# Chapter One: Introduction

## **Background of the Study**

Nowadays, our life is a full of movements. Most of our movements are taxi service based everywhere including big cities, medium-sized cities and even small cities around the world.

Taxi systems try to meet service demands of native population and tourists that visit or work on these places. At most of the cities around the world, it is possible to observe that taxi drivers and also users waste a large portion of time. Because of this high rate of wasting time, there are a large number of studies that intend to improve the efficiency of these services, without increasing the costs.

This project involves the study of current system in more detail to handle Taxi Booking at Bahir Dar city. Even if there is automated taxi booking system in large city lake Addis Ababa, The existing system in Bahir Dar is still manual system, which means customers are stand long time on the street waiting for coming taxi or make a call for driver they already know. Call phones to taxi drivers or to the taxi service providers and make physical contact to the taxi drivers or taxi service providers. This project needs to make significant change on the existing system. In these project customers can book taxi from anywhere in the town at any time online. The drivers are only accepting order of system and serving customer. Then the central system make decision based on customer needs, send booked taxi numbers and arrival time with corresponding amount of the cost for the customer and send notification for selected taxi drivers. This range of features ensures booking a taxi online is a lot faster and easier than booking and dispatching a taxi by making call to taxi service providers or to the taxi drivers and physical contact.

## **Statement of the Problem**

There are a lot of problems in the existing system. Due to that passengers as well as taxi drivers are wasting their time and money, passengers are stand long time on the street waiting for coming taxi or make a call for driver they already know, so it is difficult to customers to find a taxi on their way. In other way taxi drivers are also waste their time and resource by staying somewhere until the customer call them or come to them or they find customer by roaming . Although as there is no legally specified pick and drop fee for every place based on km or any distance measurement, customers are paying extra money for single route. Road side booking of passengers is inefficient and causes occasional disputes among bookers, passengers and drivers. Therefore taxi booking project will came up with mobile based system to solve those problems mentioned above by enabling the customer to book taxi and drivers to receive booking order from the system anywhere in the city. This would enables that each customer who made a booking is served within the shortest possible time, thus increases operational efficiency and enhancing customer satisfaction. Drivers use voice recording instead of phone call because when the drivers use phone call there might be danger even they use text-to-text response. But it is better to use text-to-speech response for drivers. Therefore drivers will response to customers request by speech.

## **Objectives of the Study**

### **General Objectives**

The aim of this work is to Design, Develop and implement an online Taxi Booking apps to order taxi online by using mobile phone.

### **Specific Objectives**

* To plan the design and development of our system
* To develop procedures for appropriate recording of passengers
* To develop interactive and user friendly interface so that the user can easily book a taxi in few minutes by doing few clicks.
* Engage the customer to interact or introduce with the new technology.
* Requirement gathering
* Analyzing the existing system
* Analyzes the requirement of the system
* Designing the database
* Programming the functional units of the system

## **Methodology**

### **Requirement gathering methods**

We gather requirement from peoples who has direct relation to our system. For gathering requirements we use the following methods.

* **Interviews**

This is one of the methods used for the collection of data which is mostly used method. We have used the interview method to gather direct information from taxi users and the taxi drivers in Bahir Dar city.

* **Observation**

This is another type of method for collecting data and information in which we have witnessed the actual events which are happening in the city. In this method all we have to is observing and note down the events that we observed, so here we have observed some events like, queue wait for taxi, taxi driver waiting for passenger, disagreement of passengers and taxi drivers by payment amount.

### **Analysis and design Methodology**

We decide to use object oriented system analysis and design methodology because of the following reason:

* Object-oriented techniques work well in situations where complicated systems are undergoing contentious maintenance, adaptation and design
* **Simplicity:** software objects model real world objects, so the complexity is reduced and the program structure is very clear.
* **Reusability:** the object oriented provides opportunities for reuse through the concepts of inheritance, polymorphism, encapsulation and modularity.
* **Increased Quality:** Increases in quality are largely a by-product of this program reuse.
* **Increased extensibility:** when we need to add new feature to the system we only need to make changes in one part of the applicable class.
* **Maintainable:** OOP methods make code more maintainable. Objects can be maintained separately, making locating and fixing problems easier. The principles of good OOP design contribute to an application's maintainability.
* **Modifiability:** It is easy to make minor changes in the data representation or the procedures in an OO program.

### **Implementation Methodology**

## **Feasibility**

### **Economic feasibility**

The application is economically feasible as it only requires an android device with Android SDK 2.3 or higher and users should be able to connect to the internet either through cellular or Wi-Fi and should able to receive messages. This would be the only cost incurred on the project and this project is economically feasible; because the system is developed in low cost.

### **Technical feasibility**

To develop this application, an internet connection and a database server is required. The application is going to be deployed and will be tested on android mobile phone, thereby making it technically feasible.

### **Time feasibility**

Time feasibility is determine how the proposed system accomplished with the given time table. It implies effective time management for the system, and the project should finished within deadline. So the team decides to implement and configure the new system on time without any delay.

We have scheduled our time for our project as follow:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| No | **Task** | **May 10-20** | **May 21-30** | **June 01-20** | **June 21-july 10** | **July 11-30** |
| 1 | Requirement Gathering |  |  |  |  |  |
| 2 | Requirement analysis |  |  |  |  |  |
| 3 | System design and documentation |  |  |  |  |  |
| 5 | Implementation |  |  |  |  |  |
| 6 | Testing |  |  |  |  |  |

## **Beneficiaries or significant of the project**

The significance of the study is to create android based taxi booking system that will provide services to customers and easy to use. Taxi Booking Application is the ideal taxi booking application for individuals on the go. This user-friendly application offers convenience by allowing users to pre-set their favorite locations and journeys for their taxi bookings. It even allows users to book a taxi at their current location. For ease of convenience, users can also access and book from a list of completed trips.

Instead of dialing to the service center, taxi booking helps users deliver their requests directly to the nearest taxi drivers through internet. It greatly saves the trouble calling to service center and waiting reply from it.

* Reduce waiting time
* Book or cancel booking of taxi easily.
* Customers can send pickup, drop off place and arrival time to the drivers
* Taxi drivers can decline or accept the request
* Avoids paper based or hand recording system.
* It prevents to the user from stress and confusion.
* **Drivers** benefited from the proposed system by tracking the pickup and destination place of the passenger and decrease his tired of finding passengers on the road. they perform their work effectively and efficiently without loss time and resource.
* **Customers:** it totally remove wastage of customers time who are stand long time on the street waiting for coming taxi, gains fast access and save their time.
* **And taxi service center** can manage properly all taxi those are inside the service provider.
* **Government:** The development of this project includes sales report of drivers which is information source for the government and government can collect fair tax.

## **Limitations of the project**

Just as any researcher is bonded and restricted to encounter some limitation, this project is faced with the following limitations.

* This project is only limited to contract taxi service
* This project does not include online payment.
* Restricted in areas.

## **Scope of the project**

Proposed system focus only on contract taxi in Bahir Dar city on the following areas;

* **Booking Procedure**: passenger can book or order taxi by sending their pick up, drop of place, time and date. Therefore anyone who has an android device can book taxi easily.
* **Driver Details to the Customer**: The driver can send his details to the customer including taxi current status.
* **Customer Details to the Driver**: The passengers can book with required details of them and send to the driver and they could check a confirmation message whether their request is accepted or denied by the driver. The request is then sent to be nearby registered taxi drivers. Those drivers can choose to accept or deny the request.
* **Location Tracking**: The driver can track the current location of passengers easily when the passenger send request by specifying starting location, destination and arrival time.
* If multiple drivers intend to accept the request, only the first one who taps the accept button will be able to take the order and lastly a confirmation message will be sent to the customer.
* Instead of dialing to the service center, taxi booking helps users deliver their request directly to the nearest drivers

## **Organization of the project**

Our project will consist of five chapters. The first chapter, requirement analysis, includes background, objective and methodology among others. After successfully complete requirement analysis part, Analysis of the system is going to be conducted. This will includes current system description, problem of the current system, alternative solution, proposed solution, functional and non-functional requirements and others tasks. In chapter three will discuss about design of proposed system using UML modeling techniques to realize the solution selected in previous chapter. In chapter four will implement the system based on identified solution. This chapter will include Writing code and testing. Finally in chapter five implemented system will checked whether it is successfully implemented to attain the problem of the organization (i.e. tasting and evaluation).