

**BS Computer Science
TicToc Courier**



Submitted By

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EXORDIUM

In the name of Allah, the Compassionate, the Merciful. Praise be to Allah, Lord of Creation,
The Compassionate, the Merciful, King of Judgment-day!

DEDICATION

This thesis/report is wholeheartedly dedicated to our beloved parents, who have been our source of inspiration and gave us strength when we thought of giving up, who continually provide their moral, spiritual, emotional, and financial support especially. To our brothers, sisters, relatives, mentor, friends, and classmates who shared their words of advice and encouragement to finish this study throughout the degree. And our teachers and our supervisor Dr. Sajid Khan who helped us in building project ideas and helped us settings logic of the application and most importantly we got kick-starting help from Sir Javed Abbasi and sir Nisar in android development. Also, we dedicated this piece of learning to the Almighty God, thank you for the guidance, strength, power of the mind, protection, and skills and for giving us a healthy life. All of these, we offer to you.

ACRONYMS AND ABBRIVIATIONS

POB: Project objective

FE: Feature

AD: Assumptions and dependencies

HI: Hardware Interface

SI: Software Interface

CI: Communication Interface

ABSTRACT

People travel to different places some for fun, some for business purposes and some of them for study motive. But there are some people who don't want to travel for some reasons (i.e. business meetings, saving time, long travel distance) but have some things to be transported to a city. In case, **TicToc Courier** has come up with a solution. Our idea is to provide a communication platform between *Sender* and *Traveler*. However, senders can place several requests while the traveler will be able to accept those requests as per their easiness. Furthermore, a traveler will accept the requests then their cellphone numbers will be exchanged between each other. And after that, it's up to the users who want to make a phone call or message. They will be accountable for further process (i.e. manual testing by verifying CNIC and other information as well).

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CHAPTER 01

1.1 Background

In our society, people often send their items through courier services. These Courier services provide services at a great cost and take days to deliver the items depending upon the destination. In existing Courier Services, people must pay them more than a reasonable amount of money even for a single sheet of paper (CNIC, bank check, etc.). Sender/Receiver need to take out time from their busy schedule to the offices for their request that they want to proceed.

On the contrary, people don't get their stuff on time. whenever their van got full than the process starts to a destination that requires at least one day. Besides, these courier services do not work during holidays, events, strikes and some other scenarios that are highly demandable in such a circumstance. These sorts of problems cause serious situations which effect the wastage of time and money.

“TicToc Courier” is the solution to these problems. It is a mobile app through which users can easily send/receive their belongings quickly and easily with a reasonable amount of money.

The Sender can post over the app when he/she is willing to send the item from city A to city B.

Travelers who are willing to pick the item can contact the sender.

Registered users will use this app and will get and provide the services as per the need.

1.2 Introduction

TicToc Courier is an idea through which people can earn money while helping other people send/receive items without putting much effort. This app will help people to send/receive their items to their destination city without putting much money and effort. There will be two kinds of users of **TicToc Courier**:

- 1) Sender
- 2) Traveler

If a sender wants to send the item to city B from city A, he/she will place a request with some detail (item name, phone No, address, etc.) On the other hand, a traveler that wants to pick the item that must be reached at sender's desired destination from city A to city B. Traveler will have information about all N number of senders and will have the liberty to choose any one among them.

In addition, the sender sets a reasonable amount of money on his/her item request, the sender will have more chances of his item being sent through a particular traveler.

Furthermore, there will be plenty of requests on the traveler's panel so we provide the feasibility for them to filter out the place he/she wants to go, the search will be provided according to the city traveler desires, along with respective requests. In the meantime, Registered users can avail of the services and provide it too by exchanging contact numbers. Once they exchange contacts with each other they will be responsible for further process.

In the meantime, when a traveler will filter out the request and will choose anyone of them, the sender will get the message through our app by the traveler that “He/She wants to pick his/her item with its detail and locations.” When the sender agrees with the traveler and allows him/her to proceed further if both parties agree then the process will start. In case, the item is damaged during the travelling process, TicToc Courier will not be responsible for that damage.

1.3 Problem statement

Existing Courier Services charge more than enough money even for the single sheet of paper (CNIC, bank Check, etc.) which takes at least one day or more even within the same cities or different cities as well.

On the contrary, people don’t get their stuff by the time of the day they desire. We need to get rid of these sorts of problems. For example (unable to get admission in university because documents couldn’t reach on time etc.) which effects the wastage of time and money.

1.4 Proposed Solution

“**TicToc Courier**” is the solution to the mentioned problems. It is a mobile app through which users can help other people (i.e. users of the app) by helping them transporting their items/belongings from one place to another. People can post over the app when they are likely to go from city A to city B, interested people will have an opportunity to earn some money in exchange for picking other people’s stuff and delivering to a particular destination. Our app will prove to be more workable in some scenarios where other services can’t entertain civilians, such as ‘Eid’, strike, holidays, etc.

Possible scenarios could be:

- 1) If a person is traveling for instance (In a Daewoo bus) toward Karachi he suddenly
- 2) receives a call from home (which is in Hyderabad) that he has forgotten his keys and he can’t go to the TCS or any other courier service for sending his item.
- 3) There is some occasion where all the courier services are off. Such as festivals, strikes, public holidays.
- 4) If a person is getting admission to a university and he forgets the transcript and another important document, and the day is the last day for your admission. You cannot go for courier services, but they will not provide you the document on the same day. So, you can post a request in our app so that the traveler (Might be going through an airplane) could deliver documents quickly.

1.5 Project Objectives

POB-1 Accessibility of services in their hands of the user (mobile app) easily, where other transferring services won’t be available in that time of need.

POB-2 Reasonable amount of money even for a single sheet of paper, documents, etc.

POB-3 Relatively faster than other services, same city and out of the city if travelers are available.

1.6 Project Scope

TicToc Courier is very helpful for people who don’t get services in time of need such as strike holidays, or in moments when the item worth is not this much that they could spend handsome amount of money (i.e. keychain, keys, or any little item) to have it transferred toward a particular place (via courier service companies like leopard, TCS, OCS), they could use our app.

FE-1 Application allows the user to register by his/her contact number and security code will be sent to the device for being able to use the app.

FE-2 Application allows the traveler to select a request among multiple senders request for sending an item.

FE-3 Registered users can earn money alongside their journey.

FE-4 Application shows the details of requests one made, for example, contact no, item, price, and location.

1.7 Not in Scope

Appointment management or price management is not concerned with this project, people may contact each other through chat, mail or number to set their meeting time or price for the service which will be decided by time temporal according to the user's needs. Heavy and expensive items could not be transported through our app.

1.8 Assumptions and Dependencies

AD-1 Users should able to use the mobile and app.

AD-2 Device must be connected to the internet to avail of the services of this app.

AD-3 The users should know the English language.

CHAPTER 02

2. METHODOLOGY AND IMPLEMENTATION

2.1 Introduction

This chapter involves the details of the methodology and implementation steps that have been followed for the development of TicToc Courier. It explores the different activities that are concerned with its development throughout the SDLC (Software Development Life Cycle) and activities that will be used.

2.2 Methodology

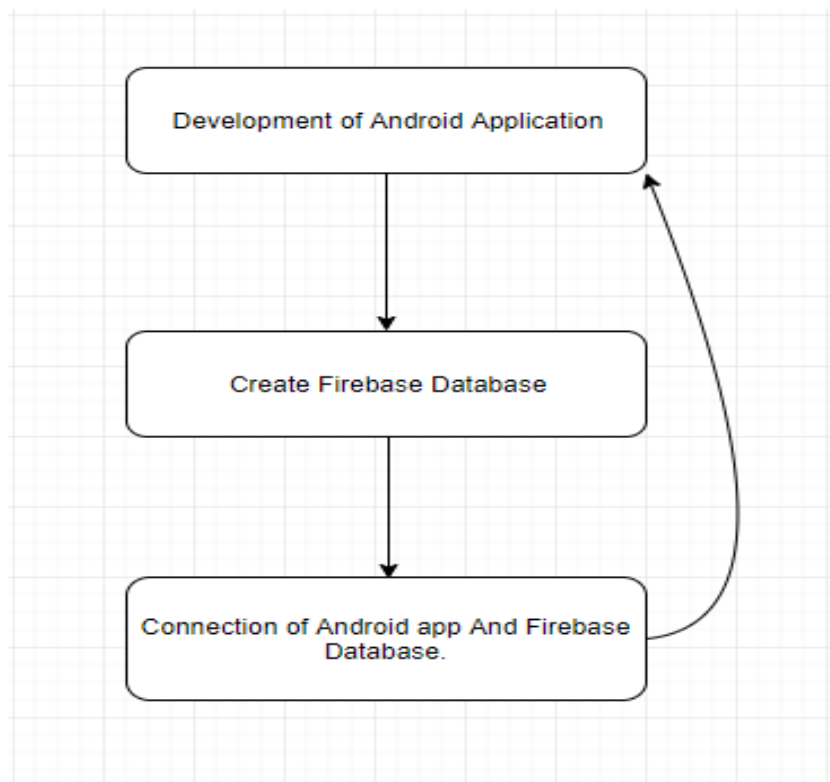


Figure 2.1 Methodology of TicToc Courier App

2.2.1 Development of Android Application

Our application is built on the Android Studio IDE. We have implemented a firebase database which is helping us to build a communication platform between our application users. We have also used firebase auth which is to build a system where users can prove their authentication too.

2.2.2 Creation of firebase database

Firebase database is created to store the data of the application, retrieve the data of Application and to provide a user-friendly environment with no difficulty at all.

2.2.3 Connection of Android App and firebase database

Connection of **TicToc Courier** and Firebase Database is built so that the Android app can easily communicate with the firebase database and store and retrieve the required data from the central database which is accessible everywhere, where there is availability of the internet.

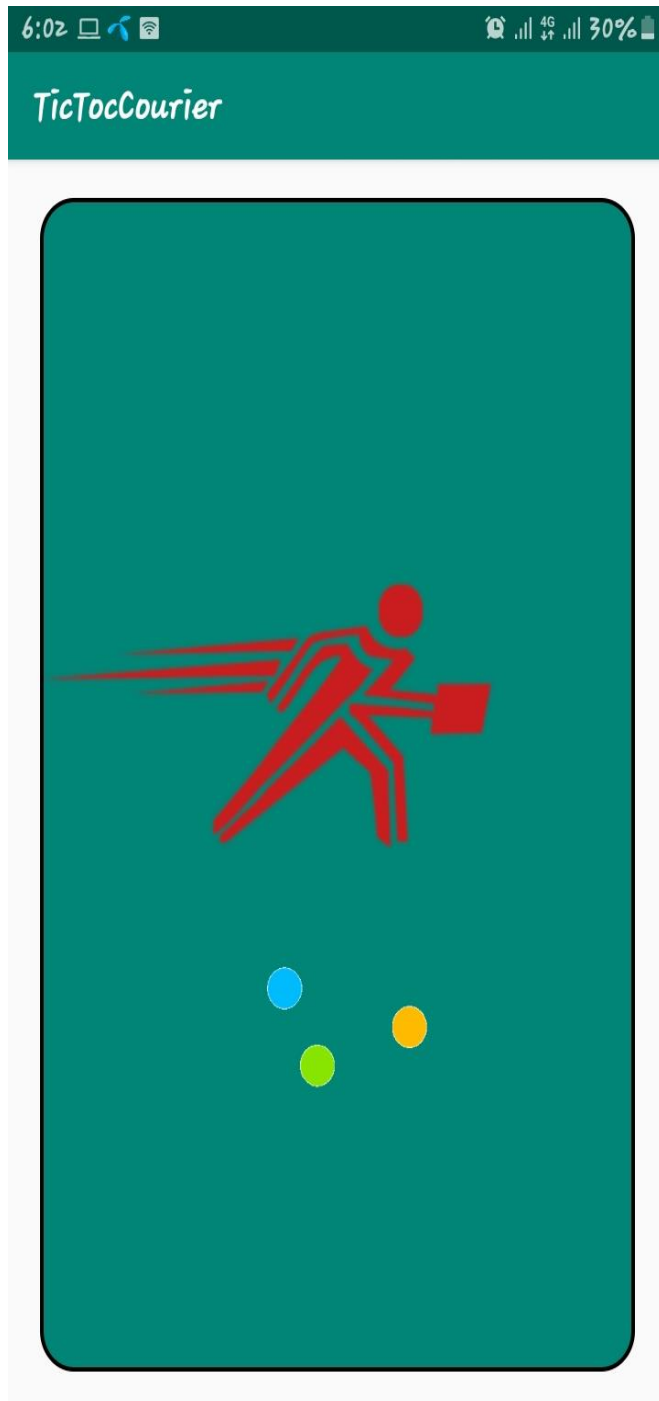
2.3 Implementation

TicToc Courier is an android application and the following are the steps of its implementation.

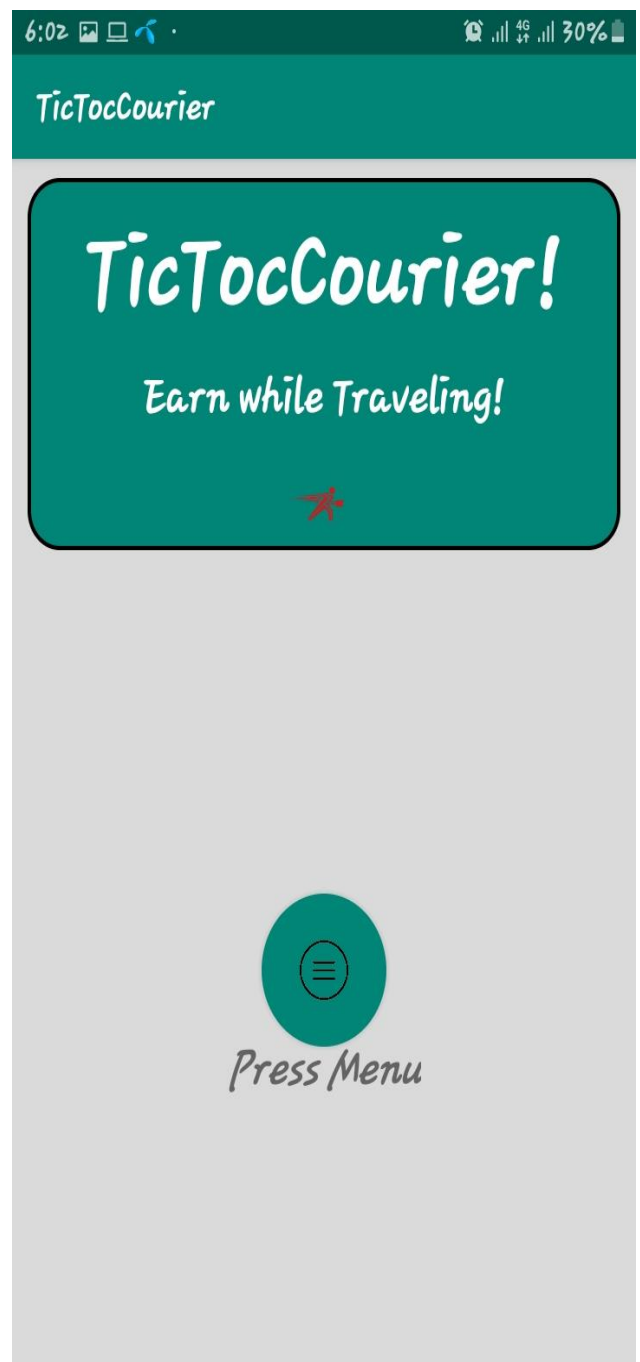
1. Created a Project in Android Studio
2. Created the Firebase database for the project
3. Established the connection of firebase database with android project
4. Created respective module classes to store and retrieve the data from the firebase database accordingly.
5. Created Activities for all the functionalities provided by TicToc Courier.

2.4 Activity Screen

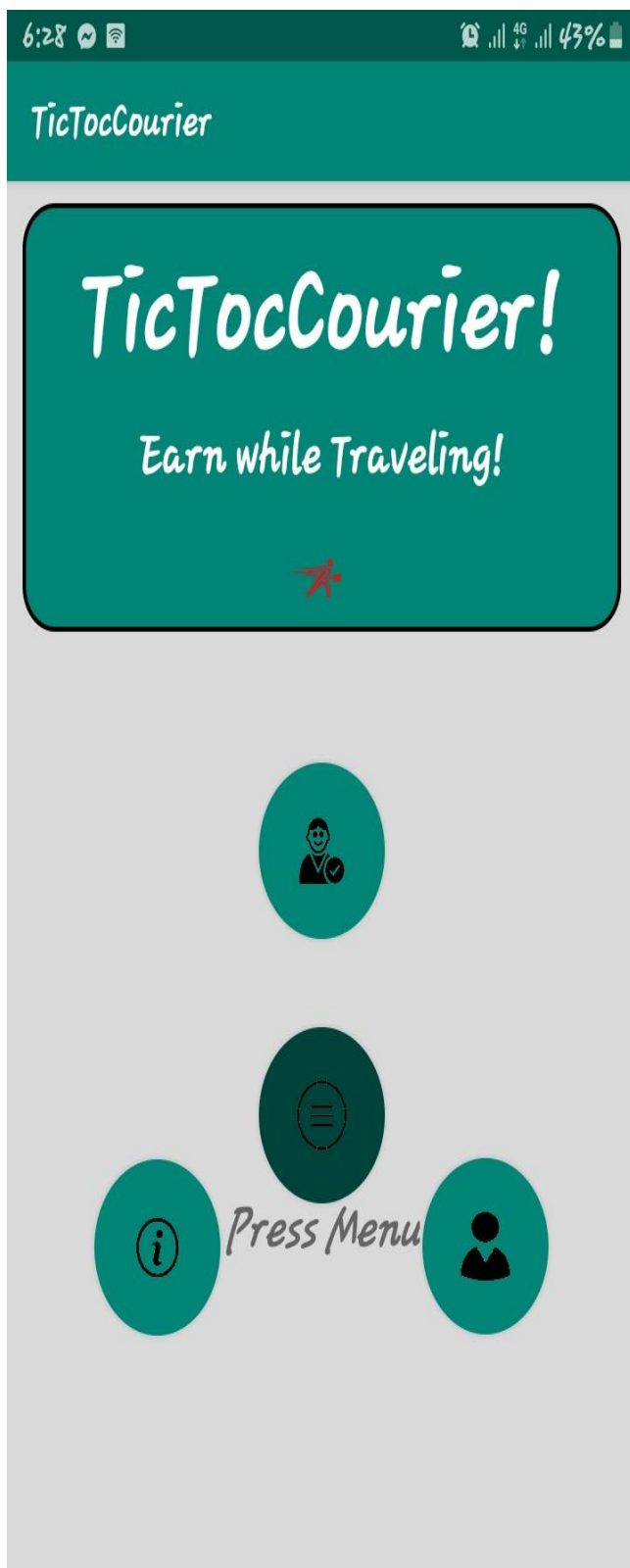
1. Splash Screen



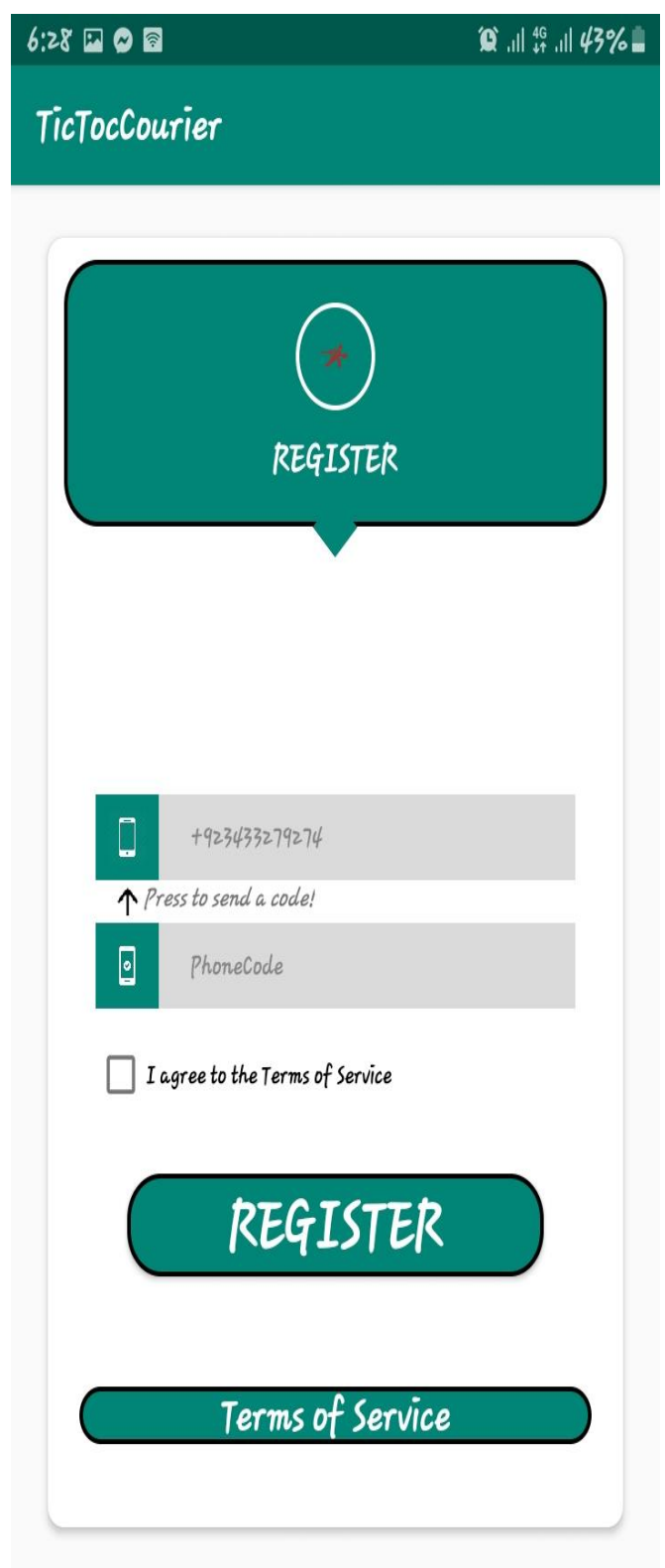
2. Startup_1



3.Startup_2



4. Registration



5. Sender

6:29

42%

TicTocCourier

SENDER

Item Name

Quantity

To

From

Price

UploadItemImage

SUBMIT

Sender

Traveler

6. Traveler

6:29

42%

TicTocCourier

SEARCH To From

bottle

Masjid e khand

110

QuantityPrice

To: Sukkur From: Hyderabad +923062337855

pencila

2332389

QuantityPrice

To: To From: From +923062337855

ebsanmm

Sender

Traveler

7. Sender Profile

6:42

4G

41%

TicTocCourier



ahsaan

Mobile Number

03433279274

Email To Contact (Optional)

ahsaan.se15@gmail.com

Residency

sukkur


8.Traveler Profile

6:42

4G

41%

TicTocCourier



ahsaan

Mobile Number

03433279274

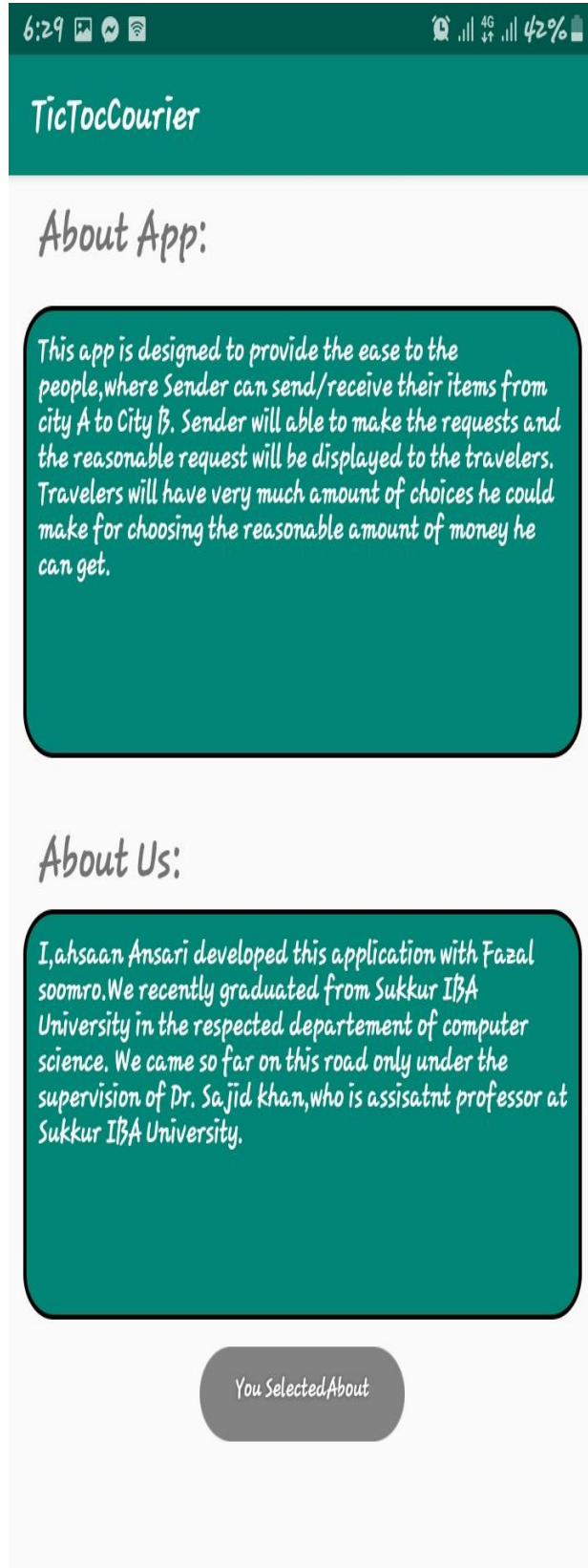
Email To Contact (Optional)

ahsaan.se15@gmail.com

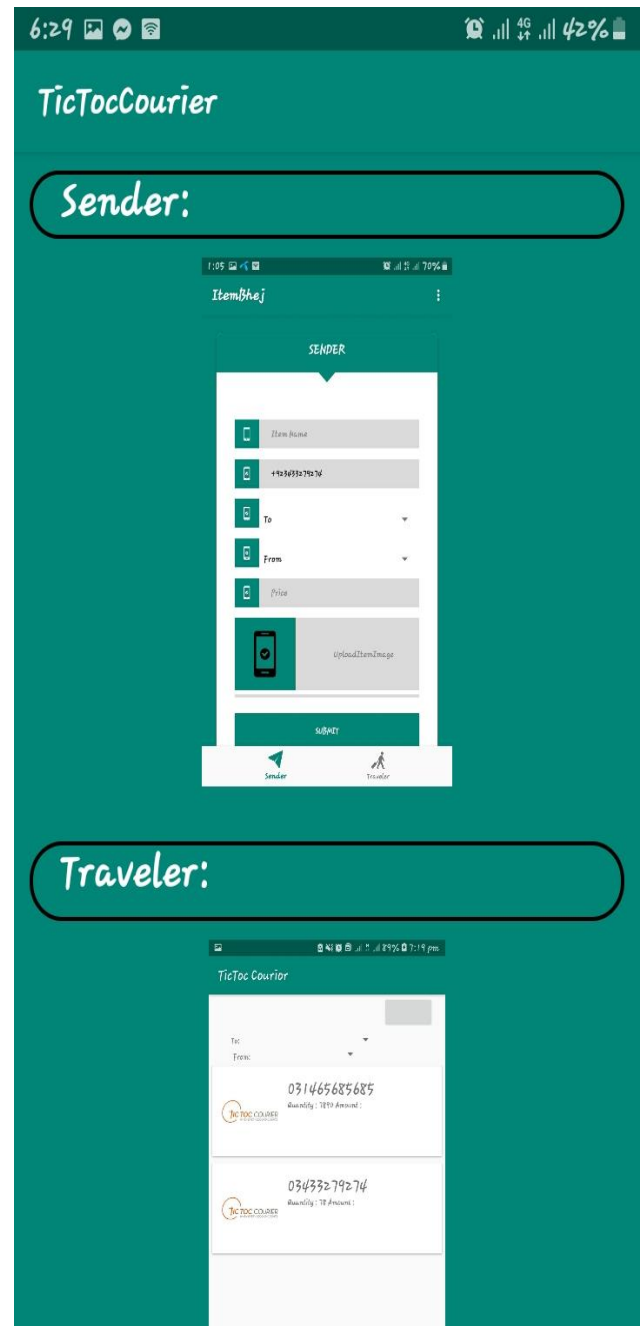
Residency

sukkur

8. About App/Us



9. Visitor



CHAPTER 03

3. SPECIFICATION & DESIGN

3.1 Specification

This Section involves functional requirements of the application, its assumptions, dependencies, and constraints.

3.1.1 Product Perspective

"TicToc Courier" is a mobile application that aims to provide a communication platform. In the **"TicToc Courier" application**, people can also search for their desire sender request and can contact that particular sender people.

This application will help users to save their money and time.

3.1.2 Product Functions

This mobile app will provide the following functionalities to user.

- Application allows the user to authorize himself/herself for using services of the application by giving his details which includes a phone number and generated security code.
- Application allows the user to place a request over the app.
- Application also allows the user to find the suitable sender request according to their desired destination.
- Application shows the details of available requests; Such as location, price, and contact no of the sender.

3.1.3 User Classes and Characteristics

Traveler and Sender will be both users and their characteristics are:

- A Traveler will be able to communicate with the sender via a message.
- The Sender will post a request so that the traveler could be able to see the request.

3.1.4 Operating Environment

The app can be run on android version 9 Pie or above.

3.1.5 Design and Implementation Constraints

This mobile application is constrained by

- The application will be developed on the Android platform for android version 9 Pie or above.
- Smartphone must be connected to the internet.
- This app supports the English Language.

3.1.6 Assumption and dependencies

- User should have enough knowledge of android OS.
- Devices must be connected to the internet to avail of the services of this app.
- Users know the English language, as this app will be provided in the English language.

3.2 External Interface requirements

3.2.1 Hardware Interfaces

As this is a mobile application, the user just needs smartphone connected to the internet for using this app.

3.2.2 Software Interfaces

- The app will communicate to Firebase Database to login and store and retrieve the data of available services.
- The app will generate the security code in the time of registration, which needs internet to be connected to the mobile phone.
- The app will send the message to the sender when a traveler will accept the request of the sender with the detail of the item and location provided by the sender.

3.3 Functional Requirements

3.3.1 Register/Login as a member

1. User shall provide the following data to register himself as a member

- Phone Number

- Use code to register in the app.

2. The User shall click the register button to register his data.

3.3.2 Place a request

1. The Sender will be able to do:
 - He/ she put the name of an item in the field.
 - Contact no will have automatically come in the field.
 - Location:
 - To; End location of the item
 - From; Start location of the item.
 - The Sender will be able to set a price for his/her item.
2. The Sender must press the submit button to place a request.

3.3.3 Shows list of Request

1. The Traveler will be able to see all request in its panel with the detail:
 - Contact no of the sender.
 - Location: To or From.
 - Price of the item for transportation.
 - Quantity of those items.
2. The Traveler will be able to filter out the specific location where he/she wants to visit the place by choosing the location option with the press of the search button.
 - He/she will be able to see the specific request with his corresponding area.

3.3.4 Search for Sender

The Traveler will be able to see the detail of the sender request when he chooses the request and the alert dialogue will appear with the confirmation process.

- The app will move the traveler into the sender request detail with all the data given in the request.
- The message will be sent to the sender from the mobile of traveler with all detail of the item.
- Both will communicate for further processes.

3.3.5 Contact another sender

Only members shall contact other users for availing the service offered by TicToc Courier

3.3.6 View detail

1. Only members shall view the details of other users.
2. Unregistered users can see the overview of our app, which type of registered users are.

3.4 Design

This section involves the overall architecture of the product/application/system.

3.4.1 Use Case Study

3.4.1.1 Use Case Study Analyzation

Use cases define the interactions between actors and the system to achieve any specific goal.

The use case provides a flow of system interactions.

The following actors have been identified and their roles are summarized in Table.

Roles	Action
Member	Can easily send/receive their items, can search their required sender as well as they can easily contact other members to get their required item.
Visitor	Only see the types of registered users

Table 3.1 Roles of Actors

3.4.1.2 Actors, Use case and descriptions

A use case defines the interaction between **users** and the **system**, how users interact with the system.

The flow of system behavior is defined. Here we have defined the role of actors (primary or secondary) that will interact with the application to achieve a particular goal. The use case diagram of the proposed system is defined below.

3.4.1.3 Detailed use Case

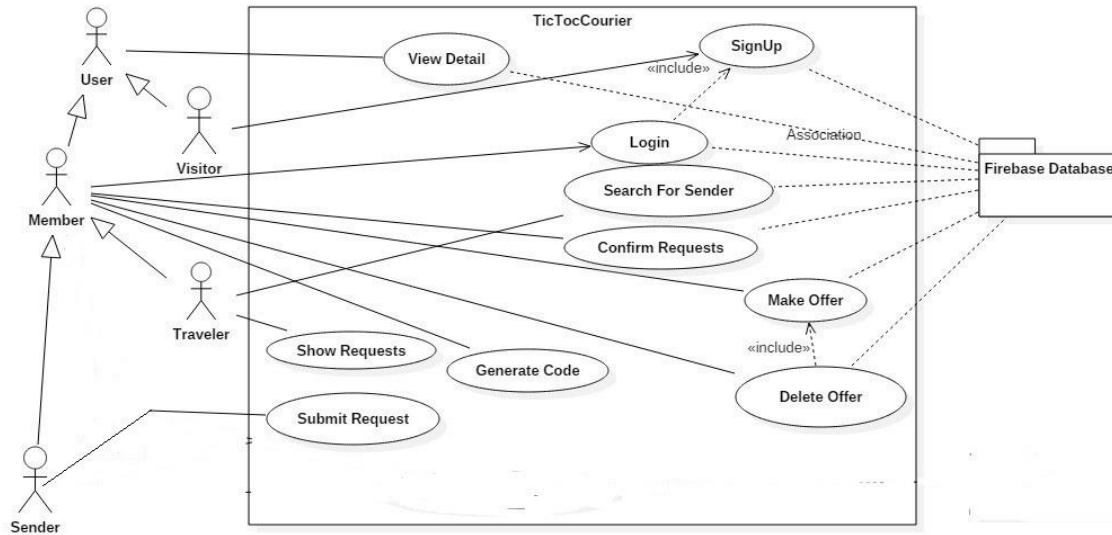


Figure 3.1 Detailed use Case of TicToc Courier

3.4.1.4 Use cases

3.4.1.4.1 Signup/Register/Login

Users must register themselves for availing services of the app.

Use case Id: Signup		
Use Case Id:	Signup:	
Actors:	Sender/receiver, carrier and others who want to use that service.	
Feature:	He / She must Sign up to avail those services that the app is providing them.	
Pre-Condition:	User must install the app in his/her smartphone.	
Scenarios:		
Step#	Action	App Reaction
1.	User must fill the date (Phone number, security code, etc.)	Creation of new account in DB.
2.	User click Signup Button	The user is legally registered.
Alternative Scenarios:		
1AS.	Check if the accounts are created then it won't create again with the same username, contact number as well.	
Post Conditions:		
Step#	Description	
1.	If successfully created the account than account will be directed to the login	
Referenced:		Relative use-case is login use-case

Table 3.2 Signup of TicToc Courier**3.4.1.4.2 Search for Sender**

Use case Id: Search for Sender.		
Use Case Id:	Search for Sender	
Actors:	Any user who wants to Search for Available free senders.	
Feature:	Search for senders is not driven from any other feature as it can be used by visitors as well as members (registered users).	
Pre-Condition:	The app should be installed in smartphone.	
Scenarios:		
Step#	Action	App Reaction
1.	User Enter the date, from city to city, and time as well.	List of all the carriers which satisfy the specifications will be retrieved from the database.
2.	User click Search button.	List of Available required carriers will be shown to user
Alternative Scenarios:		
1AS.	If the user wants to change the carriers, then he can go back and change specifications	
2AS.	If the user wants to change the city and time to avail the service respect to the requested carrier.	
Post Conditions:		
Step#	Description	
1.	If the user selects any carrier and user is visiting, then he will be asked to login as a member to avail the service.	
2.	If the user selects any carrier and user is a member then the details of that vacancy will be shown to the user.	
Referenced:		A contact use case may be related to this.

Table 3.3 Search for Sender**3.4.1.4.3 Make Offer/Place Request**

Use case Id: Make Offer		
Use Case Id:	Make Offer	
Actors:	The user who is registered as a member of this app.	
Feature:	Driven from Login use case	
Pre-Condition:	User should be logged in as a member.	
Scenarios:		
Step#	Action	App Reaction
1.	The user selects the offered service from his profile and click Make Button	Record having specifications of data will be added into the database.
Alternative Scenarios:		

1AS.	If user don't want to make the offer and wants to avail other services, then he may go back to avail other services
Post Conditions:	
Step#	Description
1.	User will be notified If his offer is made.
Referenced:	login use case is related to login use case.

Table 3.4 Make offer by Users

3.4.1.4.4 View Detail

To view the details of any other user.

Use case Id: view detail		
Use Case Id:	View Detail	
Actors:	User who is Registered as a member in this app.	
Feature:	Driven from Login use case	
Pre-Condition:	User should be logged in as member.	
Scenarios:		
Step#	Action	App Reaction
1.	Select the user for details	Retrieve the details of user and shown in the new screen.
Alternative Scenarios:		
1AS.	If user don't want to see details of the selected person, he may go back and select any other Person & service as well.	
Post Conditions:		
Step#	Description	
1.	User will be directed to screen containing details of selected user.	
Referenced:		login use case is related to login use case.

Table 3.5 View Detail by Users

3.4.1.4.5 Show Requests

To show requests these can be done.

Use case Id: Show Requests		
Use Case Id:	Show Requests	
Actors:	User who is Registered as a member in this app.	
Feature:	Driven from Login use case	
Pre-Condition:	User should be logged in as member.	
Scenarios:		
Step#	Action	App Reaction
1.	When traveler activity is open, automatically all request will be shown to traveler.	App will retrieve the date from database about request will be presented to the traveler.

Alternative Scenarios:		
1AS.	If user does not want to see request, he may go back and select any other Person & service as well.	
Post Conditions:		
Step#	Description	
1.	User will be directed to screen containing details of selected user.	
Referenced:		login use case is related to login use case.

3.4.2 Static Behavior/Class Diagram of TicTocCourier

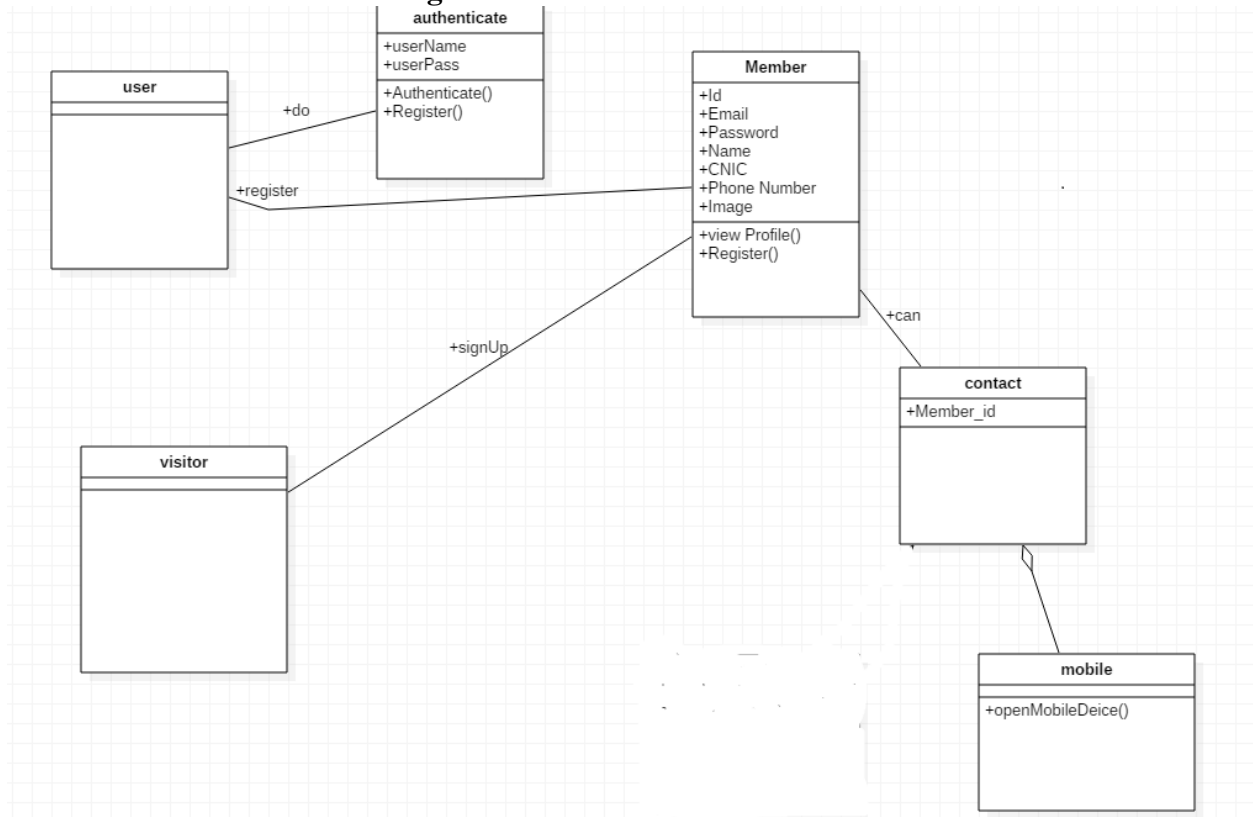


Figure 3.2 Static Behavior/Class Diagram of TicTocCourier

3.4.3. Dynamic Behavior

3.4.3.1 Sign up/Login/Register

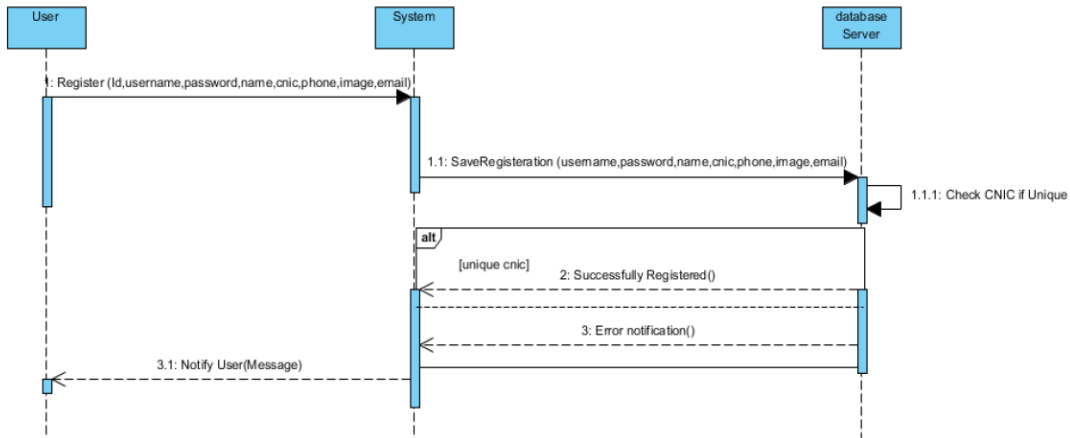


Figure 3.3 Sign up/Login/Register of TicToc Courier

3.4.3.2 Search for Sender

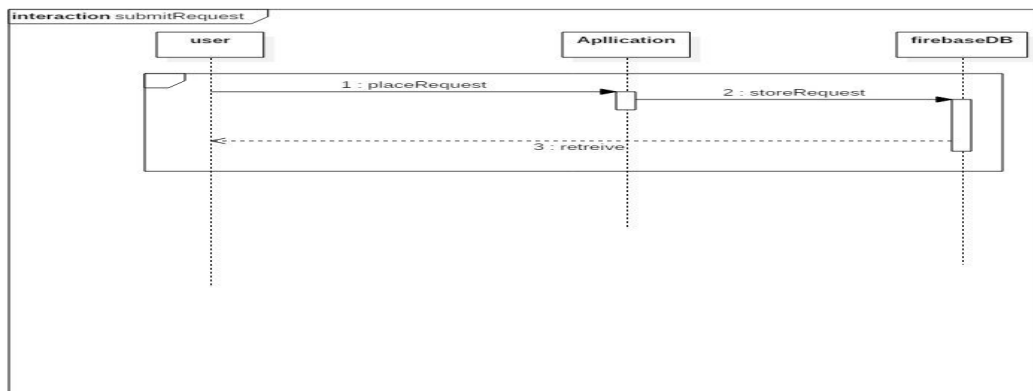


Figure 3.4 Search for Sender

3.4.3.3 View Detail

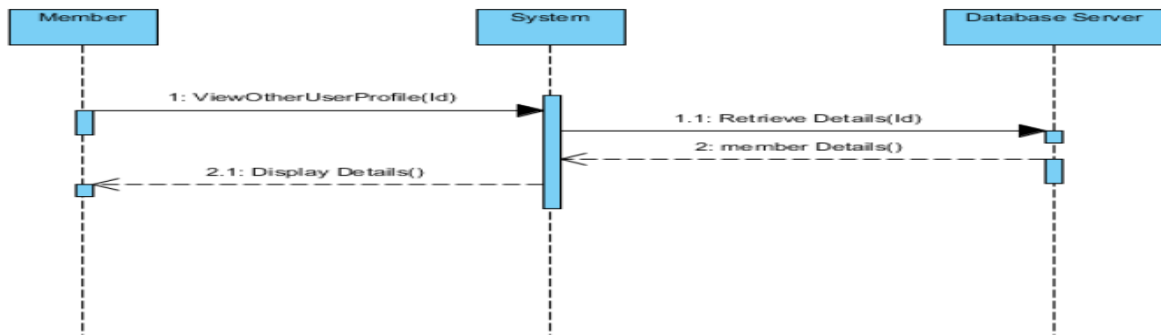


Figure 3.5 view detail by users

3.4.3.4 Submit Request

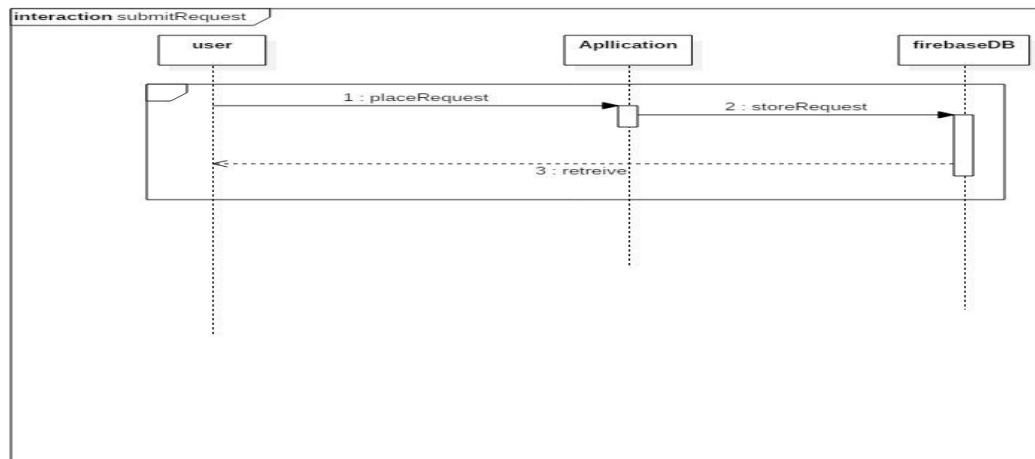


Figure 3.6 Submit Request by Sender

3.4.3.5 Show Requests

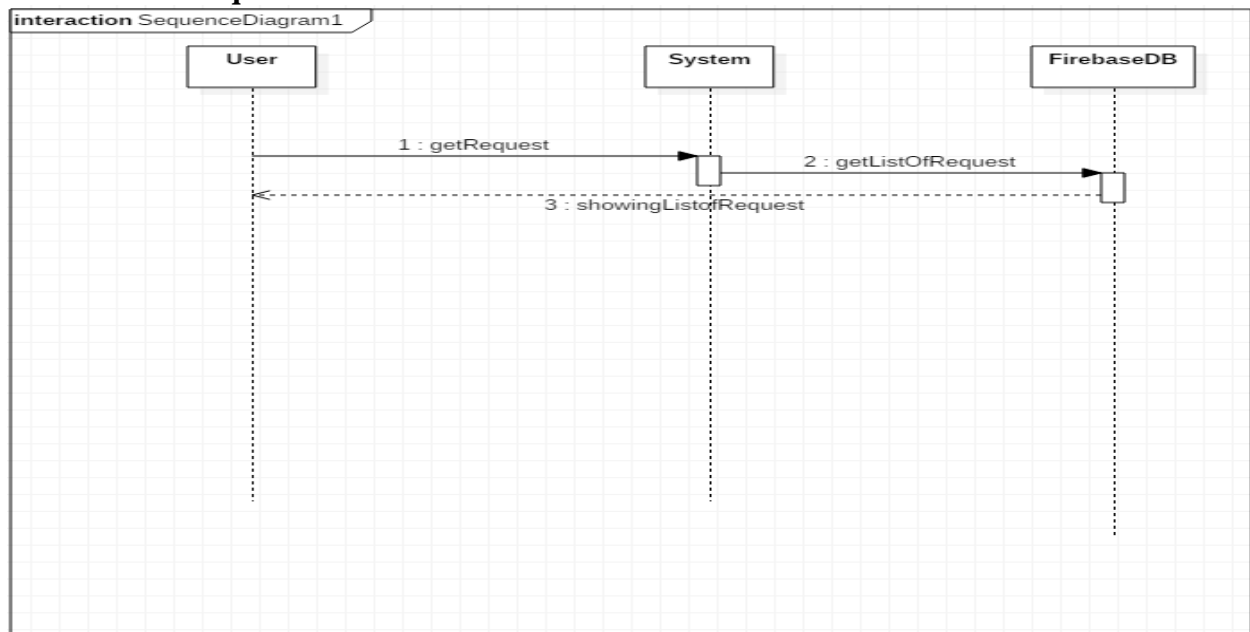


Figure 3.7 Show Request by Traveler

3.5 System Architecture

The System architecture is defined by the component in the system and their interaction.

3.5.1 Overview Components

TicToc Courier has the following components to work together and provide the required services to its users.

- **Mobile Application:** It is our Mobile Application (**TicToc Courier**).
- **Firestore Database:** Firestore database is used to store the data of the app and application will communicate to the firestore database to store and retrieve the data and other firestore operations like Email validation, user authorization, etc.
- **App Server:** Firestore database will communicate to the App server to provide the required facilitation to users.

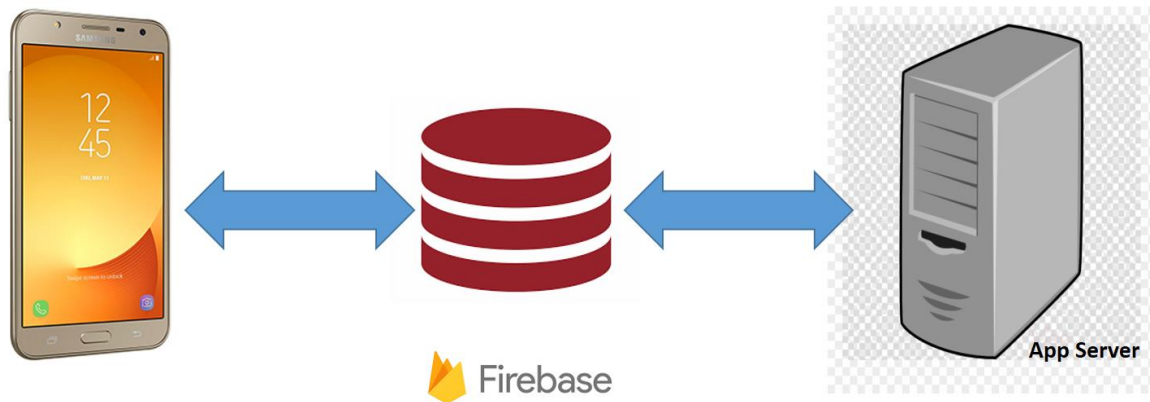


Figure 3.8 System Architecture

3.5.2 Application Architecture

TicToc Courier application is based on MVC (Model, View, and Controller) framework on its client-side.

- **Model:**
The model is responsible for maintaining data and business logic of the Application.
- **View:**
The view is responsible for displaying data to the user in a particular format. The view is the user interface of the system which maintains the position of the data to be displayed.
- **Controller:**
The controller is a request Handler which is responsible for responding to the user inputs and controls the interactions between the Model and View. It receives the input from the user, validates the input and performs the appropriate operation for it.

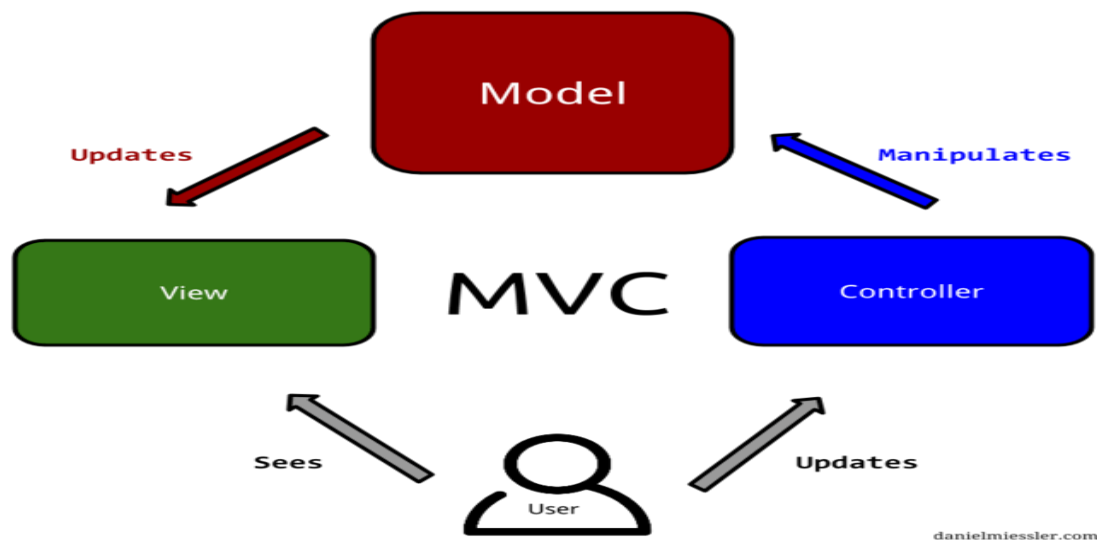


Figure 3.9 Application Architecture

It is used for making the modern user interface. It comprises three parts Model-View-Controller [5]. It helps to design our product/system efficiently, which separates every part of the product. For more, If the error in any part it will affect only and only that part another part will be unharmed.

3.6 Model

3.6.1 Agile Model

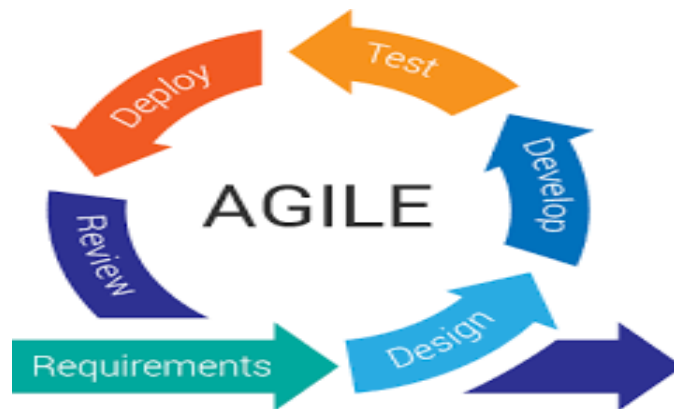


Figure 3.10 Agile Model of TicToc Courier

3.6.1.1 Requirements

The software requirements are a description of the features and functionalities of the target system. We gathered a requirement in the earliest phase of the development by considering ourselves as the end-user of this product.

3.6.1.2 Design

Software design is a process to transform user requirements into some suitable form, which helps the programmer in software coding and implementation.

In other words, we develop our front-end of the application which is usually called UI/UX (user interface and user experience respectively.)

3.6.1.3 Develop

Software development is a process by which standalone or individual software is created using a specific programming language.

We developed this app with the help of Java language with the requirements we gathered in initial phases.

3.6.1.4 Test

Software testing is a process, to evaluate the functionality of a software application with an intent to find whether the developed software met the specified requirements or not.

3.6.1.5 Deploy

Software deployment is all the activities that make a software system available for use.

3.5.6 Non-Functional Requirements

3.5.6.1 Usability Requirements

UR-1 App will be user-friendly by having a simple and self-explanatory interface.

UR-2 User will be able to easily learn the application by just using it for the very first time.

3.5.6.2 Performance Requirements

PR-1 Only one function can be performed by this app at a time.

PR-2 App will be performing functions with the response time of no more than 3 sec.

3.5.6.3 Safety Requirements

Not Applicable

3.5.6.4 Security Requirements

SR-1 User will need to authenticate himself as a member and the login to the app as a member to avail of the services of this App.

SR-2 CNIC or any other personal requirement will not be shown to others.

SR-3 Users who use this app as visitors will be allowed to search for the available required vacancy only. To avail the service, the user has to login as a member.

SR-4 Complete profile of other users will not be shown to visitors.

3.5.6.5 Robustness

ROB-1 If any type of error occurs in app, the app will show the appropriate message to the user and any function will not be performed until that mistake is corrected.

ROB-2 If there is an Internet connection problem then the app will also inform the user by giving the appropriate message.

3.5.6.6 User Documentation

The user manual will be provided to the user along with the application.

CHAPTER 04

4. RESULTS CONCLUSION & FUTURE WORK

This chapter will describe the obtained outcomes of the application. This mobile application is quite simple and easy to use. It will facilitate the people while sending and receiving the item without having any third party. Common people will send and receive items on their own.

4.1 RESULTS

Mobile Application Results:

The sender will submit the request and travel will be able to see it in the traveler section of the application.

The traveler will be able to see all the requests from all over Pakistan and he can also filter the search according to the city he wants to travel.

Eventually, the traveler will accept the request of the sender and the sender will receive a message on his mobile phone that a particular traveler is ready to accept his request of picking his item and taking it along with him toward a particular city.

4.2 Conclusion

In our society, many people travel to some destination, such as the city, in their vehicle and take care of the expenses that are a bit hard for a man to handle.

People also face problems in finding the desired travel mode and time-saving stuff as well even on festivals from now on these services will be provided now from **TicToc Courier**.

Problems that we are facing are we do not get our items within a day sometimes and the service company charges a large amount of money too. It takes several days for the items to be received on the other end and the services are costly.

The solution we have proposed an application you can send your belongings with a reasonable amount of money. This application also suggests the available sender list who wants to send their stuff in the area where the user is traveling.

Through this application, the users can save their money and find their required destination.

4.3 Future Work

Currently, we have not included the chatting or email stuff in this application but surely our sole aim is to further service the society by adding these features.

Conclusively, in the future, we are aiming to extend the scope of our app by providing the following features:

1. The app will have an audio and video call option so that user can contact other members via call and verify them
2. The app will also do image processing on the profile picture of the member so that the user cannot put any miscellaneous picture as his profile picture.
3. We will hire staff for major cities who will get stuff from senders and provide it to travelers and from travelers to the receiver.
4. The image of the item will be taken by the camera or gallery.
5. The Map will be included to show traveler location.

4.4 REFERENCE

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