DESIGN AND DEVELOPMENT OF AN ANDROID APPLICATION NAMED

KANTA

 \mathbf{BY}

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This Report Presented in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science and Engineering

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APPROVAL

Design and Development of an Android Application named "KANTA", submitted by Nupur Chandra Pal, ID: 152-15-5762 and A.K.M Monzurul Haque, ID: 152-15-5546 and Sanjoy Kumar Ghosh, ID: 152-15-5957 and Md Zahidul Hasan, ID: 152-15-5547 to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering (BSc) and approved as to its style and contents. The presentation has been held on 04-05-2019.

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We hereby declare that, this project has been done by us under the supervision of Shah Md Tanvir Siddiquee, Senior Lecturer, Department of CSE at Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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ABSTRACT

KANTA is a android based online e-commerce system. This is a application which is specially made for the unemployed women of our country. There are many women in our country who are not allowed to go out for work and have to settle being housewife. We mainly focus on the women who are good at hand craft, food recipes, paintings or any kind of art or skilled work. As it is a online ecommerce platform an user can log in as a buyer or seller. If an user login as buyer then they can buy anything they want and buyer can be anyone buyer can be man or women anyone. But for the seller the user must be a women because our main purpose is to highlight women and their skill. In the application there are few categories like pickles, series, hand craft products, homemade furniture's, paintings etc. For login the user just have to give their number and an OTP confirmation will come from the firebase and the code will be popped up by the the app when the code come by the server. We have worked on the security of our application and for that we have made login depend on number so that every id will be unique by their numbers. The buyer can also log in with the same way. Our application is mainly a online platform which will create a great market for the women as they will easily earn from staying at home.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

KANTA is a synonym for nari (Bangla word) which means women. The reason for naming this project KANTA because our main purpose was to highlight women and make a online market platform for them so that they can earn by themselves and help in their domestic cost. Everything have come in our smartphones now, for example from (uber, pathao) is the great example of our development in the modern times. For medical consultants we have apps, for food delivery we do have apps, even for the house wives who are interested in cooking there is a app called food peon. So, we came up with an idea of making an app named "KANTA" for those housewives or women who have skills to provide but unable to work outside. Skills like cooking, handcrafting, or other skills to provide valuable products to society. Our application is an android based application which is going to make a platform for the women to earn via outsourcing. And is not just for selling food or just selling crafts, they can sell anything handmade and they can also share their knowledge to others by uploading videos of their skills. If anyone want to teach how to cook, they can make a tutorial. Or if anyone wants to teach how to make bags, they can also make tutorials for that. One of the main reasons of making this application was, a lot of people in our country who are hungry for art and culture and specially for handmade products. Our project will be a great news for them. There is lot of third parties who are giving less moneys to the real artist of handmade crafts like nakshi katha, terakotha, muslin, jamdani, sital pati, bamboo craft, silk etc. They won't be able to make business anymore because our application is creating a connection between buyer and seller, and there is no third party in it. Transaction will be limited into only buyer and seller. And we are not planning of earning any money out of it nor we are planning of taking any profits out of it. We just made this application just to build women economy a little bit powerful. Specially if the women of rural area start earning by our app then it will bring a great difference in our society. And for that we have made our interface so easy and simple thinking about the women who are not educated enough. So that every women can use this application easily.

1.2 Motivation

There is always a reason behind everything. And many things worked as motivation for us for making this app. But the main and most important of them is to make women economically strong.

- (i) Reducing women unemployment: The unemployment female graduates about 2.5 times more than their male counterparts: 16.8%, according to QLFS 2015-16 by B.B.S. And there are many women who are not even graduates and did not have chance to pursue education. So KANTA will open platform for everyone who can provide any goods to society.
- (ii) Giving market place for women: As there are still many women in our country who can't go out for work for their family or for other problems. So by "KANTA" women can easily earn money by selling craft products or providing other goods.
- (iii) Keeping our culture alive: For low prices of crafts and other handmade art of our country people are slowly losing interest in creating them. As a result there is not so much of crafting art seen now-a-days. And there are lot of people who seek artistic craft and designs. But for the lack of connection toward the people who knows it this culture and artistic gift of our country vanishing day by day. So hopefully our application will bind a connection between them.
- (iv) Creating opportunities for the rural areas women: In the cities the education rate and the number of women working outside is quite larger than the rural area. In the rural area, a lot people still thinks that women should not work outside they should be in the home and take care of the family and their children. So they never get the opportunity to earn by themselves. "KANTA" will provide them opportunity to earn and give something to the society.
- (v) Low price value and platform: for not having required platform. The people are not interested in this anymore. And some third party are paying them very low price and selling that same thing at very high rate so this application will provide a platform to them to sell their products by their own.

We had a lot of reasons to create this application. But the main point of creating this is to highlighting women talent and creativity.

1.3 Objectives

- > Same platform for Buyer and Seller.
- ➤ Profile of seller with their products including ratings and reviews.
- ➤ Verified buyers profile.
- > Categorized product.
- Product demo picture with seller profile.
- > Strong security system.
- > Training opportunity for new seller.
- > Skill sharing option for every seller.

1.4 Expected Outcomes

The primary outcome of the project is to have a digital marketing platform for the women. The main change this will bring is that there will be no third party between the buyer and the seller. So the full profit will go to the seller. Some important outcomes that we expect are given bellow:

- (i) Housewives will start working: As our main purpose was to create a platform which will especially help the housewives to earn. Because in lot of families in Bangladesh the housewives cannot go for income. So this project will make a platform for them.
- (ii) Women will earn by staying at home: As lot of women are not allowed to get out from house in the matter of safety or family. So this project will help them to earn by staying at home.
- (iii) Direct connection between buyer and seller: There are lot of third parties who are doing business of handmade crafts. And they pay the real worker less for the product and sell the same product at a very high price. So by this project there will be a direct connection of buyer and seller so there will be no third parties to take the maximum profit.
- (iv) People will be attracted by the real product: Now-a-days artificially made crafts are being sell by the name of handmade craft. And for that reason buyer loses interest over handmade crafts and all. So by this project buyer will be sure of the quality of the products to buy.

(v) The economy will rise: if the unemployed percentage of the women start earning then automatically the economy will rise and the economy will be well balanced.

These are some expected outcomes that we think our project will bring.

1.5 Report layout

In the below section of our report we will talk about our work briefly. In chapter 2nd we will discuss about the background of this project, related work, comparative studies, problems, challenges that we faced during making this project. Then in 3rd chapter we will discuss about requirement specifications, use case modeling and description. We will also discuss about logical data model and design requirements. In chapter 4 named design specification we will discuss about front end design, back end design, interaction design and UX and also discussed about implemented requirements, Design specification. In chapter 4 we will discuss about Implementation and front-end design and implementation of interaction along with testing implementation and test results and reports. In chapter 6 there will be discussion and conclusion and scope for further developments. In appendix A: project reflection,

Appendix B: Related diagram we will talk about References and appendices.

CHAPTER 2

BACKGROUND

2.1 Introduction

We have made an application is totally different from others. The main reason of making this application wasn't any business purpose or self-purpose. We just made this application just to make a platform for those women who are not able to earn although having talent. Basically it's an online marketing platform for women. And its created for the rural area's women mostly. Because in cooking or in making handmade products rural areas women are pretty good on that stuffs.

2.2 Related Works

Collaboration among buyer, seller is the concept is quite common in both and android applications. Before planning of this project we researched about the related works or projects which are already exists. And we got a lot of things related to our work. The Literature review of "KANTA" is given bellow. This review will describe the similarity and dissimilarity of our project with the existence.

2.3 Comparative Studies

There are many applications been made in our country which are quite similar to ours. But we came up with the unique idea just to glorify women empowerment. and just making a online market for women who are not able to work outside.

2.3.1 Bagdoom

Bagdoom is actually an online shopping application. It has both web and android application and honestly bagdoom is one of the rarest apps in Bangladesh which is similar to our work. Only on bagdoom you will find craft art and craft designs and goodies. Bagdoom is a great marketing place and you will find cloths to everything. But bagdoom is an advertising market place. Nobody is selling real handmade stuffs here so this could be a great difference with us. And also bagdoom doesn't have the option of food service that we have. And our project is mainly focusing on the women's employment so that is quite unique project for app development.

2.4 Scope of problems

To make this project we have faced some difficulties. These difficulties are not only from development side but also they are coming from complex mechanism and high end technology. Some of the difficulties we have faced so far are given below.

- ***** Complex developing structure.
- Creating order list was a great challenge for us.
- ❖ Paid payment mechanism.
- ❖ OTP verification was really tough for us.

2.5 Challenges

- Seller's privacy.
- Transaction system.
- **&** Building a simple user interface.
- Calculation of data is also a changes for us.
- Order list.

CHAPTER 3

Requirement specification

3.1 Business process model

It is a process strategy of a company's business technique and work betterment, process of identifying possibility of improvement. It can be done following many procedure like flowcharts and data-flow diagram.

3.1.1 Business processing model (Agile method)

We are using agile method as a business processing model of our project for causes given below:

- We needed short changes many time.
- It provide us fast feedback.
- Its provide urgency with focus.
- It help a series of interaction.

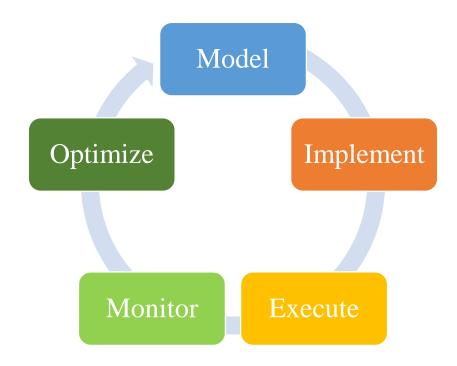


Figure 3.1.1: Business processing model agile method

3.2 Requirement Collection & Analysis

3.2.1 Software Requirements:

❖ IDE: Android Studio

❖ Android virtual device

Database: Local database

❖ Storage: BroSolved.com

❖ Authentication: Firebase

Laravel

3.2.2 Hardware Requirements:

Operating system: Windows

Android supported device

Computer configuration:

➤ RAM-4GB (minimum)

➤ Hard Disk- 500GB (minimum)

> Processor- 3.20GHz (minimum)

3.3 Use Case Modeling and Description

It is a process that enables a client to interface at least one than one client who are outsiders to the database. Each utilization case are give some sensible, to the point and genuine result to the client or suppliers of the application. It is utilized for the determination of necessary data, why those are needed, what is the need of those necessary data, what should be finished by the server, how the necessary data present with the encompassing so it can concession its administration.

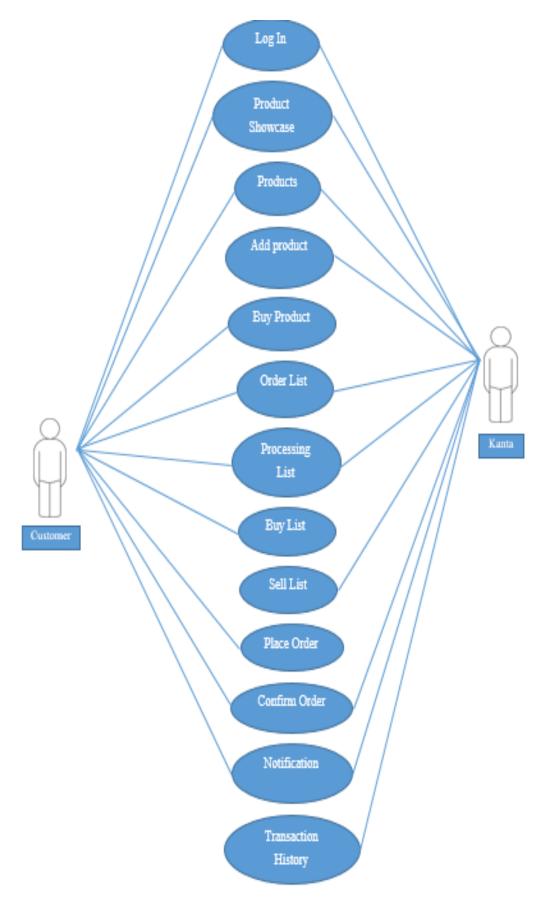


Figure 3.3: use case diagram

Use cases	User of the application
Primary actor	User
Pre-condition	User must have a mobile number. User must have to enter their name. And they have to login as a buyer or as a seller as they want.
Description	The user can have all the services if they have an account. If they have a buyers profile they can buy all the listed services. and if they have a sellers profile they can upload all the products listed in the category.
Post-condition	If they login as a buyer they can not access the sell list but if they login as a seller they can access the order list that which products has been ordered.

Table 3.3: Illustrates the idea of use cases of different users.

3.4 Logical Data Model

Legitimate information models speak to the dynamic structure of an area of data. It is a guide of the opening venture. Access this client need his/her NID, date of birth, email and secret key. After that client can utilize his/her information. Framework will give those information in genuine time. Client can offer criticism to the framework.

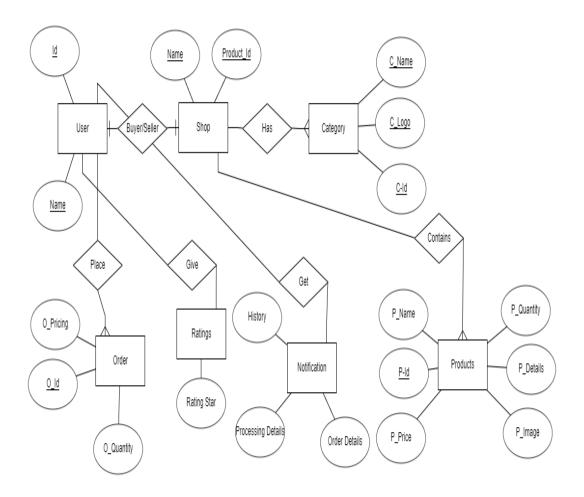


Figure 3.4: E-R diagram of the proposed model

3.5 Design Requirements

- ❖ The system will be used by user who are mainly women. But men can also use this system as a buyer only.
- System admin will control database.
- ❖ User will create account or login as both buyer and seller.
- ❖ User just have to give the number and an OTP confirmation will come to verify their number after that they can enter their name and other information.
- User can send data.
- User can edit data.
- ❖ The images of products will save in the database.
- ❖ The total number of the product will update every time a product take entry or removed or sell out.
- ❖ Admin can edit or remove any data or account if it's needed.

CHAPTER 4

DESIGN SPECIFICATION

4.1 Front-end Design Specification

In front-end design we kept our design unique and simple. So that the outlook seems different and interesting but simple and user friendly too.

4.1.1 Login

In this page user can choose an option what's he want as a buyer/seller for login.

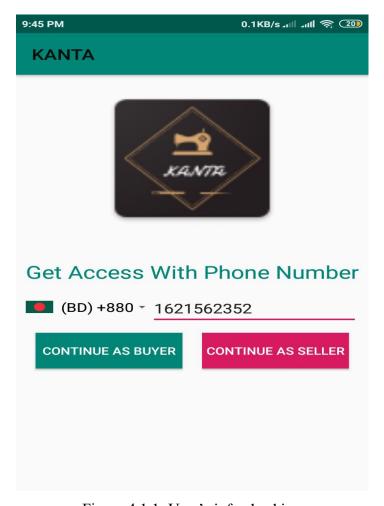


Figure 4.1.1: User's info checking

4.1.2 User authentication

First of all user have to provide user's phone number to check if his id is already open. we used firebase query to authenticate user. if the user already have an id then he have to log in. otherwise he have to sign up.

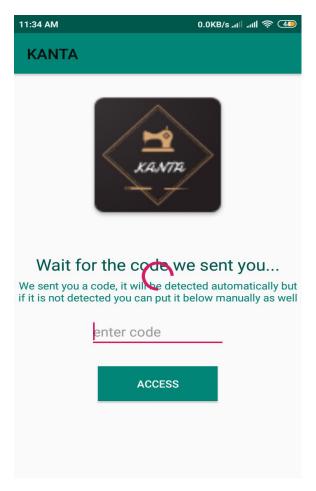


Figure 4.1.1: User's data checking

4.1.3 Updating Name

After signing in you can simply update or edit your information.

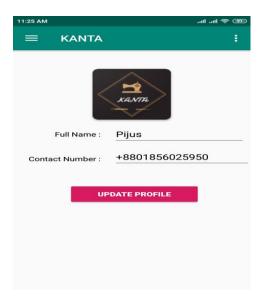


Figure 4.1.3: Updating Name

4.1.4 Home page

After log in, user will see the home screen. on home screen everything is o recycler view. rdered systematically. Navigation bar was made by using circle image View and recycler view.

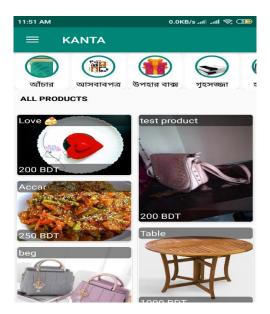


Figure 4.1.4: Home page

4.1.5 Navigation

Navigation was made by using circleimageview.

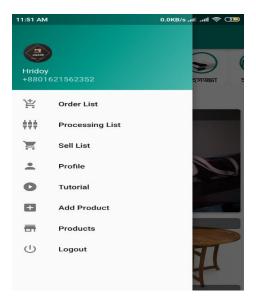


Figure 4.1.5: Navigation

4.1.6 Add product

In this option one can simply add a product by its name, price, category, image and description.

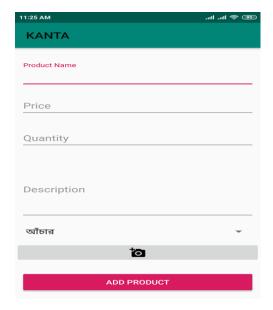


Figure 4.1.6: Add product

4.1.7 Product update and delete

In this option sell can update and delete product.

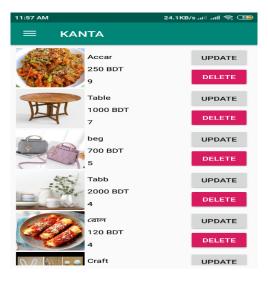


Figure 4.1.7: update and delete

4.1.7.1 Product update

In this option one can simply update an product by its name, price, category, image and description.

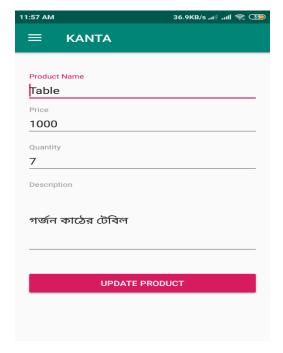


Figure 4.1.7.1: Product update

4.1.7.2 Product delete

In this option one can simply delete a product.

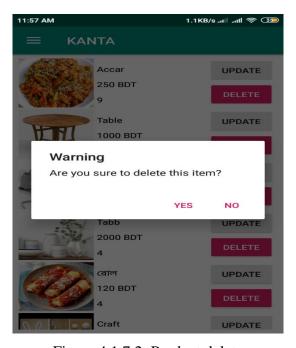


Figure 4.1.7.2: Product delete

4.1.8 Categories product

In this option for user can see the product in which category.

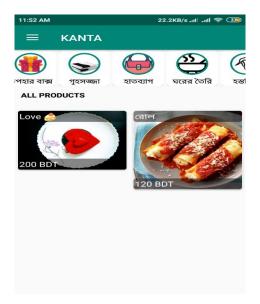


Figure 4.1.8: Categories product

4.1.9 Product details

In this option for user can see about product with image, available product, price, description and also can order the product.



Figure 4.1.9: Product details

4.1.10 Product buying process

In this option for user can buy easily an product.

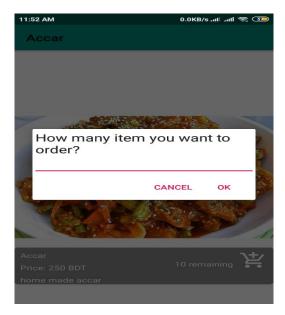
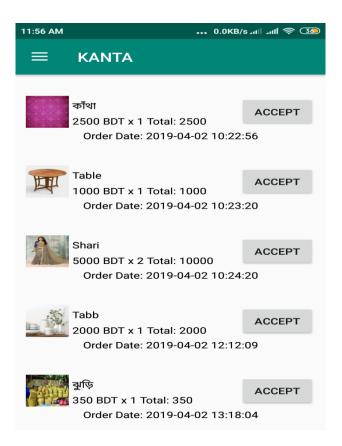


Figure 4.1.10: Product buying process

4.1.11 Seller order accepting

In this option for seller confirm the product which is order by a buyer.



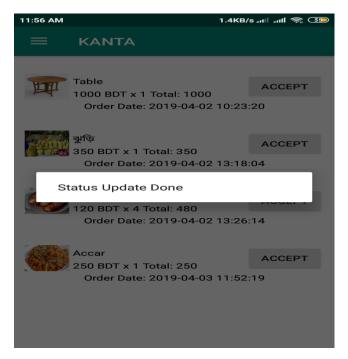


Figure 4.1.11: Seller Order accepting

4.1.12 Order processing list

In this option for seller and buyer to see which product in process.

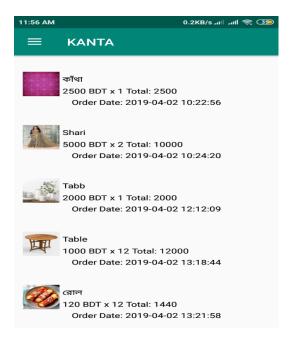


Figure 4.1.12: Order processing list

4.1.13 Buy/Sell list

In this option one for buyer and seller to see which product he/she selling and buying.

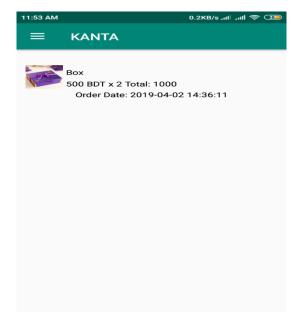


Figure 4.1.13: Buy/Sell list

4.1.14 Tutorials

In this option user can see how to make this product and other detail through YouTube.

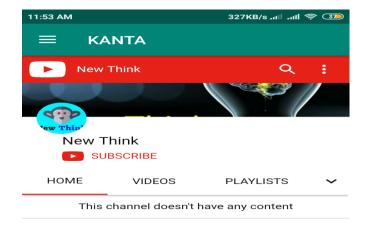


Figure 4.1.14: Tutorials

4.2 Back-end Design Specification

- ❖ Whole process will be divided into two parts (buyer and seller).
- ❖ All of them have registration and login system.
- Profile of user fetch from the database through number of the idPayment mechanism
- Order list, buying list and processing list being fetched from the id and product IdVoice
- ❖ There is a system of ratings by which you can rate the seller.
- There will be an order list where the buyer can see what he had ordered.
- Category of all products.
- The images in dashboard fetched by product id
- ❖ For fetching the data from json to gson (viewing format of android) we used retrofit
- Category is built in.
- History being fetched from id.

4.3 Interaction Design & UX

Despite of being a huge system of backend work load we have tried to make comfortable, easy to understand user interface by android X materials and library files the extension we've use is a android X's life cycle extension.

4.4 Implementation Requirements

Implementation for out proposed project are divided into some parts

- ❖ Used Technology: The main requirements for our project are some web technology e.g. AndroidX, XML and Laravel. We have already discussed detailed in chapter 2.
- Programming Language: JAVA
- Scripting Language: XML
- Database: Local database (brosolved_kanta)
- Server: BroSolved.com
- Authentication: Firebase
- ❖ Tools and Sites: Android Studio, Laravel etc.
- ❖ Teamwork: A stable team with active team members.

CHAPTER 5

Implementation and Testing

5.1 Implementation of Database

We used BroSolved.com an online real-time database server for data storage. Firebase hosting being used for host user data. User can update or entry their data. User's data can be inputted by the users. This data is saved in the database. Category wise all the data are stored in the database.

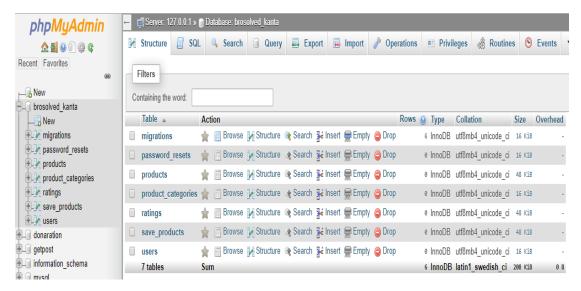


Figure 5.1: Implementation of Database

5.2 Implementation of front end design

We kept our front end design very simple and attractive. We added navigation layout, scroll view layout, buttons, search bar and many more feature to make our design attractive and user friendly.



Figure 5.2: front-end-design

5.3 Implementations of Interactions

5.3.1 Platform Choosing

When a user try to log in, they have to choose a platform either as Buyer or as Seller. One user can only choose one platform. The user cannot choose multiple platform.

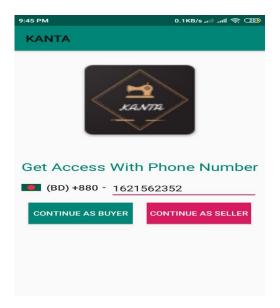


Figure 5.3.1: Platform Choosing

5.3.2 Buyer and Seller Interaction

Buyer and Seller both have order list, processing list, Buy list and sell list. When Buyer buy anything it will confirm and processed after Seller confirmation. Both of them have history of their orders and transaction.

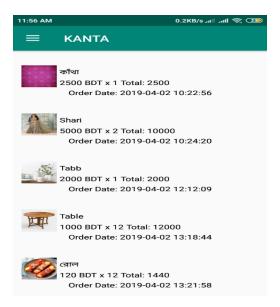


Figure 5.3.2: Buyer and Seller Interaction

5.4 Testing Implementation

Implementation Testing is a technique to check the specification of technology by execution of mechanical approaches. Testing all the formulated action before implementation is called testing implementation. For developing reliable and error free system or an application testing implementation is an essential part. This process checked the approaches it works in real life and shows the failure of an application. It helps to ensure the quality of the application by settling the failure.

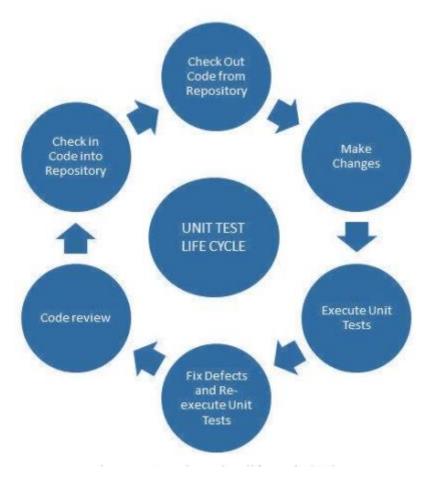


Figure 5.4: Unit testing life-cycle

5.5 Test results and Reports

Testing name	Supported Case	Limitations
Number Validation	User can use any 11-digit mobile number and have to follow the number-format.	Less than 11-digit or not having valid format cannot be detected.
OTP	6-digit One Time Pin for verification.	Not supported when internet connection is poor.
Add Products	User can add their product in different category with details and picture.	If product picture size is large than, take time to upload.
Delete Product	User can Delete Product which they are not needed.	At the time of deletion.
Update Product	User can update their product with editing all details.	Can't update the product picture.
Add to Cart	Purchasing product are store in cart.	After adding in cart, no way to delete it.
Profile	Have a profile with name and mobile number.	Don't have any profile picture.
List	Buyer and seller have order list, processing list, sell list.	After seller confirmation product goes on list.
Tutorial	Skill sharing platform for new learner.	Need high speed connection for upload skill video.

Table 5.5.1: Test result and repots

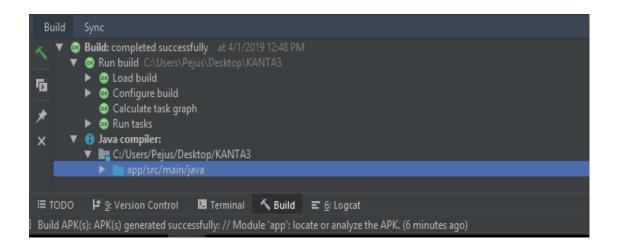


Figure 5.5.2: building and testing

CHAPTER 6

Conclusion and Future Scope

6.1 Conclusion

Doing this kind of work as conclusive year project includes incredible luck for us. Because, first it helped us to develop our certainty to accomplish something significant, something other than what's expected. Then again, there is no uncertainty that, it is an immense work for some fledgling understudies like us. The main goal of this project was to make an online platform for the unemployed and unprivileged women of our country, who are either not educated enough or lucky enough to get out to do a normal job.

We have experienced numerous difficulties and challenges amid the season of working for this undertaking and for these, we learned so many things – both technical, ethical and professional. When we first started working, we had lack of technical experience that we have learned through working in the project. And another thing we have learned is teamwork. There is such a long way to go regarding group working since it is essential, viable, profitable and troublesome. So for this cooperation our polished methodology additionally improved strikingly and we trust this will be a fit buddy for structure up our vocation.

Though there are some limitations of our project but there are many good features too. The most important thing is KANTA will help a lot of unprivileged women to earn by their own self and put economical balance towards their respective family. We have included a great deal of features in this application.

6.2 Future Scope

We want to contribute this project for the people of Bangladesh so we are expecting govt. help in this regard.

- Add new features.
- ❖ Add online payment system in it.
- ❖ We will make it more secure.

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APPENDIX A: Project Reflection

We have learned a lot by doing this project. We now have a better idea of android studio and laravel than before. We have learned about firebase database and authentication by doing this project. We have learned about time management and teamwork and now we are quite familiar with the users need in realistic way. We also have learned how important user's data is, so that we have put all our efforts to make our application secure as possible.

APPENDIX B: Related Diagrams

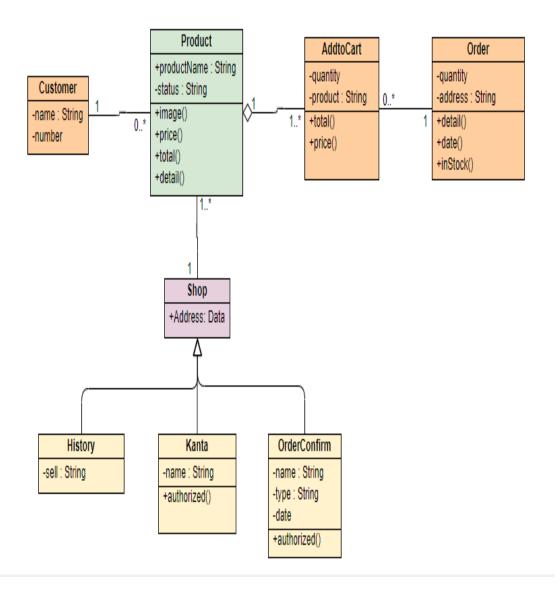


Figure: UML Diagram

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