Android Based Mobile Application Krishok Bhai

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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

This Project titled **"Android Based Application Krishok Bhai",** submitted by Maruf Alam, ID No: 173-15-10356 and Md.Nurnabimiah, ID No: 171-15-8923 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 and approved as to its style and contents. The presentation has been held on 6 january,2022.

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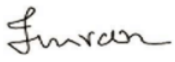

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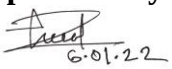

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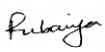

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ABSTRACT

Krishok Bhai is an e-commerce based android project. And a well-organized application that is very useful for farmers, customers and intern students. Farmers and customers for a sell and buy all types of crops, animals, fishes etc. Intern students get available animal diseases resources, fish diseases resources, and crops diseases resources from farmers and the intern student research to them. In this project we are developing android based project. In the previous years when farmers doesn't get the fair price, our country situation faced to very ignominious. Farmers are producing our daily needed product but they do not sell the product fair price for syndicate problem. So, we are very concern about this matter. That's why we have made an android project which helps to provide information of market prices that can help farmers sell their harvest effectively and be more confident about their own pricing policy. Therefore, to solve the problems of farmer's product through specialist. Farmers can easily submit their crop's problem in this app and also directly connected with video meeting .After submitting the problem, the specialist give the answer quickly.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Bangladesh is an agricultural country. Most of the people of Bangladesh are dependent on agriculture sector. Most people in Bangladesh are involved in agriculture and it is the biggest employment sector in Bangladesh, awarding 19.6 percent to the National GDP and providing employment for 63 percent of the population, 80% people of our country are connected to the agriculture sector.

But in this time, farmers don't want to work agriculture. Because farmers don't get the fair price for their products. In this concern, we have made the android based application, "Krishok Bhai", which farmers and customers are directly connected with each other. Farmers can easily sell their product original price and customer also get the fair price. Farmers can easily connect with the specialist and submit their problems. The most interesting thing about app is that intern students will be able to do research on new crop diseases, hatchery diseases, and animal diseases. Therefore, mobile app is the current tendency in the modern world. Each and every domain has ios/android based applications. But there has been comparatively less progress in agriculture sector. Since agriculture being the base of job our nation and if we want to improve our sector, we well definitely need software and research. Our agriculture app will also provide instruction of latest technology, tools, method, price and fertilizer. This project aid dynamic updating and acts as guidelines for farmers.

1.2 Motivation

Krishok Bhai application is to make a proper and complete agriculture related app. The main motivation of this app is to improve the farmer's condition by the help of an online platform. By using this app users can find solutions to their crop's problems from specialists. In order to the mission of digitizing Bangladesh as our Prime Minister Sheikh Hasina said, this project will make the farmers more digitized. Another motivation is to

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make a platform to sell the farmer's product at a fair price by presenting a direct interaction between buyer and seller. We want to support farmers for sustainable farming practices.

1.3 Objective

1. To solve the problems of farmer's crops through specialist. Farmers can easily submit their crop's problem in this app. After submitting the problem, this app will send the problem as a notification to all users.
2. Making a platform to reduce the interference of middlemen and fraud for selling of farmer's products and presenting a direct interaction between buyer and seller through online update so that farmers can get their fair price by selling their yields.
3. Provide information of market prices that can help farmers sell their harvest effectively and be more confident about their own pricing policy.
4. Provide accurate advice and proper information to use the organic fertilizers as it will reduce the use of chemical fertilizer so that many health and environment related problems will be solved and the management of organic waste will also be done.
5. To be a platform for farmers enabling them to access government information and services.
6. To train the farmers on the use of mobile app, organic fertilizer production methods and other sustainable farming practices.

1.4 Expected Outcome

1. Farmers will get a user-friendly online platform to solve their crop's problem.
2. Farmers can get their fair price by selling their yields so that they will pay more attention to agriculture.
3. Interfere of middlemen and frauds will be reduced in the selling of farmer's products.
4. Farmers will involve themselves to use organic fertilizers instead of harmful chemical fertilizers that will be beneficial for the environment.
5. Farmers will get a chance to participate in many training programs which will be related with modern technology, soil management, waste management etc.
6. Farmers will be smart farmers through joining themselves in this project.

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7. Farmers will be updated by learning of modern and sustainable agricultural techniques.
8. Overall, this app will help to improve the condition of farmers. As Bangladesh is an agricultural country, its economy depends on agriculture. If the agricultural sector improves then the country's economy will be improved.

1.5 Report Layout

In this part, we will discuss about the report layout. In first chapter, we are talking about Introduction and a plan how will do the work, what is motivational behind this work, what are the objectives and outcomes. In second chapter we have discussed backgrounds, related works and what the challenges we have faced. In third chapter we have discussed the procedure how we have completed the work, process flow diagram, use case diagram, functional requirement, requirement collection and analysis, design requirement. In fourth chapter we have discussed Design specification, front-end part, back-end part and Implementation requirement. And in five chapter we have discussed Implementation and experimentation**.** Last chapter, we have discussed the conclusion and upcoming work.

CHAPTER 2

Background

2.1 Instruction

Our application main goal is to sell the crop to the farmers at the right price. We work on the area of agriculture sector like diseases detect with specialist doctor, contact list of the agriculture officer. Farmers will be able to talk to agriculture officer and can solve to their problem. We have tried to solve all the problems of the farmers through this apps.

2.2 Related Works

In the past, several apps have been created about agriculture in Bangladesh. Some application names are given below:

2.2.1 Krishoker Ghor

It is an ecommerce app. They collect goods from the farmer and sell them to the people. Their promising issue that they collect the crops directly farmers [1].

Fig 2.2.1: Krishoker Ghor

2.2.2 Krishoker Janala

Krishoker Janala doesn't give the delivery support. It contains vegetables, filed crops, plants and other reasons, the problem is the shortage for the fertilizer. The problem and its solution has been added [2].

Fig 2.2.2: Krishoker Janala

2.2.3 : Krishi Tottho

“Krishi Tottho” contain filed crops, vegetables, fruits and other plants. After they have the different suggestion for the crops many pesticides solution. User can chose one and best option to detect of the crops. This app problem is shortage of fertilizer [3].

Fig 2.2.3: Krishi Tottho

2.2.4 : Krishoker App

The government collects paddy from farmers through this app. This app is for the farmers to get a fair price and not to be deceived by the exploiters. Farmers can apply directly to the government to sell paddy. This app have been developed with the aim of enabling ordinary farmers to get government services at their fingerprints [4].

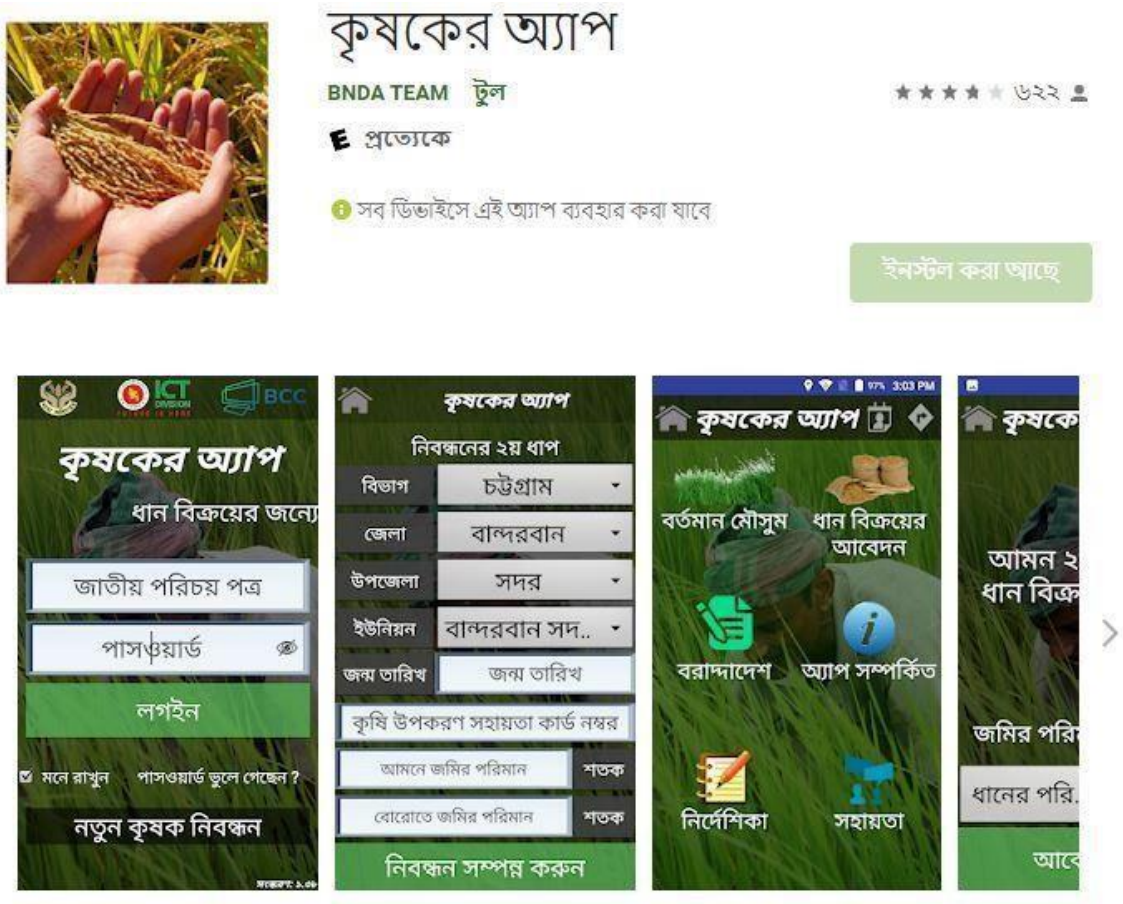

Fig 2.2.4: Krishoker App

2.2.5 : Krishi Doctor

Farmers often suffer due to lack of proper advice in agriculture work. Proper management of disease control can be a way to get better yields. Through this app, farmers will get early guidance on crop diseases [5].

Fig 2.2.5: Krishoker Doctor

2.3 Comparative Work

There are many kinds of apps already have been published about agriculture in Bangladesh. But none of the apps have full fill features. Different types of application have different types of features. Most of the application have some problem and limitations.

But we provide lots of features in our android based application Krishok Bhai such as agriculture based technology, buy and sell products, cultivation technique, describes many types of crops diseases, fish's diseases and animal's diseases and farmers directly contact with agricultures officers. Farmers also get facilities that agriculture related problem solving and get problem solution feedback very quickly. Even those who want to do research on agriculture sector will get a lot of important information from farmers through this apps. Farmers directly sell their product to the customer through this app.

2.4 Challenges

Bangladesh is still being a developing country. Most of the farmer unaware about new technology. They do not use it properly. So, our major concern is user interaction. Users don't like to the complex interface and also like the clear and attractive interface. So, the function of the app should be very clear and simple. Still now, our farmers follow their poor traditional farming which are ineffective and inefficient. So, our main challenge is introduce to our system and help them learn how to use the system.

CHAPTER 3

Requirement Specification

3.1 Process Flow Diagram

A process flow diagram is a principle visual blueprint of business process. It is also called workflow. It procures a graphic overview of the business process. It using structured shapes and symbols. The workflow shows step by step how work is done from start to end [6].

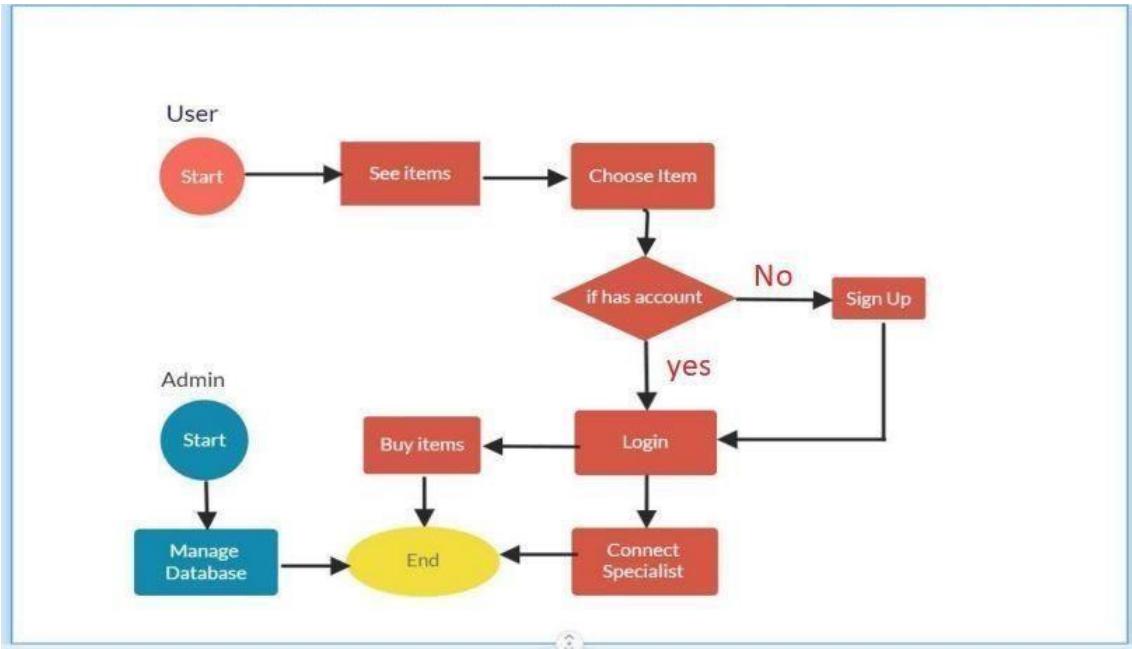

Fig 3.1.1: Process flow diagram

3.2 Use case Diagram

The use case diagram represents the user interaction of a system that shows the relationship among the user and the different use cases in which the user is involved [7].

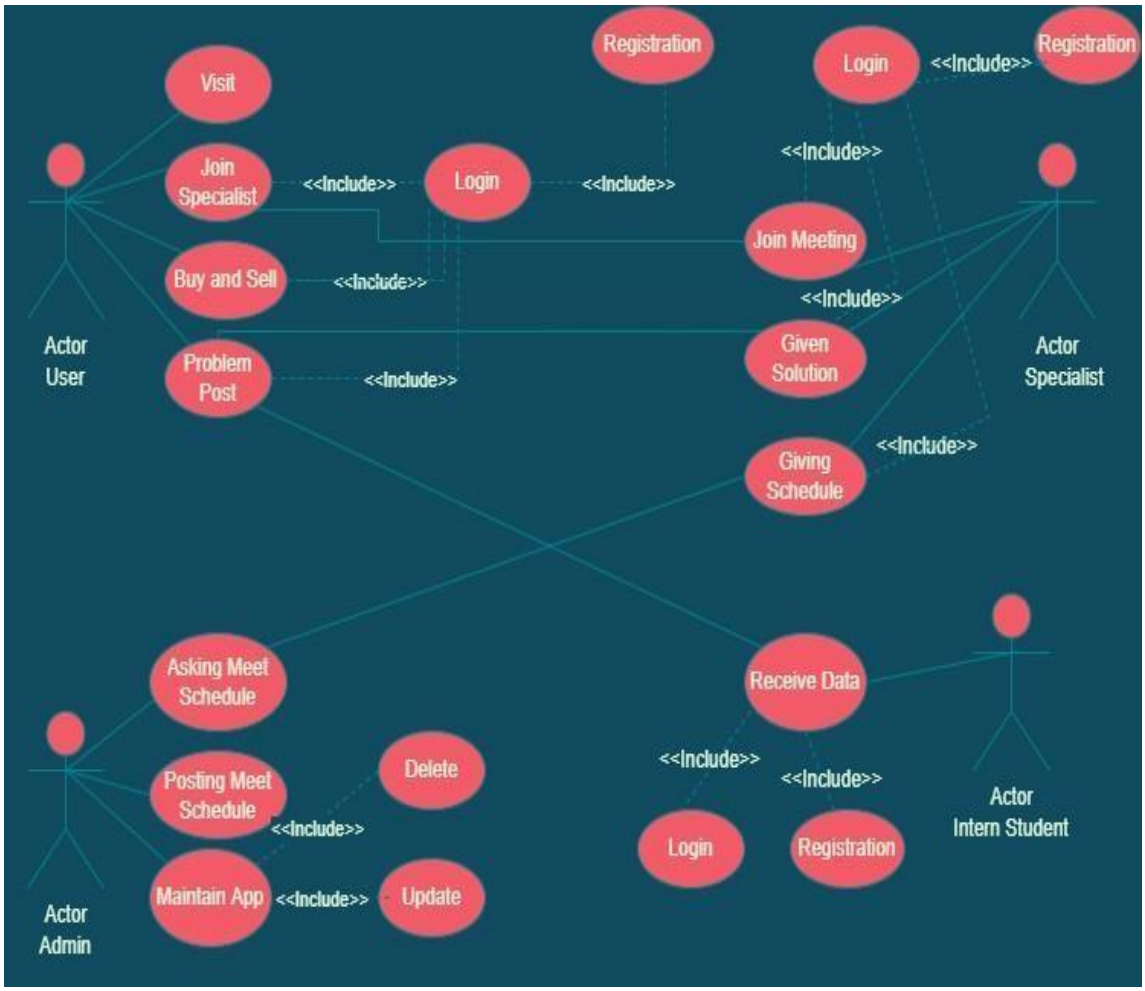

Fig 3.2.1: Use Case Diagram

3.3 Requirement Collection and Analysis

Requirement analysis and collection are the most important requirement for any development process. We have collected the necessities requirement from the farmer, filed and Mymensingh Agriculture University.

3.3.1 : Functional Requirement

- User Registration
- Users Login
- Users Dashboard
- Contact with Agriculture officer
- Customer directly contact with the farmer
- Research Option

3.3.2 Non Functional Requirement

- Provide text in Bangle
- No user limit for browsing the application
- System user interface should be user friendly
- Anyone who knows English and Bangla use the application

3.4 Design Requirement

Every application design part are very important part. It makes the application unique from any other exiting application. In application we focused farming facilities and the farmers need. We have designed our application with the following features.

- In our application, there are four user farmers, admin, agriculture and researcher.
- Admin can control the full application. If he wants he can do the update data.
- The user has to create an account to store his data and log in to use features.
- Clients will give some data like name, telephone name, and so on.
- If the users see the unique features, he must connect with the internet

CHAPTER 4

Designing Specification

Designing Specification is a simplification of how to develop a design. In this episode, we try to demonstrate the applications front end and back end design. We used to create this some instruments and platform available in this application.

4.1 Front-end Part

In developing site front-end part is the most important unit. It works like as introduction layout. Users are directly connected with front end design. This part is intended for the user.

Fig 4.1.1: User Interface 1

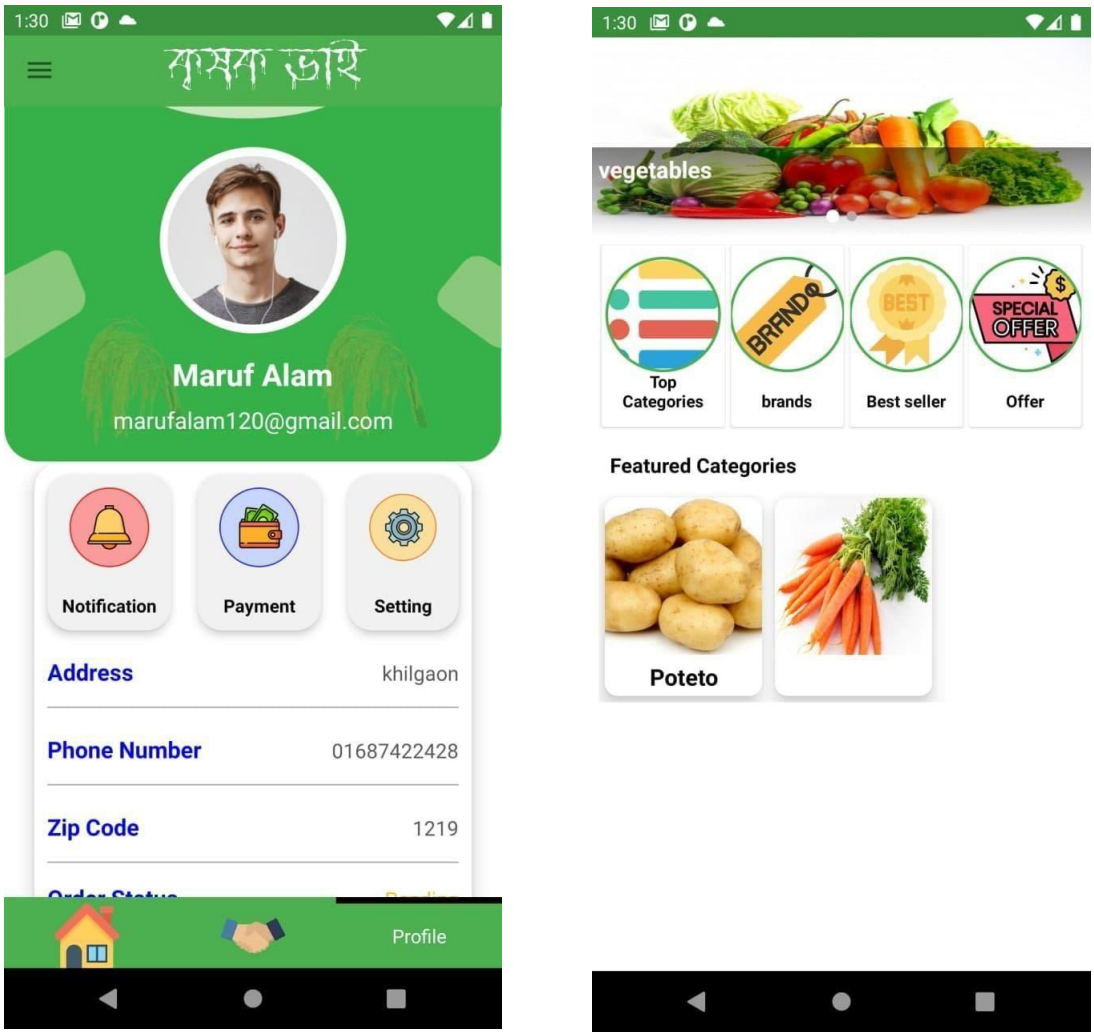

Fig 4.1.2: User Interface 2

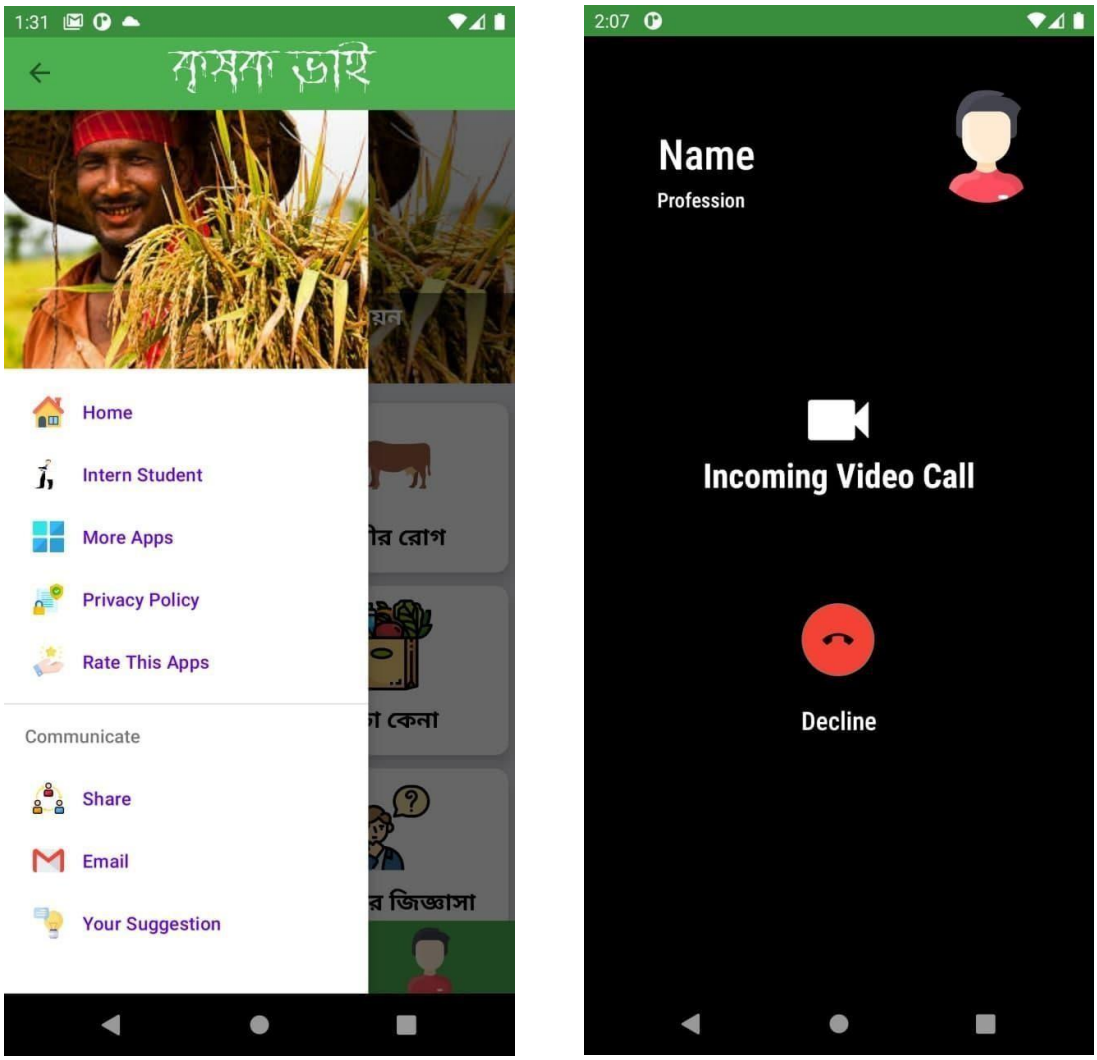

Fig 4.1.3: User Interface 3

4.2 Back-end Part

Back–end part is very significant part for any developers. Because in this part we control the all functions of the applications. A client doesn't need understand how this part is work. On application, everything occurs in back-end part. Back-end part is complex part because the back-end normally consists of programming language.

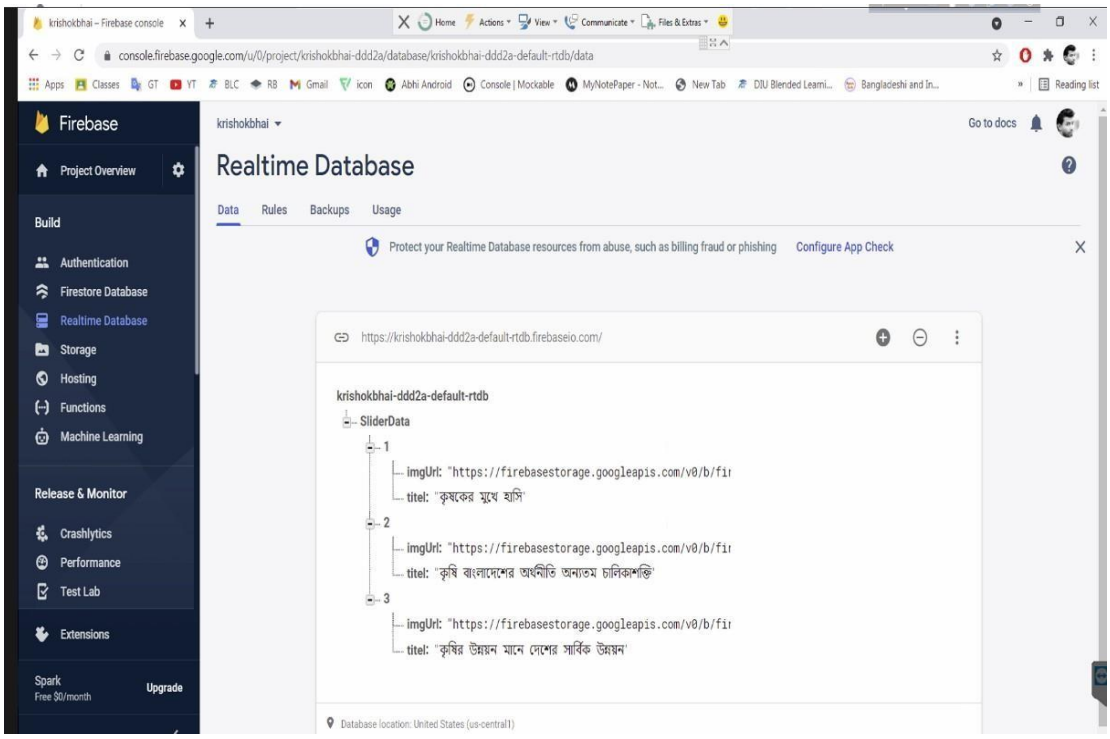

Fig 4.2.1: Backend Design

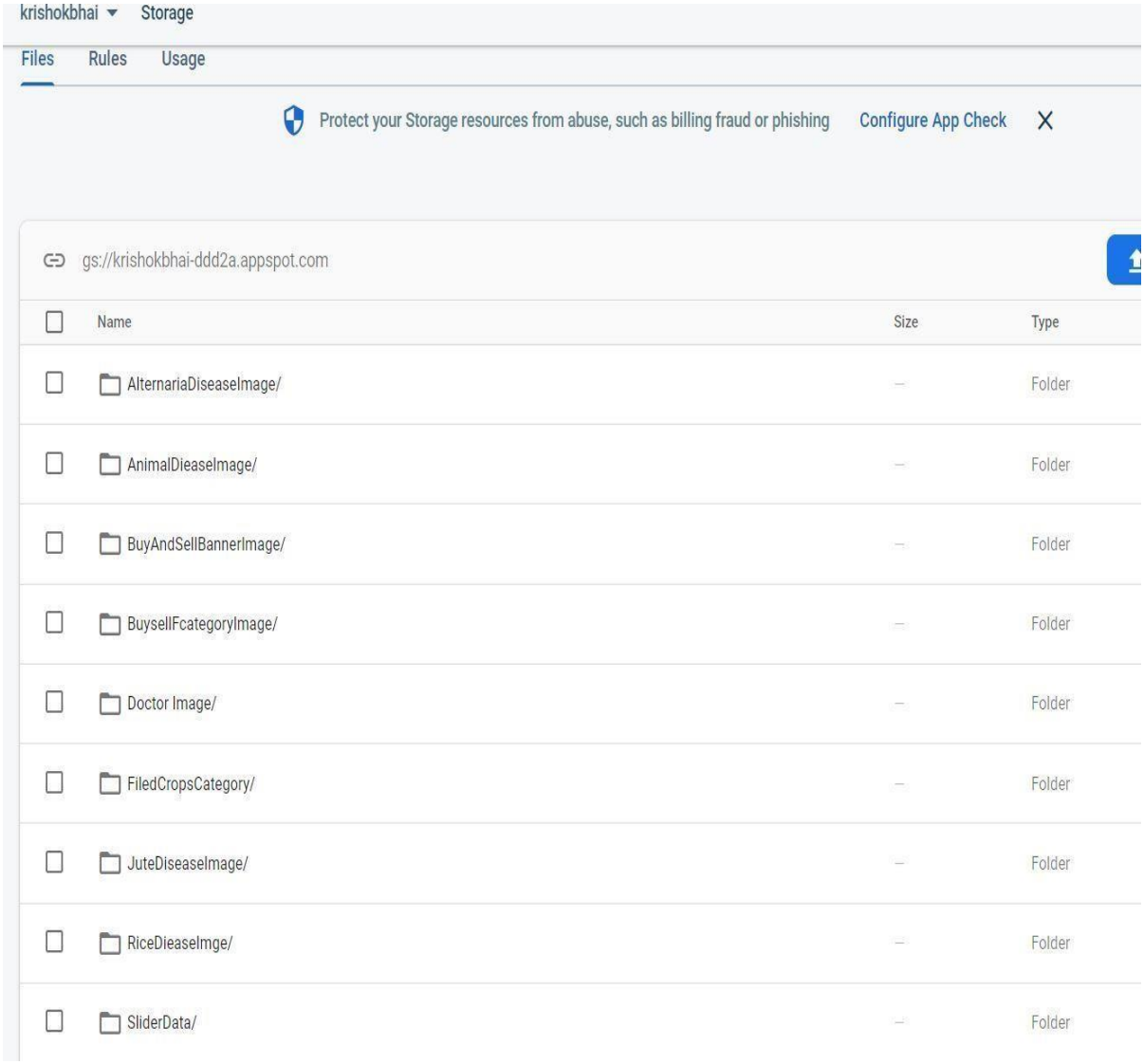

Fig 4.2.2: Firebase Storage

Fig 4.2.3: Specialist Data

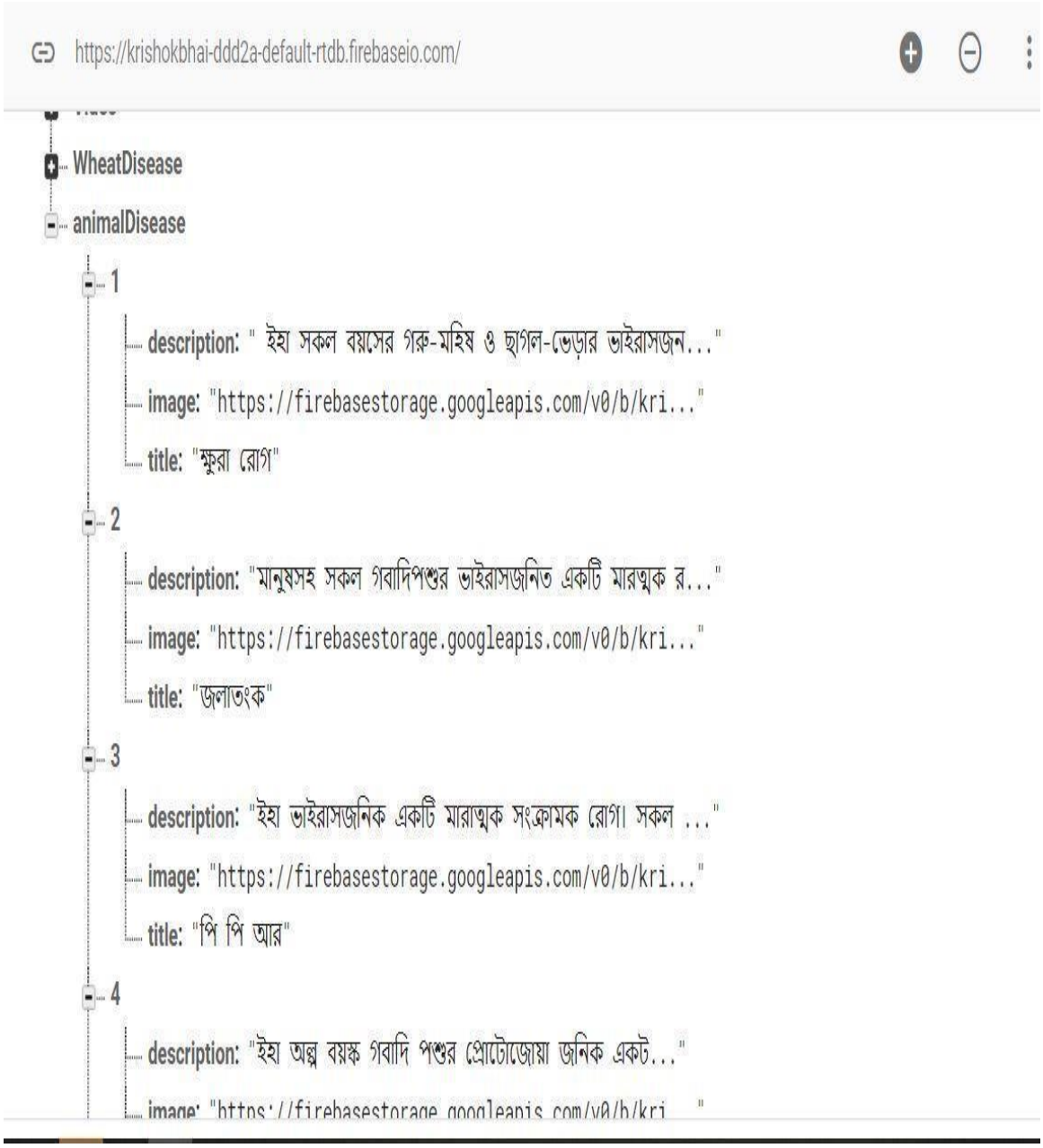

Fig 4.2.3: Diseases Data

4.3 Interaction Architecture and UX

Interaction architecture describes the communication among the users and the application. Interaction architecture considers how the user provides space, processes problems, and discovers result. It performs related activities and takes care of problems in performance. The interaction design of the application essentially insides on the general experiences among the users and the application. It provides all the features interact with the user. We are primarily focused on the applicability of the application and there is an option where the user will need to register and log in to the application using their verified information.

In our application for UX, we have tried to give our users a great experience by adding some new features. We attempt to keep our application straightforward and simple to use for better execution and experience for the client.

4.4 Implementation Requirement

We have used a variety of device program in this project. To development this project, we have categorized into two parts, back-end part and front-end part.

Which requirement are used in this project:

- Programming language java
- Android Studio
- Internet connection
- Real-time database
- Power supply
- Rest API

CHAPTER 5

Implementation And Experimentation

This session we discuss implementation and experimentation. Here, we focused how to implement database. As, we earlier mentioned that our project we use the firebase database [8]. All the data information will be stored in the firebase along with the user's information, specialist information and researcher's information. Therefore, in this chapter we have also discussed the testing app.

5.1 Implementation of Database

We have two parts in our app. You can watch one part without registration. Another part is the main part in our app. In this part user must have registration or login. This system have to implement these operation using firebase. We need an IDE (Integrated Development Environment) to use firebase for our android project. There are various kinds of IDEs for developing Android Apps like as Visual Studio, Eclipse, and Android Studio. Google prefers the Android Studio. So, in this project we have used "Android Studio" [9]. Firebase is a tool and framework which schematic to enable the development and growth of better application. Now, this technology is innovating and dominating the market for BaaS. Google was bought it and it is continually updated to make the user interface even more comfortable and diligent.

The SDK app permitted by this toolkit interacts directly with backend resources according to the Firebase console [10]. So no relationship between the app and the service has to be established. Then you normally write code to ask for the data base in the app if you run one of the Firebase database choices. This is different from the conventional creation of apps. In the standard application development process both frontend and backend codes have to be written. Just the API endpoints exposed by the backend are implemented in the front code and the backend code really does the job. However, standard backend implementation of Firebase goods is circumvented, which places the

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job on the customer. There is too much room in the Firebase database to replace custom CMS implementation quickly, depending on the product development level, depending on the final objective (whether the product is built to engage active users). Firebase is a good option if you need to get a proof of concept for a minimum of money since it is free for a number of users and preferable for starting. When adapting to the market, you can control the device and change it, which later can quickly be translated to CMS. It offers authentication, firebase analysis, app indexing, hosting, cloud messaging, as well as many more modules.

5.2 Experimentation:

This process is done after completing all types of methodologies. It is one of the most important part for any project. Tests and judgment can be carried out at the same time. But their significantly are different. There are many types of software development test…..

- Usability Test
- Unit Test
- Integration Test
- Test Result

CHAPTER: SIX

Conclusion and Upcoming Work

We mention our decision and conclusion in this section. Here we discussing the future scope and how best it would have been.

6.1 Conclusion

Krishok Bhai is an android based mobile application. It is a digital effort to solve farmers' crop problems quickly and effectively. It has been created by logically arranging images of various crops based problems. The farmer himself can identify his problem by looking at the pictures here. Moreover, farmers will get help directly from specialists through audio or video calls. Customers can buy products at a fair price without any syndicate issues through this app. using this application, user getting desired information & problem solution which will be benefited greatly by farmers & agriculture officer. Intern students get available resources from farmers and the intern student research to them. Above all, it is a perfect app for farmers. `

6.2 Upcoming Work

In future, we desire to build a magnificent agriculture app which will be cover every sector off Bangladesh agriculture so that at the same time farmer/customer/officer will be benefited from each other easily. In future we will hire people at each district level to deliver the products. In this way, the customer will not get confused about the product. As, we earlier mentioned that our project is android based project. In future, we will develop it IOS and Web base application so that any user can use our application.

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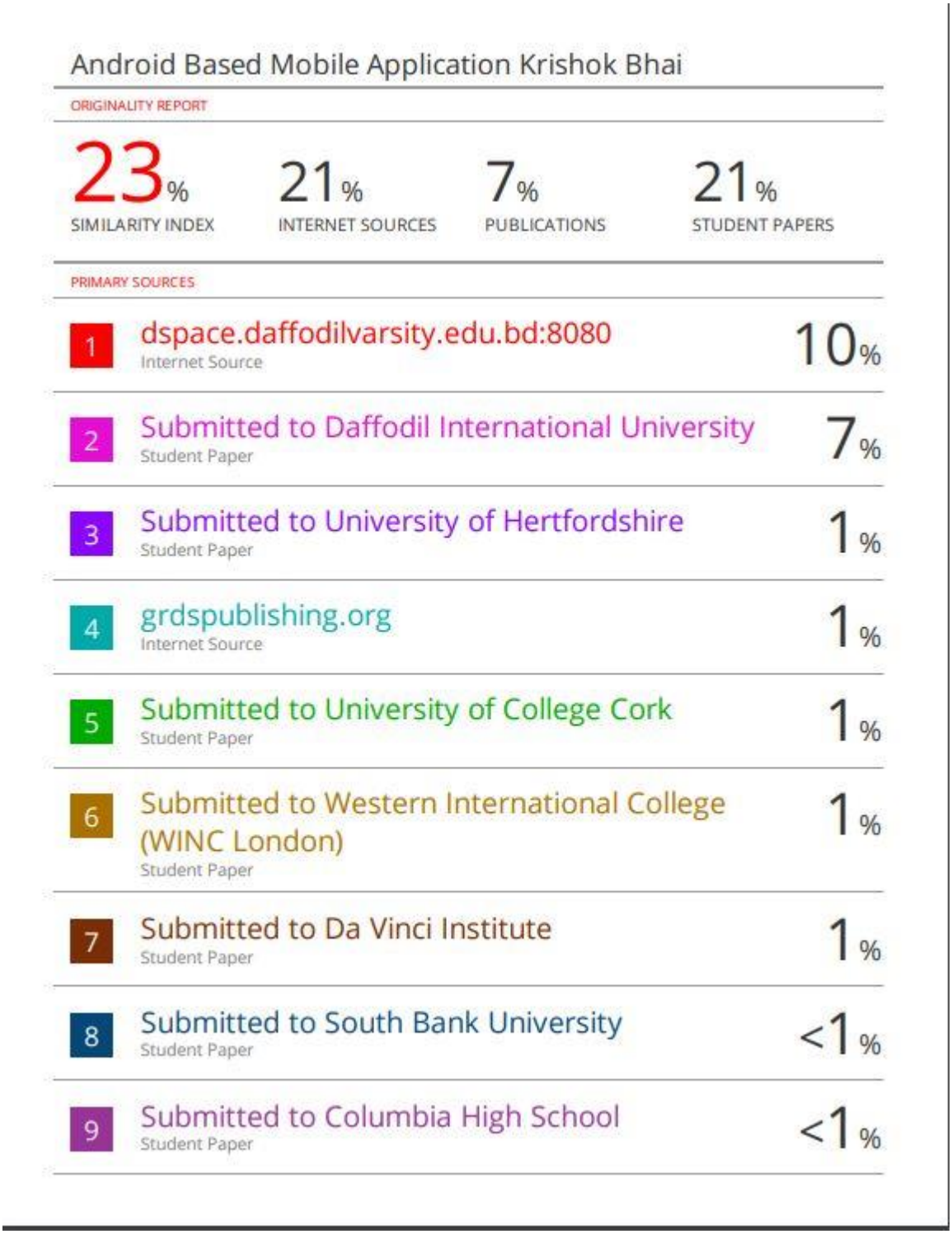

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