A clock with roman numerals

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**Emergency Application**

**Icon

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**(Help Me)**

**Graduation Project**



**JULY 12, 2021**

**By: Ahmed Mohamed Fathi Sayed**

**Supervised By: DR. Ahmed Ezzat Labib**

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**Abstract**

The Emergency application is helpful application that allow users to get help when they need by notify his emergency contacts and the nearby users from his location, this notification allow the other users (emergency contacts and nearby users) by clicking on notification that allow them to view alive location and give the help that that user needs.

This application will help the people to feel safe outside that they can get help anytime and anywhere, it also makes the people make sure that their families and people they know are safe and can get notice if anything happen.

People are usually uncomfortable to walk alone during the night or in suspicious places. Back in the day, women used to dial their local emergency number and keep their finger hovering over the “Call” button every time they had to cross a park, a narrow alley, or an unknown neighborhood. There is enough violence in the world to make us all wary of crimes against ourselves or our loved ones.

**Contents**

1. **Introduction ……………………………………………….1**
2. **Literature Survey and Market……………………………4**
   1. Android Application Development and its History…4
   2. Technology Using in Project………………………..7
   3. Examples Of Similar Apps………………………….10
3. **Methodology………………………………………….….....13**
   1. Modeling Technical………………………………………...13
   2. Software Requirements Specification………………………16
   3. UML Diagrams……………………………………………...20
   4. Explain the Application……………………………………..29
4. **Implementation and Testing……………………………....36**
   1. Implementation issues……………………….……….36
   2. Testing Methods……………………………………...38
   3. further work…………………………………………..41
5. **Conclusion…………………………………………………...42**
6. **References……………………………………………..…….44**

# Chapter 1

# Introduction

There are many situations that people want to get help from others, people can use their phone to call someone to get help but call in some situations will not be helpful because maybe the one they call not respond that call or that one who want help can’t communicate or have time to wait the respond for example in a treating and kidnapping situations, sometime it was an emergency help so this application will help the users to get an immediately response.

The idea of this Emergency app is help user to get an emergency help when they need it by this application, they can send a notification with their location to ask other users for help, there are two types of user can receive that notification emergency contacts that user can add them to application and the nearby users who are in range 1 kilometer near the user who call for help, if there is something happen with this people that want help after they call for help or if something happened to their phone the nearby and emergency contacts can reach the last location of that user whose call for help.

Typically, everyone should have the Help Me App on their mobile phone. Whether you are a teenager, an adult, a senior, a sports enthusiast or an outdoor adventurist, every member of your family having the Help Me App will give everyone peace-of-mind knowing that Help from a friend or Strangers one is just a click away.

**Technology can save our lives.**

We know that technology is more than a business enabler and enhancer; it can also be a life saver. While we invest in the development of new software products for corporate clients in different markets, we also address the global individuals who rely on technology to achieve better life quality standards. Besides our telecom and mobile solutions, we always keep in mind that people also need high quality products to live better lives.

The question we had in mind was this: if technology can track and improve peoples’ health, if it can increase their quality of life, if it can save them time, effort and money, can it also save their life? What can we do to offer people all over the world a more secure way of living?

We all use smartphones and are familiar with iOS and Android platforms. If such operating systems allow users to find a cab or order pizza, can they also become veritable bodyguards? We found the answer in the fact that Android comes together with incorporated GPS services, allowing thus easy localization of a person, more than finding a correct address or reaching a destination. The importance of this seemingly mundane Android feature led us to the creation of the Emergency application – an app which allows a person in distress to signal for help.

People are usually uncomfortable to walk alone during the night or in suspicious places. Back in the day, women used to dial their local emergency number and keep their finger hovering over the “Call” button every time they had to cross a park, a narrow alley or an unknown neighborhood. There is enough violence in the world to make us all wary of crimes against ourselves or our loved ones.

* **Problems**

1. how I get help in emergency situations like treating and kidnapping situations.
2. How to get help when car broke down in road.
3. how parents make sure that their kids safe outside and get their attention when they need help.
4. Want help in health issues.

* **Solution**

This application serve all of this problems and more by just click the button, after clicked that button its send an notification for all users in range 1 kilometer from the user who want the help, and send also an notification to the emergency contacts that user can add to app like parents or any other known people that user want to notify them when he need help, So whatever the situation the user in he can get help.

# Chapter 2

# Literature Survey and Market

* 1. **Android Application Development and its History:**
* Android was founded in Palo Alto, California, in October 2003 by Andy Rubin, Rich Miner, Nick Sears, and Chris White. Rubin described the Android project as "tremendous potential in developing smarter mobile devices that are more aware of its owner's location and preferences". The early intentions of the company were to develop an advanced operating system for digital cameras, and this was the basis of its pitch to investors in April 2004.The company then decided that the market for cameras was not large enough for its goals, and by five months later it had diverted its efforts and was pitching Android as a handset operating system that would rival Symbian and Microsoft Windows Mobile.
* In July 2005, Google acquired Android Inc. for at least $50 million. Its key employees, including Rubin, Miner and White, joined Google as part of the acquisition. Not much was known about the secretive Android at the time, with the company having provided few details other than that it was making software for mobile phones. At Google, the team led by Rubin developed a mobile device platform powered by the Linux kernel. Google marketed the platform to handset makers and carriers on the promise of providing a flexible, upgradeable system. Google had "lined up a series of hardware components and software partners and signaled to carriers that it was open to various degrees of cooperation".
* On November 5, 2007, the Open Handset Alliance, a consortium of technology companies including Google, device manufacturers such as HTC, Motorola and Samsung, wireless carriers such as Sprint and T-Mobile, and chipset makers such as Qualcomm and Texas Instruments, unveiled itself, with a goal to develop "the first truly open and comprehensive platform for mobile devices". Within a year, the Open Handset Alliance faced two other open-source competitors, the Symbian Foundation and the Limo Foundation, the latter also developing a Linux-based mobile operating system like

Google. In September 2007, InformationWeek covered an Evalueserve study reporting that Google had filed several patent applications around mobile telephony.

* In 2010, Google launched its Nexus series of devices, a lineup in which Google partnered with different device manufacturers to produce new devices and introduce new Android versions. The series was described as having "played a pivotal role in Android's history by introducing new software iterations and hardware standards across the board” and became known for its "bloat-free" software with "timely ... updates". At its developer conference in May 2013, Google announced a special version of the Samsung Galaxy S4, where, instead of using Samsung's own Android customization, the phone rang "stock Android" and was promised to receive new system updates fast. The device would become the start of the Google Play edition program, and was followed by other devices, including the HTC One Google Play edition, and Moto G Google Play edition. In 2015, Ars Technical wrote that "Earlier this week, the last of the Google Play edition Android phones in Google's online storefront were listed as "no longer available for sale" and that "Now they are all gone, and it looks a whole lot like the program has wrapped up".
* In June 2014, Google announced Android One, a set of "hardware reference models" that would "allow [device makers] to easily create high-quality phones at low costs", designed for consumers in developing countries. In September, Google announced the first set of Android One phones for release in India. However, recode reported in June 2015 that the project was "a disappointment", citing "reluctant consumers and manufacturing partners" and "misfires from the search company that has never quite cracked hardware”. Plans to relaunch Android One surfaced in August 2015, with Africa announced as the next location for the program a week later. A report from The Information in January 2017 stated that Google is expanding its low-cost Android One program into the United States, although The Verge notes that the company will presumably not produce the actual devices itself.
* Businesses today are turning to mobile apps to expand their strategies to tap a higher customer base. With over [86.8% share](https://www.idc.com/promo/smartphone-market-share/os), Android OS dominates the mobile app development market. Leveraging the benefits of Android application development is, therefore, a necessity for organizations. It is expected to surge even further in the coming years.
* Android app development offers tremendous strategic and operational benefits. Therefore, regardless of their size, businesses are leveraging [android app development](https://www.rishabhsoft.com/mobile/android-development) to grow their business and improve their revenues.
* The importance of mobile phones in our everyday life and activities is undeniably unending. This is so because there is ongoing tremendous transformation in that mobile phones are no longer the ordinary communication device it used to be. It has become the colossal point of attention for individuals and businesses alike, courtesy of the various incredible features and opportunities that mobile phones offer.
* We use mobile applications for every entrepreneur needs to compete with creativity to capture the attention of more potential customers. It is because the ultimate goal of any business is to generate revenue. Further, the evolution of the Android development platform offers entrepreneurs with a cost-effective and scalable opportunity to develop apps.
* The cumulative progress of mobile technology, the availability and access to high-speed internet and the remarkable communicative interface in these devices results into a whole level of new and innovative experience mobile computing. This is made possible through the development of mobile applications (mobile apps).
* Android mobile applications have influenced most of the industries as part of the digital revolution today. Even though iOS is a popular platform, listed below are some of the reasons why android development is by far the best and a leading platform for businesses.
  1. **Technology Using in Project:**

After designing the application, we decide that using java language in android studio.

Java is used to create application software for mobile devices. Currently, Java ME is used for building applications for small devices, and Java is a programming language for Google Android application development.

**Features of java**

* **Object-Oriented -**Java supports the features of object-oriented programming. Its object model is simple and easy to expand.
* **Platform independent -**C and C++ are platform dependency languages hence the application programs written in one Operating system cannot run in any other Operating system, but in platform independence language like Java application programs written in one Operating system can be able to run on any Operating system.
* **Simple -**Java has included many features of C / C ++, which makes it easy to understand.
* **Secure -**Java provides a wide range of protection from viruses and malicious programs.  It ensures that there will be no damage and no security will be broken.
* **Portable -**Java provides us with the concept of portability. Running the same program with Java on different platforms is possible.
* **Robust -**During the development of the program, it helps us to find possible mistakes as soon as possible.
* **Multi-threaded -**The multithreading programming feature in Java allows you to write a program that performs several different tasks simultaneously.
* **Distributed -**Java is designed for distributed Internet environments as it manages the TCP/IP protocol.

**Firebase** is a mobile and web application development platform developed by Firebase, Inc. in 2011, then acquired by Google in 2014. As of March 2020, the Firebase platform has 19 products, which are used by more than 1.5 million apps. Firebase can run inside another app, without any notification or direct notice to the consumer, and can be used to track glitches and clicks. That help us to arrive the application for all user's devices which be android OS or apple devices (IOS) , and lunch the application on play store & app store .

**Firebase Realtime Database**

Store and sync data with our NoSQL cloud database. Data is synced across all clients in realtime and remains available when your app goes offline.

The Firebase Realtime Database is a cloud-hosted database. Data is stored as JSON and synchronized in realtime to every connected client. When you build cross-platform apps with our iOS, Android, and JavaScript SDKs, all your clients share one Realtime Database instance and automatically receive updates with the newest data.

The Firebase Realtime Database lets you build rich, collaborative applications by allowing secure access to the database directly from client-side code. Data is persisted locally, and even while offline, realtime events continue to fire, giving the end user a responsive experience. When the device regains connection, the Realtime Database synchronizes the local data changes with the remote updates that occurred while the client was offline, merging any conflicts automatically.

The Realtime Database provides a flexible, expression-based rules language, called Firebase Realtime Database Security Rules, to define how your data should be structured and when data can be read from or written to. When integrated with Firebase Authentication, developers can define who has access to what data, and how they can access it.

The Realtime Database is a NoSQL database and as such has different optimizations and functionality compared to a relational database. The Realtime Database API is designed to only allow operations that can be executed quickly. This enables you to build a great realtime experience that can serve millions of users without compromising on responsiveness. Because of this, it is important to think about how users need to access your data and then structure it accordingly.

* 1. **Examples Of Similar Apps:**

1. **Graphical user interface, application

   Description automatically generatedRed Panic Button**

**Projected by:** Ultimate Communication Software LTD‏

-You can find more information about the app from here: https://www.redpanicbutton.com/

The application enables users to push a central button and allow immediate contact with various emergency services, providing instant details of your location.

**SMS Panic Message**

By pushing the Red Button, the application will send your current position and address (in the form of a Google Maps link) to all the numbers found in your panic contact list, not only a single person as the case with standard SMS. Such list can be a true-life saver in difficult.

**The Address Message**

People who receive a panic message from you should be able to respond as quickly and as efficiently as possible. Therefore, the app also sends your latest acquired location address to them.

1. Graphical user interface, application

   Description automatically generated**Call For Help**

**Projected by:** Computer Software Solutions LLC‏

**Application in:** https://play.google.com/store/apps/details?id=com.css.android.helpMe.myapplication&hl=ar&gl=US

help your contacts track you, whenever you feel unsafe. Call emergency contacts with just a single tap on your phone. Call for Help is designed to help you in times of distress and make you feel safe whenever you feel otherwise.

Let your emergency contacts track you whenever you feel unsafe.

App features:

emergency contact and whenever in distress just one tap and your location would be sent to them.

• Record Videos and Images- Record videos, audio and capture images in any stressful and unsafe environment and send it right away to your close ones.

Map

Description automatically generated

• Search nearby Facilities- Search for nearby police stations, hospitals and fire stations or emergency doctor all with a single tap and connect to them.

• Emergency Tracking- Let your emergency contacts track you whenever you feel unsafe.

1. **WhatsApp and other social applications**

**Projected by:** WhatsApp LLC

Graphical user interface, text, application, chat or text message

Description automatically generatedApplication in: https://play.google.com/store/apps/details?id=com.whatsapp&hl=ar&gl=US

In this kind of apps allow u to share your location with specific people or with group of people u know.

In the previous application and in most of that kind of application that depend on asking for help just from the people u know like your contacts, and if something happen to the user who want help like the mobile is broken down or something the contacts will lose the contact with that person.

So in my application I solve some of that problems, I make it easy to the user to ask for help not just from his contacts but also from any nearby users around him, also if the connection lost from the user who want the help the users who receives the emergency notification can access the last location of that user, and also work in application UI/UX Design to make the application more flexible and easy to use.

# Chapter 3

# Methodology

**3.1 Modeling technique:**

In this application we use a waterfall methodology to get successful application:

The waterfall model is a classical model used in system development life cycle to create a system with a linear and sequential approach. It is termed as waterfall because the model develops systematically from one phase to another in a downward fashion. This model is divided into different phases and the output of one phase is used as the input of the next phase. Every phase has to be completed before the next phase starts and there is no overlapping of the phases.

The waterfall model is a project management methodology that has at least five to seven phases that follow in strict linear order, where a phase cannot begin until the previous phase has been completed.

Diagram

Description automatically generated

# **Requirements:**

The key aspect of waterfall is that all our requirements are gathered at the beginning of the project, allowing every other phase to be planned without further customer involvement until the product is complete. It is assumed that all requirements can be gathered at this phase.

# **Design:**

The design phase is best broken up into logical design and physical design subphases. The logical design subphase is when possible solutions are brainstormed and theorized. The physical design subphase is when those theoretical ideas and schemas are made into concrete specifications.

# **Implementation:**

The implementation phase is when programmers assimilate the requirements and specifications from the previous phases and produce actual code.

# **Verification:**

This phase is when the users review the application to make sure that it meets the requirements laid out at the beginning of the project. This is done by releasing a completed application to the users.

# **Maintenance:**

The users is regularly using the application during the maintenance phase, discovering bugs, inadequate features and other errors that occurred during production. The production team applies these fixes as necessary until the users is satisfied.

* 1. **Software Requirements Specification**
* **Functional Requirement:**

**A Functional Requirement (FR)** is a description of the service that the software must offer. It describes a software system or its component. A function is nothing but inputs to the software system, its behavior, and outputs. It can be a calculation, data manipulation, business process, user interaction, or any other specific functionality which defines what function a system is likely to perform. Functional Requirements are also called Functional Specification.

**How the functional requirement for us:**

* Help us to check whether the application is providing all the functionalities that were mentioned in the functional requirement of that application.
* A functional requirement document helps us to define the functionality of a system or one of its subsystems.
* Functional requirements along with requirement analysis help identify missing requirements. They help clearly define the expected system. service and behavior.
* Errors caught in the Functional requirement gathering stage are the cheapest to fix.
* Support user goals, tasks, or activities

**Types of Functional Requirements:**

* + Transaction Handling
  + Business Rules
  + Certification Requirements
  + Reporting Requirements
  + Administrative functions
  + Authorization levels
  + Audit Tracking
  + External Interfaces
  + Historical Data management
  + Legal and Regulatory Requirements
* **Nonfunctional requirements:**

a non-functional requirement is a specification that describes the system’s operation capabilities and constraints that enhance its functionality. These may be speed, security, reliability, etc. We have already covered different types of software requirements, but this time we will focus on non-functional ones, and how to approach and document them.

**The advantages of nonfunctional requirement that make it useful for us to create the project:**

* **Performance and scalability**

Performance defines how fast a software system, or its piece responds to certain users’ actions under certain workload. Scalability assesses the highest workloads under which the system will still meet the performance requirements.

* **Portability and compatibility**

Portability defines how a system, or its element can be launched on one environment or another. It usually includes hardware, software, or other usage platform specification. Put simply. Compatibility defines how a system can co-exist with another system in the same environment.

* **Reliability, Availability, Maintainability**
* **Reliability**. This quality attribute specifies how likely the system, or its element would run without a failure for a given period of time under predefined conditions.
* **Maintainability**. Maintainability defines the time required for a solution or its component to be fixed, changed to increase performance or other qualities, or adapted to a changing environment. Like reliability. Availability. And finally, availability describes how likely the system is accessible for a user at a given point in time. While it can be expressed as a probability percentage.
* **Security**

This non-functional requirement assures that all data inside the system or its part will be protected against malware attacks or unauthorized access.

* **Localization**

This attribute defines how well a system, or its element falls in line with the context of the local market-to-be. The context includes local languages, laws, currencies, cultures, spellings, and other aspects.

* **Usability**

Usability is yet another classical nonfunctional requirement that addresses a simple question: How hard is it to use the application? Defining these requirements is not as easy as it seems. There are many types of usability criteria.

* 1. **UML Diagrams**
* **Use Case Diagrams**

1. Main Use Case Diagram

In this diagram show what any user can do in the application by using it.

Diagram

Description automatically generated

1. Login Use Case Diagram

In this diagram show us what the user goes throw after download the application

There are two types of users registered and new user so the new one register and make an account on application and the registered log in with his data.

Diagram

Description automatically generated

1. In Action Use Case Diagram

In action case there are two types of the users, the user who ask for help after he clicked action button, he send notification to emergency contacts and nearby users and its open live location with his location, the other users receive an notification that allow them to view the live location of the user who want help.

Diagram

Description automatically generated

1. Change Data Use Case Diagram

This diagram shows the data that user cane change in profile screen.

Diagram

Description automatically generated

* **Activities Diagrams**

1. Login Activity

In this diagram show us what the user goes throw while login the application or register for the first time.

Diagram

Description automatically generated

1. Call for Help Activity.

In this activity show how the user call for emergency help and what happen with him till he closes this active.

Diagram

Description automatically generated

1. Emergency Contacts and Nearby Users Activity

This activity show that happens and what the other users can do after a user call for help.

Diagram

Description automatically generated

1. Add and Remove Contacts Activity

This activity shows the action that the user do when adding or remove emergency contacts in profile screen.

Diagram

Description automatically generated

1. Change User Data Activity

If the user wants to change his data (Name and Phone number) in profile screen this activity shows us the actions to do that.

Diagram

Description automatically generated

* 1. **Explain the Application.**

Now we will explain the application and how it works using screen shots from it and show what happen using it.

* **Application APK.**
  + A close-up of a green box

    Description automatically generated with low confidencein this picture we see the icon and the name of the application
  + when click app icon for the first time its open Start Screen.
* **Logo, company name

  Description automatically generatedStart Screen.**
* We see in this screen the name of the application and the icon.
* The login button for register users who already have account in the application.
* The Register button for the user who first time use the application and did not have account yet.
* **Graphical user interface, text, application, email

  Description automatically generatedRegister Screen**

In this screen user can create new account by enter the required data in the fields.

* Username: the name of the user
* Phone number: the phone number must have 11 number.
* E-mail: the e-mail must be in e-mail form.
* Password: the password must be at least 8 numbers or characters.

The user must be sure he fills all the fields to can register, after he sure he click register button to open the main screen in the application.

* **A picture containing graphical user interface

  Description automatically generatedLogin Screen.**
* If the user already has an account, he clicks login button from Start Screen to open login Screen.
* He must enter his E-mail and Password to login to the application and make sure it was correct.
* After he clicked the login button its open the Main Screen of the application.
* **Main Screen**
* Graphical user interface, application

  Description automatically generatedIn Main Screen bar we found the name of the application in the top left.
* In the right side there are the menu button to logout from the application.
* The profile logo it takes the user to profile screen.
* The main screen formed as tabbed screen we can switch between the call help screen and Notification Screen.
* **Diagram

  Description automatically generatedCall Help Tab:**
* Contain a large and centered Button which the user clicked it when he wants to call for help.
* When the user clicks that button, it send a notification to his emergency contacts and the nearby users in range 1kilometer.
* **Notification Tab:**
* Contain a list with the notifications that user receives from the other users.
* Timeline

  Description automatically generated with low confidenceEach item in notifications list formed as it contains name of the user who call for help, the date and time when he called for the help and have a text said the “Need your help in this location”.
* When the user clicked the notification, it takes him to map screen and mark his location in the map and show him the locations of the user who call for help.
* The notification keeps the last location of the user who needs the help even he canceled the service to help his emergency contacts access his location in some situations.
* **Profile Screen**
* This page contains some of the user data like his name and his phone number.
* Graphical user interface

  Description automatically generated with medium confidenceThe user can change this data by enter the new data in the fields require the new data then click the buttons of change for each filed.
* In the bottom of the page, we can see the Emergency contact list that the user can add them in the list by adding their phone numbers and clicked the ADD button.
* After the user clicked the ADD button the application check if that user uses the application or not (check the real time database if that user even that user exist in data base), if this number do not belong to any user that the app will not add him to list.
* In clicking the back button in the bar, it takes the user to Main Screen.
* **Graphical user interface, application

  Description automatically generatedMap Screen**

There are two situations of the map Screen:

* **The Map Screen of the user who call for help.**

That opened when the user clicks the call for help button in main screen.

It shows the location of that user live location with red marker and update that location every 10s and if the user moves more than 5 meters it replace the old marker wiz black circle marker its help to track the user movement.

* Application, calendar

  Description automatically generated**The Map Screen of the Views users (emergency contacts and nearby users who received the notification).**

in viewer map screen the other users can see the live location of the user who call for help and his movement, and the viewers location shown as purple marker in the map to know their location and differentiate between his location and caller location.

As shown in these pictures:

A picture containing application

Description automatically generatedGraphical user interface, application

Description automatically generated with medium confidence

* Graphical user interface, application

  Description automatically generatedWhile using the application u notice that when the users open map whoever the users the helper or the user who need the help there is a notification that the user can’t delete it let the user know that the tracking is enabled

When user clicked the notification, it cancels the tracking service.

* Graphical user interface, text, application

  Description automatically generatedNotification that the emergency contacts and nearby users receives.

# Chapter 4

# Implementation and Testing

* 1. Implementation issues

1. **Software Fragmentation:** There are many Android OS versions which developers find hard to keep up with when it comes to app development. It is impractical to focus only on the most recent Android version as not all users may have upgraded to the most recent OS.
2. **Hardware Fragmentation:** This becomes a big Android app development challenge since there are nearly 170+ devices running the OS. Each device has different features with respect to keyboard forms, screen size, camera buttons, etc., making it a development nightmare.
3. **Development:** I need to figure out how to develop my app as quickly as possible, but still ensure my app is of the highest quality (in terms of both performance and design).
4. **Distribution:** I need to decide which platform i want to target, with the two biggest players right now being iOS and Android.
5. **Marketing / Analytics:** I should track performance of my app to improve it, and marketing is also needed to get my app "out there" and keep selling even when it is no longer new.
6. **Development Technology**

In Choosing technology to develop the application it takes too long to search and know about the deferent technology and choose the better technology that will help me to make the application work better and more efficiency

1. **Device compatibility**

There are many types of android visions. So, while develop the application we make the limits of SDK that help us to run the application in as many as we can cover the different versions of the android.

1. **Features of the App**

It takes a lot of time to figure the features of the application that it makes the application more useful for the user and help him to find the help he will need by using the application.

1. **Build Application with Great UI/UX**

we tried our best to make the UI/UX Design for the application more flexible and easier to use by different kind of users in different skills, so we design more than one UI/UX and choose the perfect one to apply it to the application.

**Testing**

Performing thorough quality assurance (QA) testing during the mobile app development process makes applications stable, usable, and secure. To ensure comprehensive QA testing of your app, you first need to prepare test cases that address all aspects of app testing.

Like how use cases drive the process of mobile app development, test cases drive mobile app testing. Test cases are for performing test steps, recording testing results for software quality evaluation, and tracking fixes for retesting. A best practice approach is involving your QA team in the Analysis and Design stages. The familiarity with my app’s functional requirements and objectives will help produce accurate test cases.

* 1. ***Testing Methods***

My app undergoes the following testing methods, to deliver a quality mobility solution.

* ***User Experience Testing***

A critical step in mobile app testing is to ensure that the final implementation matches the user experience created by the app design team. Visuals, workflow, and interactivity of my app are what will give my end users first-hand impression of my app. Make sure that my app employs consistent fonts, style treatments, color scheme, padding between data, icon design, and navigation. Ensuring that my app matches the original design guidelines will have a direct impact on its user adoption!

* ***Functional Testing***

The accuracy of my mobile app functionality is critical to its success. It’s difficult to predict every end user’s behavior and usage scenario.

The functionality of my app should be tested by as many users to cover as many potential testing conditions as possible. I might be surprised to catch bugs when two different users test the same feature but get varied outcomes. For example, both users can fill out the same form, but they both might enter different data—which could lead to discovering a defect.

The purpose of functional testing is to ensure that users can use my app’s features and functionality without any issues. It can be broken down further into system testing (the app working as a whole), and unit testing (individual functions of the app operating correctly).

* ***Performance Testing***

There are many quantitative criteria to use for measuring the performance of my app.

* How well is my app responding to the user requests?
* How fast are the app’s screens loading?
* Is my app draining the phone battery or causing memory leaks?
* Does my app leverage network bandwidth efficiently?
* Is the size of my app bigger than what it should be?

Even when my app passes basic performance criteria, test the app, API, and backend for load by simulating the maximum number of concurrent users. The app should be able to handle the load and perform well even when usage spikes.

* ***Device and Platform Testing***

On average, new mobile devices enter the market every 12 months with new hardware, firmware, and design. Mobile operating systems are updated every few months.

Multiple mobile device manufacturers like Samsung, LG, HTC, Motorola use the Android platform, but they customize the platform for their mobile devices (since Android is open source). The devices come in different sizes and shapes.

During the testing phase, there are many ways for distributing your app development builds to the testers. The most common approach with Android apps via email or Over The Air (OTA) installs.

* ***UI / UX Design***

The purpose of an app’s design is to deliver seamless and effortless user experiences with a polished look.

The success of a mobile app is determined based on how well users are adopting and benefiting from all its features. The goal for mobile UI/UX Design is creating excellent user experiences making my app interactive, intuitive, and user-friendly. While polished UI designs will help with early adoption, my app must have intuitive user experiences to keep app users engaged.

* 1. ***further work***
* We plan that in the further work in the application it will contain a new feature, this feature will be a more screen that user can post his issue whatever technology issue or medical issue, etc.

In this post the user can get help with communication with other users in a comment section in this post, and we can add a category to those posts for users who wants to help in specific kind of posts for example if user can help in technical posts, he can filter the posts to show only the post for people who want technical support.

* This screen will contain a spinner list which u can filter the posts.
* It will be containing a button to add a new post.
* List of posts that sorted by date from new to old.
* The post item will contain the name of user who need help, the title of the post and the body to explain his issue.
* The post activity will take the title and body from the user and post it in list.
* The user can edit and delete his post.
* We can also make a combination between our app and AI technology by adding a bot chat service that user can ask for any kind of help that the bot can get him an optimal and most popular solutions.
* We can also add a private tracking mode for parents to track their kids outside any time and make sure they are safe out there.

That will make our application more useful for the user and it will not be just a call for emergency application, but it also will be helpful for the users.

# Chapter 6

# Conclusion

In conclusion, we write a brief about the Emergency Application.

* This application developed by android studio using java language.
* We used firebase services like realtime database to save the data of the users.
* The idea of the application it helps people who want help to get help anywhere by one click.
* The application has a simple UI / UX Design that allow any kind of user in different ages and limited skills.
* We design the main screen with flexible design using tabbed activities that contain the main screen with the emergency button and the notification screen which we can switch between them.
* This application contains a start screen, login screen and register screen for new users.
* By clicking the button called (call for help) in main screen it sends a notification contain the username and live location to other users in range 1 kilometer and emergency contacts.
* The user also can add or delete an emergency contact in profile screen, these contacts also receive a notification when that user use the main button wherever they are.
* Users can change some of the data from the profile screen like his name or his phone number.
* When any user open map screen whoever the user who want help, emergency contacts and other users there is a notification in notification bar told the user that tracking is enabled.
* The users can stop tracking by clicked tracking notification or by click the exit button in the bar in map screen.
* The user can logout from the app by choose logout from menu in the bar in main screen.
* Finally, I hope you like it and get help from it.

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