**BODABODA HAILING MANAGEMENT SYSTEM**

DIT/2022/32703

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Computing project development approaches

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MAY 28,2023

DECLARATION

“I Muraya Timothy Macharia declare that this work is originally mine and not copied from anywhere”

Sign

Supervisor’s declaration

May 28, 2023

**DEDICATION**

I dedicate this project proposal to my family for being supportive to me I was carrying out this work financially and physically.

**ACKNOWLEGMENT**

God the almighty for giving me the strength to finish this research project

My family for being supportive ever since I started this work their steadfast support was duly needed

My supervisor MR Njagi Kevin for being there whenever I needed guidance and advice on how to carry this project

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# **1.0. INTRODUCTION**

Boda-bodas are normally used as a means of transport in Kenya and other parts of the world. Boda-bodas are normally rode on by riders. They are used to transport people and luggage from place to place because they are cheap and readily available. Boda-bodas can easily move in the interior places where vehicles can’t easily pass through because of maybe size and spacing of roads.

# **1.1. BACKGROUND INFORMATION**

Boda-bodas are effective this is because they can pass through roads that are not in good condition, we can also say that due to the small size like bicycles they can pass through small where vehicles that ferry people such as matatus and uber(S) can’t go because of their sizes.

# **1.2. PROBLEM STATEMENT**

Boda-bodas are good but they have one challenge that is hindering them to earn as much money as they should because of issues of distancing, for instance a customer is located in an interior location (rural) and there is no way he/she can get a boda-boda easily. People are struggling to travel because of such issues of distancing. We can easily say that boda-boda riders suffer for being located near bus stations waiting for passengers where customers are also having a huge problem in accessing this means of transport because, for instance I am a traveler and am located in an interior place it will be hard for me to travel.

# **1.3 PROPOSED SOLUTION**

We as Kenyans we are living in a technologically developing country where most of the Kenyans have smart watches ,smart phones ,laptops ,tablets e.t.c .With the help of people doing technological courses such as information technology , computer science and many more courses can create a software application that can be installed in those gadgets that most of as own. Having installed those gadgets people can now easily access boda-bodas all over the country whereas the boda-boda riders can install the application created and reach out to customers easily.

# **1.4 OBJECTIVES**

-To help ease the problem of boda-boda as a means of transport using the use of application websites where customers and riders can locate each other

# **1.5 JUSTIFICATION**

By looking for a way to ferry passengers from place to place using boda-boda as a means of transport it will be easy to transport luggage and customers from one place to another because there will be transparency between customers and riders

# **1.6 SCOPE**

In this proposal we will be discovering a new way of how passengers will be ferried from place to place easily using boda-bodas which they will be requesting rides from riders automatically using their smartphones.**1.6.2 WHAT WILL NOT BE COVERED**

In this project proposal we will not be able to bring the rating of a rider because it’s a new model being implemented therefore the ratings of a rider might follow after the booking of a ride using an electronic gadget

# **1.7 BUDGET**

|  |  |  |  |
| --- | --- | --- | --- |
| ITEM | QUALITY | COST PER ITEM | TOTAL |
| HP laptop | 16gb ram 1tb Gb SSD 2.9GHZ | 76,000.00 |  |
|  |  |  | 76000 |

# **1.8 TIME SCHEDULE**

|  |  |  |  |
| --- | --- | --- | --- |
| TASK | DURATION | EXPECTED START DATE | EXPECTED END DATE |
| Problem identification | 2 weeks | 01/05/2023 | 15/05/2023 |
| Analysis | 1 month | 15/05/2023 | 16/06/2023 |
| Design | 7 weeks | 16/06/2023 | 03/08/2023 |
| Coding | 2 weeks | 03/08/2023 | 17/08/2023 |
| Testing | 2 months | 17/08/2023 | 18/10/2023 |
| Implementation | 3 weeks | 18/10/2023 | 09/11/2023 |
| Maintenance | 2 weeks | 09/11/2023 | 23/11/2023 |
| Documentation | 1 month | 23/11/2023 | 14/12/2023 |
| Presentation | 1 day | 14/12/2023 | 13/04/2023 |

# 

# **1.8.1 GANNT CHART**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| TASK | DURATION IN WEEK(S)   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Problem identification | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  | |
| Analysis | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  | |
| Design | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  | |
| Coding | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  | |
| Testing | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  | |
| Implementation | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  | |
| Maintenance | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  | |
| Documentation | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  | |
| Presentation | |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  | |
|  |  |
|  |  |

# **1.9. FEASIBILITY STUDY**

Technical feasibility-my proposal can be developed using the current technology and materials available so as to make it good

Legal feasibility-my proposal abides the laws and rules given by the constitution it is liable to do it

# **CHAPTER 2**

# **2.0 LITERATURE REVIEW**

# **2.1 INTRODUCTION**

The boda-boda has a background information of where it originated from Busia county back in the early 90(S) where traders from Kenya needed to look for an appropriate means that would help them carry their goods to Uganda from Kenya and stop using bicycles because they would not carry as many goods and they were not very efficient. The traders found a better means that had low consumption of fuel.

Kenya has a strong technological growth that has helped in many ways of transportation such as small vehicles are mostly used as taxis and thus earning the country revenue. There are various organizations such as Uber cabs, Bolt rides and bolt cabs , FARAS cabs e.t.c. Each of the named organizations work good in Kenya and have a good name in the transportation sector because they are time consuming and are now beating the PSV(s) in the transportation industry in Kenya.

# **2.2 CASE STUDIES**

# **2.2.1 LOCAL CASE STUDY**

Our country Kenya is growing technologically with a very high rate where some things such as booking of rides from place to place are done online using electronic gadgets such as smartphones, laptops, smartwatches e.t.c. there are various ways in which this are done currently on some book their rides online via apps such as ;

1 uber app

2 bolt app

**1.UBER**

This is technology company that has reached so many people in our country where people are only expected to download the software application from the googles play store so as to be able to access the software, after downloading the application you sign in and give it access to your location through GPS tracker.

After accessing the application and you can easily access internet the customer can only open the software and book a ride at any place .From the driver’s side the driver can choose to deny or accept your ride .when your ride has been accepted by the driver and he is almost at your pick-up location he/she will easily send an SMS message that says “arriving now”.

During your ride you can rate the driver based on how the trip has been and also you can give points to your driver the driver can also from his side rate his/her customer depending on how the ride has been.

After the ride the driver from his phone can easily give the price reading on the app based on the distance where you were picked-up from to where the destination is using the GPS location tracker from his app ,but if the customer has been ranking you poorly, the customer might be given as free ride based on the reasons he/she gave during your ride depending on how cruel you were to your client also putting loud music on the vehicle.

Uber is a good example of a system that is working on the basis of technology but we can, using the ICT technology we can create a similar or better system that can be used in the boda-boda sector and thus helping the boda-boda riders and in large the boda-boda sector to use the ICT technology in the running of their business.

**2.BOLT CABS AND FOOD DELIVERY APP**

The bolt cabs are similar with the uber cabs thus competing in the industry based on what they offer against each other.

Bolt food app work hand in hand with the Kentucky fried chicken(KFC) where technology is taking over .KFC customers order their foods and drinks online from their homes to the hotel using the bolt food app .The orders are taken and prepared for delivery ,this is where now the bolt food rides comes in and they are given the location from the hotel to deliver the food(s) for the hotel to their esteemed customers .

Bolt food rides is a good thing but thinking of how many riders have the opportunity to work for KFC in terms of delivery are very low. Thinking of this in his project proposal we can have a thing that will work almost similar to that where the riders who are less privileged to have their own way of carrying out business where they can be receiving rides from some websites or application online via their phones and they reach out to customers effectively.

# **2.2.2 INTERNATIONAL CASE STUDY**

In the international sector there is still use of technological gadgets such as smartphones, smartwatches, laptops e.t.c to place orders to various things online and also request for trips and rides online regardless of current location provided you have access to the internet you can achieve all you want online.

Examples of organizations that operate online include 1 LYFT

2 SAFIRI APP

3 SAFEBODA

-LYFT is a transport application that is majorly used in Canada and the United states.

-SAFIRI is a mobile application that that enables an individual to book for a trip and buy tickets online in Tanzania.

-Safe boda-boda is a technological invention that its main purpose was to educate riders in Uganda.

**1.LYFT**

According to google, LYFT is a company that works majorly in US and Canada that sets specific requirements on the vehicles used by drivers and has a several different categories or levels of service. The LYFT app for smartphones notifies passengers of the drivers arrival and gives them an estimate cost in advance. In LYFT you get paid each minute a passenger is on board incase you are in traffic the driver gets a bonus because the vehicle read passenger on board.in this case you are not paid immediately after the ride as uber(s) your money will always be given every Tuesday from your LYFT account to your bank account.

**2.SAFIRI APP**

It is a mobile application that enables an individual to plan for a trip and buys tickets online for all modes of transport in Tanzania e.g buses ,trains ,boats , e.t.c .This is an application where you can book any mode of transport you require and pay for it online via the app because there is transparency.

**3.SAFEBODA**

Safe boda-boda is an organization in Uganda that was aimed to offer secure moto-taxi .Boda-boda riders were provided with trainings and helmets and hap users find the safe boda-boda rides from a mobile application .This helped boda-boda riders to acquire some knowledge than incase you get an accident and you had a helmet you are safer because your head wont be hurt.

# **2.3 CONCLUSION**

From the above case we can easily identify that boda-bodas are not considered as major sources of income to many parts of the universe and the country this giving a clear path of how the boda-boda hailing management system can move fast in the universe. This shows that we as the ICT team should join forces to come up with a suitable way that will help the boda-boda people because they are readily available in most parts of the Country and the world at large. The number of people using uber(s) and other taxis can not even be compared even to the number of people using boda-bodas, given in a scale of 1-10 boda-boda users that us it in day to day activity will get 7 this is because 1 of the scale have their own cars while 2 of the scale are people who have got the money to board taxis on their ways to work and shopping centers.

# **CHAPTER 3**

# **3.0 METHODOLOGY**

This research has 3 major components

1.Gathering of information on the problems and challenges that boda-boda riders face in their day to day activity

2.The design and the development of the prototype

3. Testing and evaluating the developed prototype

# **3.1 SYSTEM DESIGN MODEL**

In this project proposal I will use the waterfall model thus is because it provides an easy to follow structure that ensures that the project is completed on time. It will also help ensure that all stakeholders have their requirements and expectations met. The requirements are well understood and not likely to change.

# **3.2 DATA COLLECTION**

In carrying out the project proposal I will use various methods of data collection such us

1 Observing-I will easily use observing because I will directly see from a distance how boda-boda riders struggle to get customers because the riders compete to get customers from bus stations.

2 Questionnaires -I will give some questionnaires to boda-boda riders asking them on their opinions on how they could see being called by customers via phones rather than staying idle on bus stages competing against each other for customers

# **3.3.1 TARGET POPULATION**

The target population o thus project proposal will be the boda-boda riders and some business people who use boda-bodas on daily purpose as a means of commuting from place to place .Reasons as to why my major target will be the riders is because I would like to remove them in the error of staying in bus stages each day waiting for commuters of boda-boda ,also in a rough day of work some riders will spend their day waiting for customers by the end of the day it will be a loss to the owner of the bike and the rider for one the owner will get nothing in return and also the rider will have gone a loss of fueling the bike and gets nothing in return.

On the other side business people who use boda-bodas on daily basis will be helped because they will stop relying on riders who they have their contacts, because in one reason on another the person that they rely depend on can get a job earlier on that day and fail the daily customer.

# **3.3.2 SAMPLING TECHNIQUES**

I will use stratified sampling method reason being it ensures that each work or sub group within the population receives proper representation within the sample. Another reason is because it gives a more precise information about something.

# **3.4 DATA ANALYSIS**

In this study I as a researcher will use qualitative, quantitative and exploratory design to identify and analyze the challenges the boda-boda riders go through with a view of using technological studies such as computer science, information technology, and software engineering in improving their daily operations.

# **3.5 LIMITATIONS OF THE STUDY**

One of the challenges that a researcher May come across is the issue of having unreliable data. Without clear data you can’t be sure of anything that you are carrying out as a project.

# **CHAPTER 4**

# **4.0 SYSTEM ANALYSIS AND REQUIREMENTS MODELLING**

# **4.1 CONTEXT DIAGRAM**

BODABODA HAILING SYSTEM

Notifies the rider on order

Am coming Places an order

Receives rides from phone confirms to the customer

He is available

# **4.2 DATA FLOW DIAGRAM**

Uses smartphone to request ride to boda-boda rider and includes pick-up location and destination of the trip

After destination customer asks the price from boda-boda

Receives request and sends a message of confirmation to customer, after arrival ride starts.

Looks for price from his app ,price indicated from the GPS tracker and tells the customer

Pays for the trip whether by cash, mpesa or ATM according to the means that the driver finds appropriate to him

# **4.3 ENTITY RELATIONSHIP DIAGRAM**

students business people time efficiency speed

CUSTOMERS

PRODUCTS

MANAGEMENT SYSTEM

PRODUCTS

teacher safety

students teachers

business people speed

transparency reduced movement

# **4 .4FLOWCHART**

REQUEST FOR RIDE ONLINE

PICKUP LOCATION

AM COMING IN A FEW

PAYMENTS METHODS

TAKEN TO DESTINATION

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