JIMMA UNIVERSITY



**Submitted To: School of Computing**

Title:-Digital Broker Mobile Application for Addis Ababa City

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**CHAPTER ONE**

# **Introduction**

This project is a mobile based brokering system for an existing broker service. It aims at replacing the manual brokering service into android system. Broker is the person who makes a contact between seller/renter and buyer, and then post the service information through the application. Digital brokering is the process whereby customers buy, rent and sell goods or services and also search for guards and house servants through online in real-time, over the Internet by using an android device. It is a form of electronic commerce. In this proposal, we aim at designing and implementing a remote digital brokering system and also improve brokering experience. This application comprises of three different subsystems. The first subsystem is implemented on customer’s mobile device. Through this application, customer can search for their need based on a particular location, vicinity, price and quality of the service or previous customer’s reviews. After choosing their need, customer can view a digital menu and select items by means of check boxes or any other means.

The second subsystem is used by the service units. The user can view details of services. When a customer got his need, he/she completes his payment and all the information is sent to the central database. The third subsystem is used by the brokers of the system. Broker is sent notifications when a customer places an order; negotiate with the owner and makes payment to a particular service. Further, Broker can make all the transaction, if there has been a change in the quality, quantity, or prices.

# **Background**

Android application is a smart phone application that works on cell phones that uses an android operating system. In our county context, mobile phone users are increasing rapidly from year to year and even day to day but the mobile phone applications are in their developing stages so it is hard to find this application in the hands of an ordinary user. Because of their mobile platforms difference and internet applicability in our country most of mobile applications cannot reach or serve their purpose. Considering this point and other fields that need focus on development of mobile application we have planned to develop this application that gives many significant services to its users, it embedded three applications within it that allows it to give 3 different services to its users, the services are:-

* + - * House sale and rent service
      * Vehicle sale and rent service
      * Guards and servant online apply.

# **Statement of problem**

Traditionally, to access their need, customer needs to directly interact with the broker or search by themselves. Further, customer needs to have a direct contact with the owner and the services they provide whether or not it satisfies their need. However, today’s era is witnessing people engaged in something or the other all the time. Customers are also demanding simplification of tasks in almost every field, from shopping to buying cars to booking movie tickets, cabs, etc. While searching for need, certain obvious inconveniences are faced by regular customers. These inconveniences include waiting, discrepancies in the need, time consuming and so on.

Currently, most of commodity seekers search for their needs such as house, vehicle, guards and servants though a manual means of searching. This way of finding need consumes, time and budget of customers and brokers. And also it is quite difficult to get their need of interest. In addition to this, facilities seekers view and search for the service through some web-based applications such as betoch.net and makina.net through online but these sites are used with the help of web browser to visit the site and perform their own applications

Generally the current system has the following problems:

* **Consumes time and budget of commodity seekers:-**commodity seekers spend a lot of time and budget in searching for their need.
* **Problem in finding renter or buyer:-**Since they do manually it’s difficult for the broker to know whether the previously informed service is rented/sold.
* **Conflicts:-**since there are a lot of brokers in the traditional way, each of them informing different user and a single service may be tried to be accessed by many users which may result in conflict between users.
* Every time user needs to **connect brokers manually** by either going to his office or home.
* **Most of the times user should want to wait in queue:-**since there are a lot of customers that need for the service and they may come at the same time which may result in the user’s being wait in queue.
* Users **can’t get their need easily**.
* **It takes long period of time to satisfy user need:-**customer may tell his need to the broker and it may take a long period of time for the broker to satisfy user need.
* **It is difficult to know whether the provided information is true or not:-**the owner of the service may tell false information about his service to the broker.

Hence, it became imperative to develop a mobile based brokering system to eliminate the shortcoming of the manual system as above listed problem.

# **Objective**

## **General objective:**

The general objective of this project is to design and implement a digital brokering system for Addis Ababa city.

## **Specific objective:**

The specific objective of this project includes: -

* Creating a system that can guide customer by providing some detail information of services including their location.
* Perform requirement analysis.
* Find a solution to the existing problem.
* Design the architecture for the proposed system.
* Develop user friendly and interactive system.
* To develop easy way of registering form for user, house and vehicle information.
* To transform the manual process of renting and selling of vehicle and house in Addis Ababa city to a mobile system.
* Design persistent database.
* Implementing mobile application and acquiring a new knowledge.
* Test the developed system.
* Deploy the system.
* Lay concrete on a way to proposal in the area of android mobile applications in JU (Jimma University) so that other students can have foundation on which they can add more advanced functionalities on the system.

# **Methodology**

Methodology deals with a system of ways used in gathering information, analyze and design implement, test and evaluate the system. Most used methodologies are prototyping, iterative, incremental, waterfall, agile, etc. Among them we select agile development methodology for our system. The requirements for agile development are requirement gathering, analysis and design, coding, testing and acceptance. The advantage of agile development method is incremental (multiple releases), cooperative (a strong cooperation between developer and client), straightforward (easy to understand and modify) and adaptive (allowing for frequent changes).

## **Requirement gathering methods**

To develop our application the primary task is understand more about the current brokering system being used; we gathered different information from web based broker applications like betoch.net and also we have gathered data using the following techniques.

* ***Interview***: We ask some peoples directly and using phone about the current system and the techniques used in the system. We made a face talk with traditional broker about the system some of which are:
* How the communication takes place between the broker and the owner?
* What type of services does the broker provide?
* What type of information does the broker should have to know about the services?
* What is the quality criteria for a person to be a broker and etc..
* ***Observation***: We have observed the traditional means of brokering system when the service seekers waste their time searching for their need and the brokers too by moving from place to place.
* **Introspection:** all group members will discuss together about the requirements.
* **Brainstorming:** since the project will be done in group, every group member will provide their idea on the requirements.
* **Web analysis:** additional information will be gathered from websites concerning the current system.

## **Requirement modeling**

Analysis and design the system using object oriented approach. We need a method for analyzing a problem to be solved, a plan for the design of the solution and a construction method that minimizes the risk of error. We have chosen the object oriented approach (OO) to follow for our proposed system. Object-oriented programming (OOP) is an approach to designing modular reusable software systems. A module is a component of a larger system that interacts with the rest of the system in a simple and well-defined manner. The object –oriented approach is a logical extension of structured programming, module containing data and subroutines. An object is a kind of self –sufficient entity that has an internal state (the data it contains) and that can respond to messages (call to its subroutines). We select object-oriented programming because it produces solutions that are easier to write.

* Easier to understand
* Contain fewer errors
* Reduction of development time
* Reduction of time and resources required to maintain existing systems
* Increase code reuse.

## **System Analysis and design**

We use OOSAD (Object oriented system analysis and development) during the whole project life cycle. In our project, we will apply the concept of object oriented system development methodology which categorized in to two phases. These phases are object oriented analysis and object oriented design. It increases consistency among analyzer, designer implementation and testing. It also allows the reusability of the code which will help to enhance the project in the future.

We consider following object oriented system has many benefits over structured approach:

* It is easier to develop and maintain.
* It is reusability, extensibility, improves quality, maintainability and manages complexity.
* The transition from Object Oriented Analysis (OOA) to Object Oriented Design (OOD) can be done easily because of OOA is resilient to changes as objects are more stable. In general we will use this object oriented methodology for the following purposes; Simplicity, Maintainable, Faster Development, Increased Quality.

# **Development Tools used**

### Software and hardware tools are necessary for the development and deployment of the project. The following tools are used to develop the proposed system:

* Hardware tools:
* Desktop computer/laptop.
* Displaying devices like monitor.
* Storage devices: hard disk, flash disc.
* Internet cable.
* Processor: Any processor.
* RAM: Minimum of 2 GB (In order the system to run faster).
* 60 GB of Hard Disk Drive (HDD).
* Internal modem Software.
* Internal NIC (Network Interface Card).
* Software tools:
* **Microsoft word 2016**:-for preparing documentation proposal.
* **Microsoft PowerPoint**:-for preparing presentation slides.
* **Eclipse**:-is an android environment/workspace for coding.
* **Android OS**:-is a software platform that supports android application.
* **MYSQL /XAMPP server**:-is a server on which data is stored and retrieved from.
* **Notepad++:-**is an environment for writing HTML/PHP codes.
* **EDrawMax**:-is software used for designing and drawing UML diagrams (use case diagram, sequence diagram, class diagram, activity diagram, state chart diagram, component diagram, and deployment diagram).
* **Web browser**:-is used for browsing HTML file and data from server.

# **Feasibility study**

A feasibility study decides whether or not the proposed system is worthwhile in different dimensions. It measures how much the proposed system is beneficial or practical at development of the system. The feasibility factors of our project are:

* Economic feasibility
* Operational feasibility
* Technical feasibility
* Time feasibility

## **Economical feasibility**

Economic feasibility attempts to weigh the costs of developing and implementing a new system, against the benefits that would accrue from having the new system in place. This feasibility study outlines the economic justification for the new system. It gives the actual comparison of costs and benefits are much more meaningful in this case. Since this type of Application’s are new in our country in that it supports a lot of services, the people acceptance toward this system will be high and also there will be very less computation in the market due to this reason's and other causes the project benefits will outweigh the expected cost. But Since the Application is free for users the agencies only get benefit (income) from advertisement of those services that are included in the application.

## **Technical feasibility**

We believe that building a working system with acceptable characteristics, response time and other performance parameter will involve through technical knowledge and technology availability.

## **Operational feasibility**

### Measure how much the proposed system solves the existing system problems. This project is surely operationally feasible because the proposed system (the project) is a good solution maker of the problem and create a good environment towards the user of our application by providing easy, user interactive, everywhere and anytime accessible.

## **Time feasibility**

Time feasibility determines whether the proposed system will be completed on the given schedule or not. Whatever the scarcity of time given for the project by the internal motivation and potential of the team members of the project, we expect the project will be completed on time that is described under the project work plan below.

# **Project scope and limitation**

**1.6.1 Scope of the project**

The system focus on mobile based brokering system which will cover only in Addis Ababa city and will perform the following activities:

* **Registration of user**: the proposed system will register full information of the user.
* **Registration of services**:-The proposed system will registers all service information.
* Registration of House.
* Registration of Vehicle.
* Registration of guards and house servant.
* **Update Service information**: It updates the service information when needed.
* **Search for services**: To search for the service that the customers need.
* **Notification**:-notifying the broker and the owner when the need request is sent by the service seeker.

**1.6.2 Limitation of the project**

This project covers some of the aspects of brokering agency as case study. However the following are the constraints:-

**Time constraints**: - Due to time constrain the system covers only for managing and controlling AA brokering Agency.

Generally the limitation of this project includes: -

* This project done only for AA city.
* The system can’t work unless there is an internet connection.

The system will only run on android platform.

# **Significance of the project**

The main purpose of this project is to develop a mobile application which enables easy way of searching a service that match their need in an easy, cost effective and timely manner .That means it enables the customers to search and access their need through their mobile anywhere any time.

In general, the system has the following benefits:

* Minimize the time and resource required to get the service.
* Easy data storage and management.
* Reducing the probability of errors.
* Potentially increasing data security and confidentiality.
* The app runs on android device so as it’s every time everywhere accessible (usage of portable device).
* Effectively and efficiently manage and control of information about users, House, Vehicle, guards and house servants.
* User can find sellers contact details.
* Buyers can communicate with sellers by making call or message directly by using application.

In general this system will reduce the cost, time, and effort of the user and also it will provide such an easy way to use.

# **Project Work Plan**

# **Gant chart**

The project is officially started on 25/02/2009EC and will be completed on 26/09/2009 EC.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Activities** | **Time** | | | | | | | | | | | | | | | | | | | | | | | |
| 25/02/2009-  10/03/2009 | | 11/04/2009-  30/04/2009 | | | | 01/05/2009-  20/06/2009. | | | | | | 1/07/2009-  3/09/2009. | | | | | | | 4/09/2009-  25/09/2009. | | | 26/09/2009 | |
| **Proposal** |  |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  | |
| **Requirement Analysis** |  |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  | |
| **Design** |  |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  | |
| **Implementation &coding** |  |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  | |
| **Testing** |  |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  | |
| **Project Defense/Demonstration** |  |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  | |

# **Organization of the project**

The project is organized in five chapters. The first chapter is about the problem identification having background of the project, statement of problems, objectives and scope and limitations. The second chapter deals with the overall system analysis, work of the current system and view of the proposed system as well as diagrams i.e. Use Cases are written along their documentation. Sequence diagrams, activity diagrams are used to analyses the system.

The third chapter is about the system design. Deployment and component diagrams are used to show the solution design. The implementation part is on chapter four. And finally chapter five deals about testing and evaluation mechanisms.