.
* Equipped with Essential City-Services’ database, suggested responding to Distress Calls of other members effectively.

## 4.2) Technical Details:

* The app will be created using Flutter. For development in Flutter, Android Studio and VS Code IDE will be used.
* Android Studio virtual device will be used for the emulator.
* For the database, Firebase will be used, a product of Google.
* The instant chat feature will be implemented using Firebase Firestore. The details of this feature and its products are still in discussion.
* The live location sharing and tracking feature will be implemented using the Flutter Location package. The source for the map will be the Google Maps plugin for Flutter. Family members’ locations will be retrieved and presented on Google Maps using an icon.
* The To-Do task feature will simply be implemented as a shareable document of checklist to keep track of what is done and what is remaining.
* The database will store the last timestamp for a user when he was online. This will be presented as the last online status for a checkup.
* For the One-tap-alert feature, the system will be implemented using an observer pattern to push notifications to members’ devices.
* For communication amongst project members, Slack will be used.
* The project codebase will be hosted and version-controlled in GitHub.

List of software required:

1. VS Code
2. Android Studio
3. Flutter Environment
4. Google Maps Flutter Package
5. Flutter Location Package

All the required software is open source and will be downloaded freely.

# 5) Roles & Responsibilities:

We know that most of the time, it’s not possible to implement a feature by an individual entirely. We need assistance. So, we plan to collectively work on everything; however, primarily, we will try to work in the following manner:

|  |  |  |
| --- | --- | --- |
| **Ifad** | **Kamran** | **Hasib** |
| Chat | Live location sharing | Doc storage hub |
| To-Do tasks | Last active status | Alert system |
| Database design | Front-end design | Backend co-ordination & emergency services |

# 6) Timeline:

We will try to follow the following timeline:

|  |  |
| --- | --- |
| **Task** | **Timeline** |
| Idea | 27.10.21-03.11.21 |
| Presentation | 03.11.21-10.11.21 |
| Proposal | 10.11.21-17.11.21 |
| Database | 17.11.21-24.11.21 |
| Chat | 24.11.21-01.12.21 |
| To-Do tasks | 01.12.21-08.12.21 |
| Live location sharing | 08.12.21-15.12.21 |
| Last active status | 15.12.21-22.12.21 |
| Doc storage hub | 22.12.21-29.12.21 |
| Alert and emergency services | 29.12.21-05.01.22 |
| Report presentation and delivery | 05.01.22-12.01.22 |

# 7) Conclusion:

As the unprecedented growth of globalization continues to spread out its golden light through technology and powerful systems merging billions of users within a common net, it lays bare to many unexplored, untapped areas of attention - many of which surpass from being a want and pose to be a need instead.

One of many such areas of potential remains to be security and niche-specific security and communication.

Existing mainstream social platforms are still not offering the intuitive environment that a household needs for their daily, task-filled family routines. The waters are still not accommodating enough for the children because of the non-existing safety net in these platforms. Such a similar sentiment can be true for those parents who are using their smartphones for the very first time - or are less-versed in the knowledge of the graces of technology. Finding the right options at the right time to use the right features can feel like a breeze - which, unfortunately, the said platforms fail to yet deliver. The biggest challenge that we envision in developing this project will be coming up with a good software design, including an efficient and friendly user interface. A good design early on will make the development process easier by allowing team members to be assigned well-defined areas of responsibility. Reduced coupling in the design will allow for better software verification and improve flexibility in case implementation has to be modified later. The main product challenges will be to create an effective algorithm for generating schedules, making sure Google integration works properly and that the database is secure and reliable.

We hope Family App delivers what it promises to families - an application posing as a simple, intuitive, user-friendly, safe-for-all platform, whilst behind the curtains, working with industry-standard frameworks, and effective, strong use of technology.

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