"SMART CITY: A CLEANING AWARENESS AND DUSTBIN FINDER MANAGEMENT SYSTEM"

BY

ABUBAKAR SIDDIQUE MONIR
ID: 163-15-8318

TANIMUL ISLAM
ID: 163-15-8391
AND
SHAHJALAL ADMED
ID: 163-15-8328

This Report is submitted in Partial Achievement of the Necessity for the Degree of Bachelor of Science in Computer Science and Engineering.

Supervised By

SHAH MD TANVIR SIDDIQUEE
Assistant Professor
Department of CSE
Daffodil International University

Co-supervised By

AHMED AL MAROUF
Lecturer,
Department of CSE
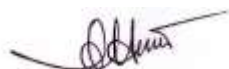Daffodil International University

DAFFODIL INTERNATIONAL UNIVERSITY
DHAKA, BANGLADESH
SEPTEMBER 2020

APPROVAL

This Project titled **"** Smart City: A Cleaning Awareness and Dustbin Finder Management System **"**submitted by Aabubakar Siddique Monir, Md. Shahjalal Ahmed and Tanimul Islam 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 October 2019.
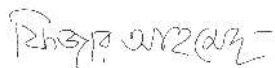
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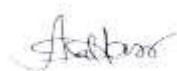**Dr. Fizar Ahmed**   **Internal Examiner**
Assistant Professor
Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

Abdus Sattar   **Internal Examiner**
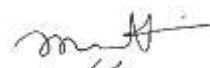**Assistant Professor**
Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

Dr. Mohammad Shorif Uddin   **External Examiner**
Professor
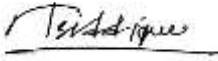Department of Computer Science and Engineering
Jahangirnagar University

DECLARATION

We hereby declared that, this project has been done by us under the supervision by of **Shah Md Tanvir Siddiquee, Assistant Professor**, **Department of CSE** Daffodil International University. We also declared that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.
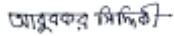
Supervised by:

[signature: Siddiquee]

Shah Md Tanvir Siddiquee
Assistant Professor
Department of CSE
Daffodil International University
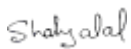
Co-Supervised by:

Ahmed Al Marouf
Lecturer
Department of CSE
Daffodil International University

Submitted by:

[signature]

Abubakar Siddique Monir
ID: 163-15-8318
Department of CSE
Daffodil International University

[signature: Shahjalal]

Md.Shahjalal Ahmed
ID: 163-15-8328
Department of CSE
Daffodil International University

[signature: Tanimul islam]

Tanimul Islam
ID: 163-15-8391
Department of CSE
Daffodil International University

ACKNOWLEDGEMENT

First we express our heartiest thanks and gratefulness to almighty God for His divine blessing makes us possible to complete the final year project successfully.

We really grateful and wish our profound our indebtedness to **Shah Md. Tanvir Siddiquee**, **Senior Lecturer**, Department of CSE Daffodil International University, Dhaka. Deep Knowledge & keen interest of our supervisor in the field of "*Android Development*" to carry out this project. His endless patience, scholarly guidance, continual encouragement, constant and energetic supervision, constructive criticism, valuable advice, reading many inferior draft and correcting them at all stage have made it possible to complete this project.

We would like to express our heartiest gratitude to **Dr. Syed Akhter Hossain** Head Department of CSE for his kind help to finish our project and also to other faculty member and the staff of CSE department of Daffodil International University.

We would like to thank our entire course mate in Daffodil International University, who took part in this discuss while completing the course work.

Finally, we must acknowledge with due respect the constant support and patients of our parents.

ABSTRACT

This application is **"** Smart City: A Cleaning awareness and Dustbin Finder Management System **".** This is a sort of programming, which gives various types of City Corporation and social administrations. The point of the application is an online-based help framework among clients and suppliers basically. In this application, clients can see the administration rundown and they can pick their needed or required administrations and afterward can get their administrations through our " Smart City: A Cleaning awareness and Dustbin Finder Management System" application. There will be numerous administrations, for example, drop grievance administrations, finding closest Dustbin administration, Door to entryway cleaning administrations, News and pattern administrations, crisis call administrations, and so on. Likewise, the administration help in city companies will really think about it through our applications. They will discover more about the closest residue bean and will have the option to toss durst in there.

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CHAPTER 1

Introduction

1.1 Introduction

Our project is based on online Android Application for Social and city corporation service, where Cities people will get their wanted services center provide different types of services for the people who can take those services free and by paying. This android application will provide many services such as Drop complain, Finding Nearest Dust bean, Door to door cleaning service & News and trend all over the world.

"Smart City: A Cleaning awareness and Dustbin Finder Management System" will be a great virtual platform for the People who lives in Dhaka city corporation now and using Smart phones. Service provider of the Dhaka city corporation can easily announcement about services collecting garbage. They can update their services.

Fig 1.1: Present garbage management condition of Dhaka city.

For the people of Dhaka city corporation this "Smart City: A Cleaning awareness and Dust bin Finder System" application will be a useful platform to be helped by service provider and social organizations who are agree with these services and social works. Every man can easily create and delete account or skip this. They can see easily about their services and in the whole world where is happening This kind of social and beneficial works.

1.2 Motivation

Many people in the Dhaka cities are facing a lot of garbage pickup problem. Or, sometimes when celebrations are happened a lot of wastage materials and foods are stored in the house, there needs immediate cleaning service. Keeping in front these kind of problems we planned for the great solution by developing "Smart City: A Cleaning awareness and Dustbin Finder System" application. A lot of people now a day in Dhaka city throws their wastage and dirties here and there. They don't know where to throw the garbage. For example, every end of the road there automatically grown up dust bean and peoples are frankly throwing their waste house materials. If any organization sees this and made this place clean by volunteers it can be happen by this "Smart City: A Cleaning awareness and Dustbin Finder System" application.

1.3 Objectives

Objective of "Smart City: A Cleaning awareness and Dustbin Finder System" are given below:
Garbage Management System is a social servicing platform created in the virtual space.

The objectives of "Smart City: A Cleaning awareness and Dustbin Finder System" are to modernize the City Corporation accordingly with city people so that the common people are connected with the Smart City: A Cleaning awareness and Dustbin Finder System application because our government of Bangladesh has undertaken a project to switch Bangladesh into a Digital Bangladesh. For this reason, 4501 information and service centers are established at union parishad which works for connected citizens at the grass

root level. There is also 328 Pouroshava in our country most of them are not digitalized and have no touch of it. So our aim is that, we want to connect people in a modern way as if they get each and every information through our application easily. However, all the pourashava and city corporation be modernized. It will be a better solution for city people of our country.

- Everybody who has account can drop complain in the forum.

- Our application will be a dependable solution for finding nearest dust bean.

- Anybody can easily call for door to door paid cleaning service.

- User will be informed what is going on other cities in the world throw News & Trend

Specialist organization:-

- Create their administration without any problem

- Get more individuals to do their independent activity

- Update administration data

- Provide online administrations.

- Software refreshes.

- News and Trend refreshes.

User Individuals:

- Can make, update account

- Can effectively access without making account

- Can see specialist co-ops area

- Can see administration focus data

- Can share with others

- About administration data

- Can disclose a post to lessen filthy spots

- Be thought about world news on grimy administration

- Write their remarks

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- Can give criticism

- Also can repost subsequent to doing social works.

1.4 Expected Outcomes

This project will have the option to give:

- First intriguing things of this application is city individuals can without much of a stretch settle on a telephone decision to get administration from supplier.
- Easy to make an account in this application to get fascinating administrations.
- People will likewise ready to see worked profiles, ratings, and about their work understanding.
- People can contact the Pourashava and city Corporation through this application.
- People will have the option to think about appropriation and apply for it.
- Service data about city company and social associations.
- Message and notice framework.
- People can take their administrations effectively in the event that they utilize this application.
- Accessible in the rustic territory.

1.5 Project Management & Finance.

Project management is the trial of the framework and Finance is the expense of preparing the application. It helps in choosing whether it is noticeable to experience the venture or not. Venture the executives considers the framework and advises whether to build up the framework or not.

The executives have four strong measurements:

4

- Technology

- Time and

- Resource

The Feasibility of the framework " Smart City: A Cleaning awareness and Dustbin Finder System " is seen with the assistance of these four measurements.

Innovation: The framework improvement of " Smart City: A Cleaning awareness and Dustbin Finder System " is purposed with the least complex and effectively accessible innovation. This framework depends on android like portable interface supposed Android Application, which is anything but difficult to utilize. This framework created by Programming language Java, MySQL for Database, and XML for the plan.

Time: This excellent measurement gauges the frameworks esteem with respect to the period, which is one of the most noteworthy reasons to be thought of. In this undertaking, the time factor is noteworthy this framework is foreordained to be introduced in a simple time. This framework isn't enormous and subsequently can be finished inside the timeframe it shellfish approx. Time is an urgent factor to be thought of so we can say that this framework can be created inside the necessary timeframe.

Resources: This dimension takes into count the resources required to develop the system. For this particular system the resources required are quite nominal which can be fulfilled, the resources required for this system are basic hardware, an operation system which is compatible. With the help of this entire dimension we can measure the feasibility of the system and can decide whether to go forward with the project or not. By take in count the dimension and their role in this particular system we can say that this system is feasible from all these dimension point of view and it is viable to go through the project.

<u>Finance:</u>

5

This dimension measures the system in honor to money or we can say capital. This dimension checks in case it's durable to expend the necessary quantity on the process or it will be a misuse. There is no difficulty of fund in this program because it is conduct straight technology, which is very simple to setup. This process has been exhibited for a standalone computer so, for this system hardware necessity is very low. For this system we necessity to be exhibited and install We demand very simple obtainable technologies and very elementary hardware and all the necessity doesn't charge lot.

1.6 Report Layout

Report layout describes a sort brief of all the section. A sort brief of all chapters is given down:

- **Chapter 1:** Describes an instruction of the "Smart City: A Cleaning awareness and Dustbin Finder System", Motivation, Objectives, Finance, Awaited result and the Report arrangement.

- **Chapter 2:** Described the background, the related works, Comparatives Studies, scope of the problem and Challenges of the application "Garbage Management System".

   Chapter 3: Describes the Business Process model, System requirements, Use Case modeling, Logical data model & design requirement.

- **Chapter 4:** Describe the design (Front & Back end), interaction and UX. Implementation requirement.

- **Chapter 5:** Implementation of database, Detail the Implementation of Front-end design, Back-end design, testing methodology, Functional testing, Unit test, Compatibility test, result & report.

- **Chapter 6:** Described the Impact on society, Impact on society & ethical aspects, sustainability plan.

- **Chapter 7:** Conclusion Discussion and scope for future development.

CHAPTER 2

Background

2.1 Preliminaries

There are many government web site within Bangladesh which is approved by the government of Bangladesh. Late DNCC Mayor Anisul Islam sir proposed and android application named "Nogori" but after his death the project was closed. There is no website allotted for each pourashava and city corporation to reach them. So that the public can't access the services through website and android application in online. There are several organizations also which are trying to research and develop the pourashava and city corporation related android apps in Bangladesh, but these apps are not perfect, such as – Clean Dhaka, Garbage Man, Gis Application etc. But sadly, most websites today are left blank for maintenance. These are not updated regularly. So the general public is not getting the online based service properly.

Trash the executives is a major issue for Dhaka City. DNCC has done a ton of work on this. Up until now, no decent arrangement has been given. Aside from this, dustbin has been introduced

in the entire of Dhaka for this arrangement and there is nothing but the bad outcome.

So our job is to turn the city corporation into a modern city. So that the people of the Dhaka city can get different information through our apps. However, some questions have been raised for this project-

✟ How to explore the concept of "Smart City: A Cleaning awareness and Dustbin Finder System"?

✟ How to make it more effective mostly in the context of Bangladesh?

✤ How to make it effectively running in the lower bandwidth?

✤ How the uneducated people of city corporation will use this application?

✤ How can the city people be benefited using this application "Smart City: A Cleaning awareness and Dustbin Finder System"?

In this case an extensive project has been done in the area of city corporation to contribute in the context of Bangladesh.

2.2 Related Works

In this part we discussed the recent project and related works evaluation in this field.

To tackle this issue, the DNCC fabricates some trash zone in explicit regions. All the trash is gathered there. Dustbin has been set up everywhere on over the city. The matter of extraordinary that we have not yet discovered whatever has tackled this issue utilizing innovation.

Govt. website: Govt. web service is a free web service developed by a2i, bcc, doict, and basis for peoples that aim was reached the information and services to the people in this easiest way. There is a government projected website for city corporation. From this website peoples are known about that hospital location, police station location, City corporation office location, Fire brigade etc. The primary purpose of this website was sharing information about DNCC into the people.

Garbage Man (A Garbage Collector App): To tackle this issue, the DNCC fabricates some trash zone in explicit regions. All the trash is gathered there. Dustbin has been set up everywhere on over the city. The matter of extraordinary that we have not yet discovered whatever has tackled this issue utilizing innovation.

GIS Application: Distinguishing Municipal Solid Waste (MSW) removal locales and suitably overseeing them is a difficult assignment for some, creating nations like Bangladesh. It is an unpredictable issue in a metropolitan territory, as expanding populace levels, quick financial development, and ascend in-network expectation for everyday comforts, quickens the age pace of MSW. The examination region is zone-2 (Mirpur Pallabi) of Dhaka North City Corporation (DNCC) (10.40 km 2) is a neighborhood, from where about 353.34 ton/day strong waste is created and among them, about 57.43% were overseen by DNCC. There are 41 diverse size holders present at 17 areas in the examination territory. The current site and waste gathering holders are not adequate, which crumbles the earth because of unlawful waste unloading, and around 15 illicit unloading locales were recognized. To recognize legitimate waste unloading site and forestall tainting, Geographical Information System (GIS) was utilized to propose a productive situation with moving the current waste-gathering compartments and another situation was proposed with a number of holders (73) to achieve a 93.68% waste assortment effectiveness including enhancement and choice of waste gathering courses for the investigation territory. This examination additionally shows that the use of GIS is a proficient and ease instrument to consider and choose the fitting unloading site to encourage dynamic cycles. (January,2016)

2.3 Comparative Analysis

Interestingly, the majority of the dustbins were taken. The most significant thing is that the cleaner doesn't have the foggiest idea where the trash was stored at any given second. Furthermore, he/she can't illuminate to the cleaner in the event that he/she needs to advise. Most of the dust bean were not located or cannot find out where it is actually existing. In public place wastages are thrown here and there.

In our system, Users are able to request for paid cleaning service. They can call service provider to clean up his place. Another feature is all the dust bean of the city area will be seen in map. They can easily find out their nearest dust bean. When we walk we find a lot

of place dirty with wastages, in our application these place will be clarify and mark-out to cleanup by volunteers.

2.4 Scope of the problem

Since this is a major issue, there are a couple of ways we need to manage it. Social awareness is first priority. Cleaners need to use smartphone. We have to construct a superior organization among cleaner and individuals and furthermore the entire framework. Increment labor. Individuals should be made mindful of this. Important advances ought to be taken to stop dustbin robbery. Cleaners should be prepared. We need to make better relationship between social organization and cleaners with city peoples. The region should be a delightful spot for trash assortment.

2.5 Challenges

Perhaps the most test was to deal with multi demand in brief we have done it. Another Big problem was cleaner doesn't use smart phone. So we have to design the application for them. Finding dust bean was another challenge but we have done the job.

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CHAPTER 3

Requirement Specification

3.1 Business Process Modelling

This model has spoken to the all-business cycle of the undertaking. It will help the designer to build up the extend and plainly comprehend the business cycle.
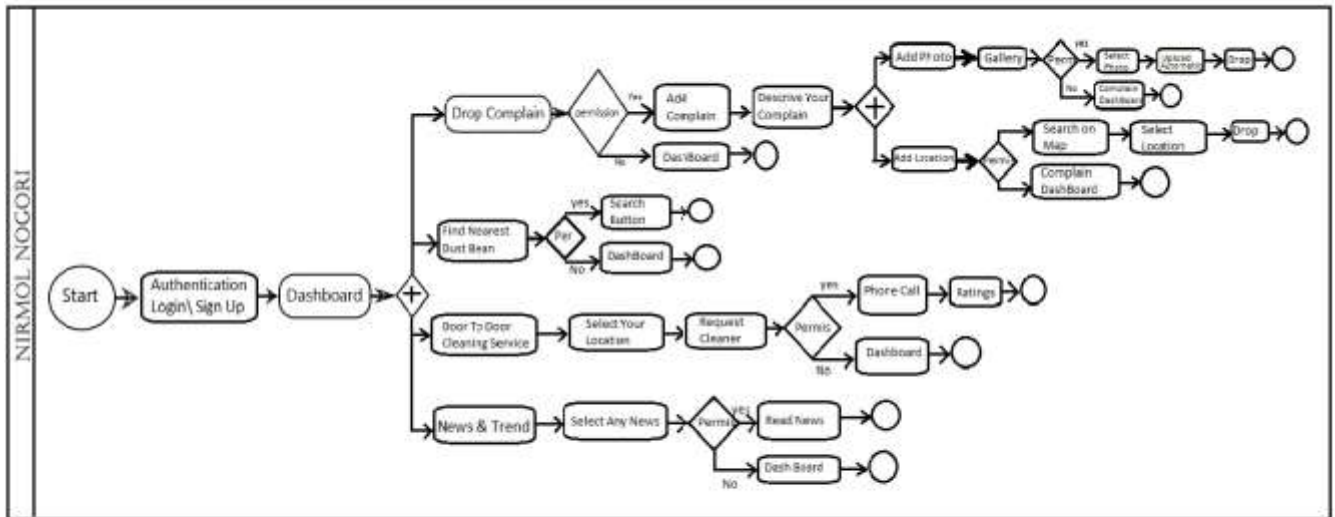

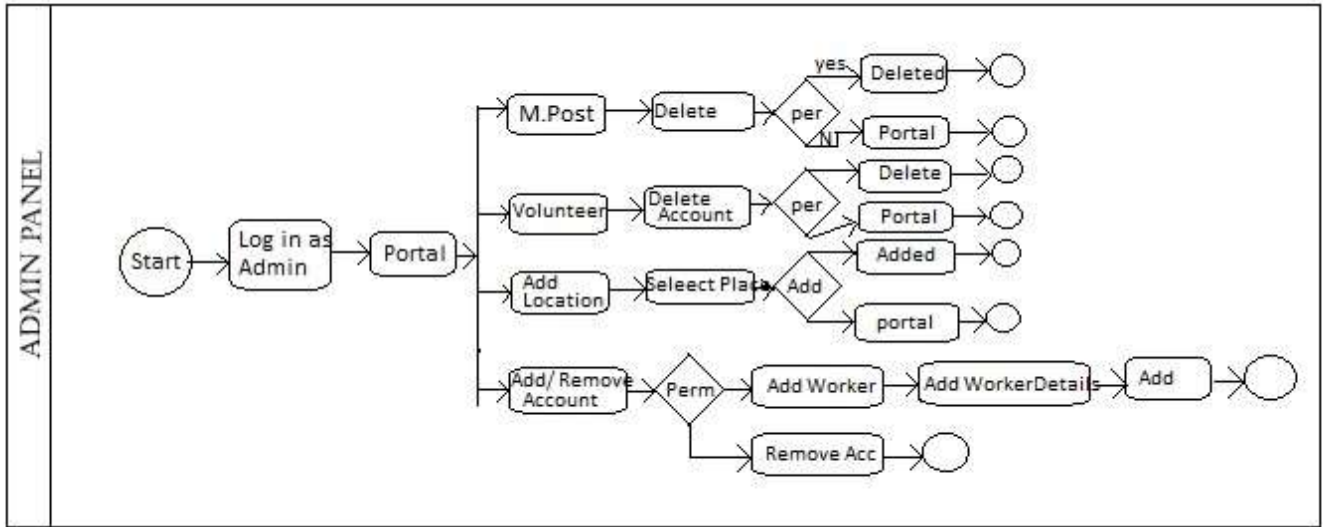Fig 3.1: Business Process Model for Application.

Fig 3.2: Business Process Model for Admin panel.

3.2 Requirement collection and Analysis

In prerequisite assortment and investigation from the start, we gather information from individuals with a few questions. After information assortment, we examine the information and attempt to comprehend the client's necessities. To make it simple and easy to use we build up the undertaking individual to develop the project.

Data Collection that we gathered from survey are given below:

12

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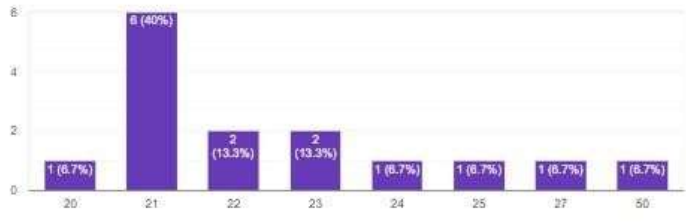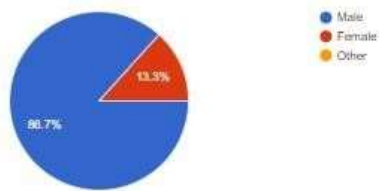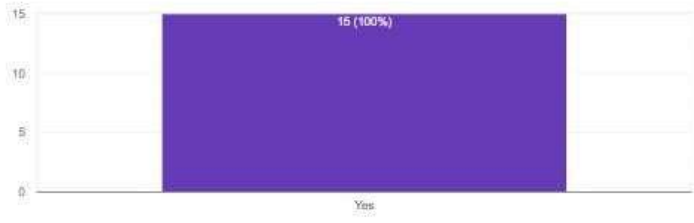
Do you think throwing garbage here and there is one of the main reason of Garbage problem ?

15 responses

- Yes
- No

93.3%

Did you ever throw garbage outside of the dustbin ?

15 responses

- Yes
- No

20%

80%
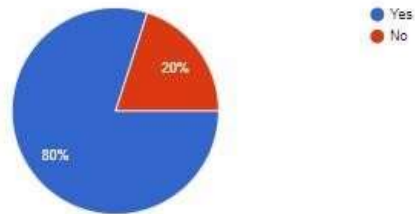
Have you ever faced difficulties for road side garbage ?

15 responses

- Yes
- No

93.3%

If you ever got the chance to clean roadside garbage, will you do it ?

15 responses

- Yes
- No

26.7%

73.3%
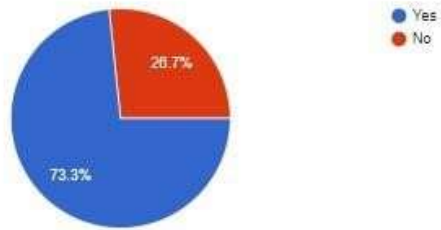
Do you have any experience to work with social organization, who are working to clean Dhaka city ?

15 responses

- Yes
- No

66.7%

33.3%
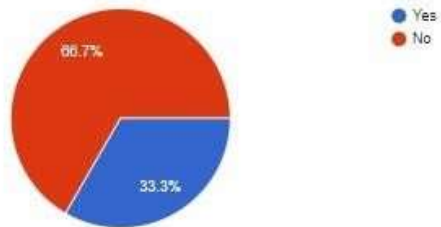
Do you think a forum or community will help to get people inspire and aware of garbage problem ?

15 responses

- Yes
- No

20%

80%
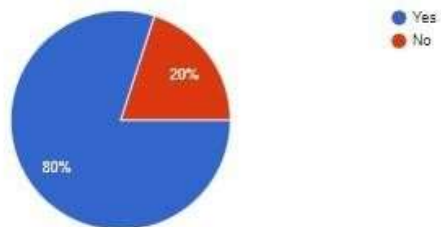
Do you want to work as a volunteer to clean Dhaka city project ?

15 responses

- Yes
- No

26.7%

73.3%
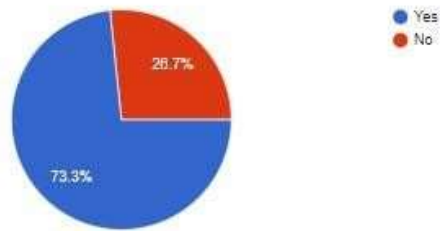
Do you face problems for cleaning your home ?

15 responses

- Yes
- No

46.7%

53.3%
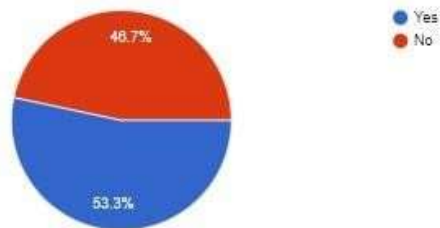
Have you ever face that, garbage pickup workers often comes at differents times and that's why your garbage's stays at home for days ?

15 responses

- Yes
- No

20%

80%
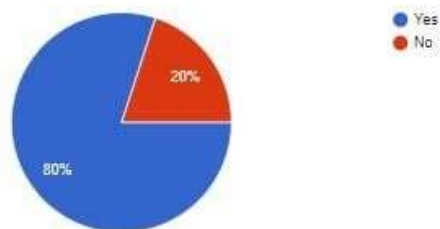
Will you like door to door garbage pick-up in your locality at any time you want ?

15 responses

- Yes
- No

86.7%

13.3%
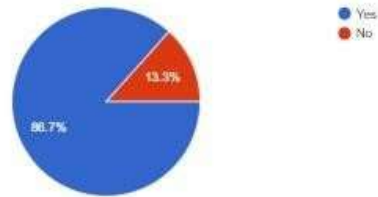
Do you want an service of home cleaning at any time?

15 responses

- Yes
- No

80%

20%
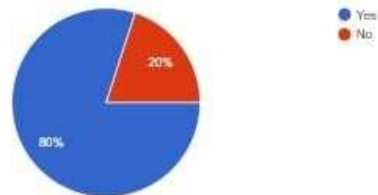
If garbage pick-up worker have not come for few days,then what will you do with your garbage ?

14 responses

Will throw in the nearest dustbin by myself

I would deposit the dirt in a polythene or in a specific place.

I will put the garbage in the dustbin.

Throw here and there

Then the city corporation needs to be informed so that they can solve the problem.

waiting for him

Can't Imagine

fired it

i throw it in the nearest dustbin...

Fig 3.3: User Requirement.

3.3 Use Case Modeling and Description

Our use case model presents the actual users activity done in application. User can drop complain, find nearest dust Bean, Request for door to door cleaning service.

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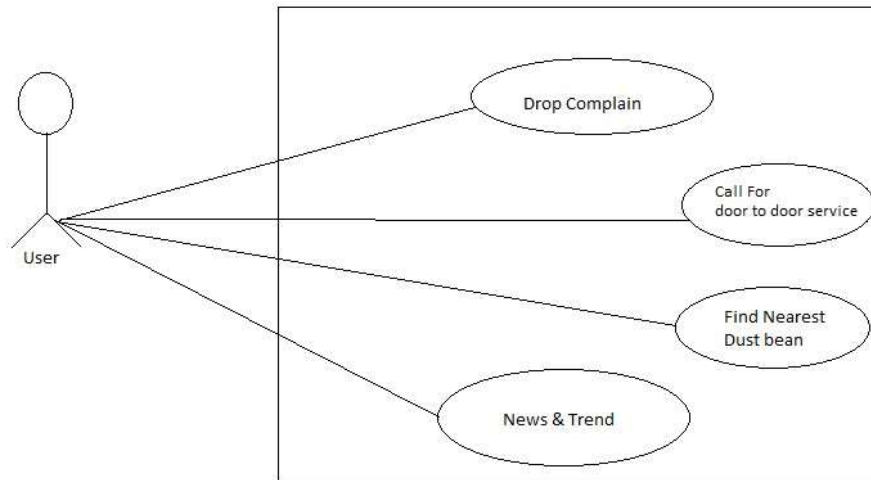
Fig 3.4: Use case model for User.

This use case model presents the admin activities of the application. All the permission and accessibility of admin is shown in the figure.
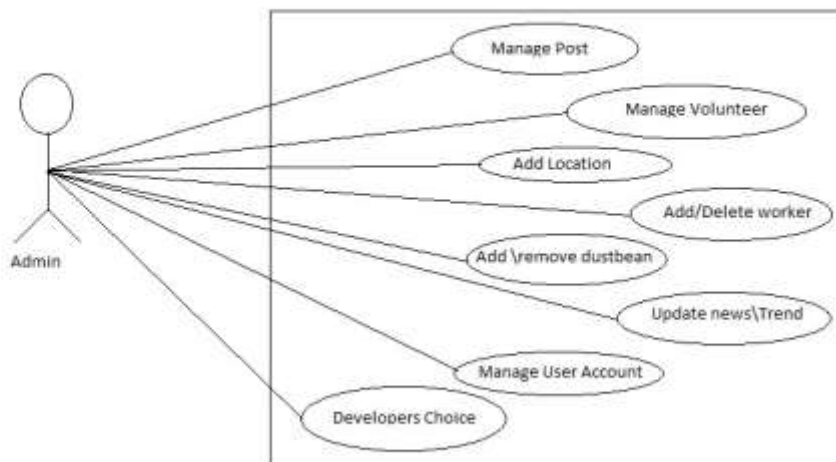
Fig 3.5: Use case for Admin.

It is accessible for an assortment of working frameworks and stages like Microsoft Windows, Mac OS X, Linux, and Solaris.

3.4 Logical Data model
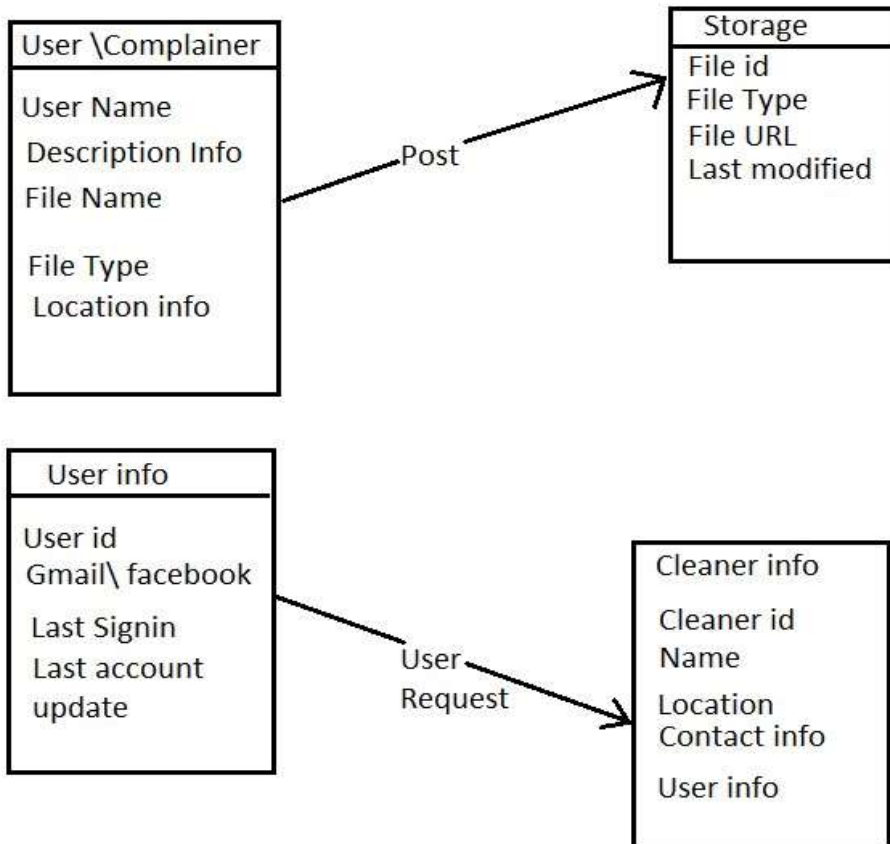
Fig 3.6: Logical Data Model

3.5 Design Requirement

The plan of our framework is easy to use, we attempt to plan our application in that manner, that client can undoubtedly utilize this application. At the point when the application is open, it will show the welcome screen. At that point the client will get four feature, drop complain. where user can upload photo of a dirty place and write something about the place or location. photo will store in database. Anyone can re post on the post after cleaning the place and able to upload after picture. And these file will be store in database. Door to Door cleaning service. For this user must need smart phone to operate. All the user information and service provider information will be updated and uploaded into the database.

Designing Requirement for users:

- Welcome screen
- Dashboard
- Camera
- Gallery
- Location
- Upload screen
- Phone call
- Providers Ratings
- Map screen
- Location selection screen.
- Cleaner selection screen.

CHAPTER 4

Design Specification

4.1 Front-end Design

✦ Linear Layout

The linear layout is the most basic layout, and it arranges its elements horizontally or vertically, respectively. All parts are displayed in a linear layout in a linear manner, i.e. all the linear layout parts of the child are displayed according to their orientation. Used for template design on Android.

✦ Relative layout

Relative Layout is a group of views that display children's views in relative positions. Relative layout is a very powerful utility for creating a user interface, as it can eliminate group view groups and keep your layout periodically flat, thus improving performance. The relative layout allows the child's views to reflect the parents' point of view or relative to each other. Using a relative layout, you can align the two elements with the right edge or make them overlap, centered on the screen and centered on the left. Relative design is the most used layout after Android's relative layout for the same reason. This allows you to keep your child's perspective relative to each other or to the container or other container.

✦ Image View

Image view class is used to display application image file on Android. Image viewing is also commonly used to colorize the image and maintain image scaling. This view takes care of the loading and optimization of the image, freeing you from focusing on application-specific details such as layout and content. Due to the different screen sizes on Android devices, the image file is easy to use but difficult to master on Android. Android has been enhanced with some great UI design widgets that help us to create a neat look and attractive app based on UI.

✦ Text View

Text view is the user interface element that displays text to the user. To display the text in operation and in the bottom sheet, we use the text perspective. Text view is a full text editor, although the basic class is configured without editing, but we can edit it. This creates a user-friendly system that plays a very important role in the user experience of the application. In the text view, we can use a small text icon.

✦ Button

A button contains a text or icon that broadcasts the actions they take when the user touches it. We use buttons to submit and upload actions in our app

✦ Bottom sheet

The bottom sheet is the part that has the most options from the bottom of the screen. It is a policy only, not an activity. Slide from bottom to top to display some more options for the user

✦ Alert dialogue

The dialog is a small window that asks the user to determine or enter additional information. Sometimes it is necessary to send an alert to the user before proceeding to

the next activity before making a choice. For example, when you try to log out of the app you see this type of alert and the app will ask you to confirm the logout.

4.2 Back-end Design

✦ Alert Dialogue

We have used Android library projects that provides easy to use. We have third party libraries for google signup and Facebook signup. We have also used google map to find the nearest dustbin and access for the location to drop complain on area wise.

✦ Database

We have used firebase real time data base and firebase to store data of our App. Firebase Real Time Database allows to create great, collaborative applications by allowing secure access to the database directly from the client-side code. While data is local and offline, real-time events are on fire, giving the end user a responsive experience. This is not SQL data so data are kept as a parent child relationship.

```
nirmolnogori
  ⊞ Admin
  ⊞ Complains
  ⊞ Experience
  ⊟ Location and Cleaner
      ⊟ kalabagan
          ⊟ alom
              imageurl: "https://firebasestorage.googleapis.com/v0/b/nir
              location: "kalabagan
              name: "alom'
              phoneno: "0167***
              publisher: "WM1vIUC6esTbafyXAE69UvwTDLUI    ×
              rating: 3.75
              total_fair: 300
              total hr: 3
```
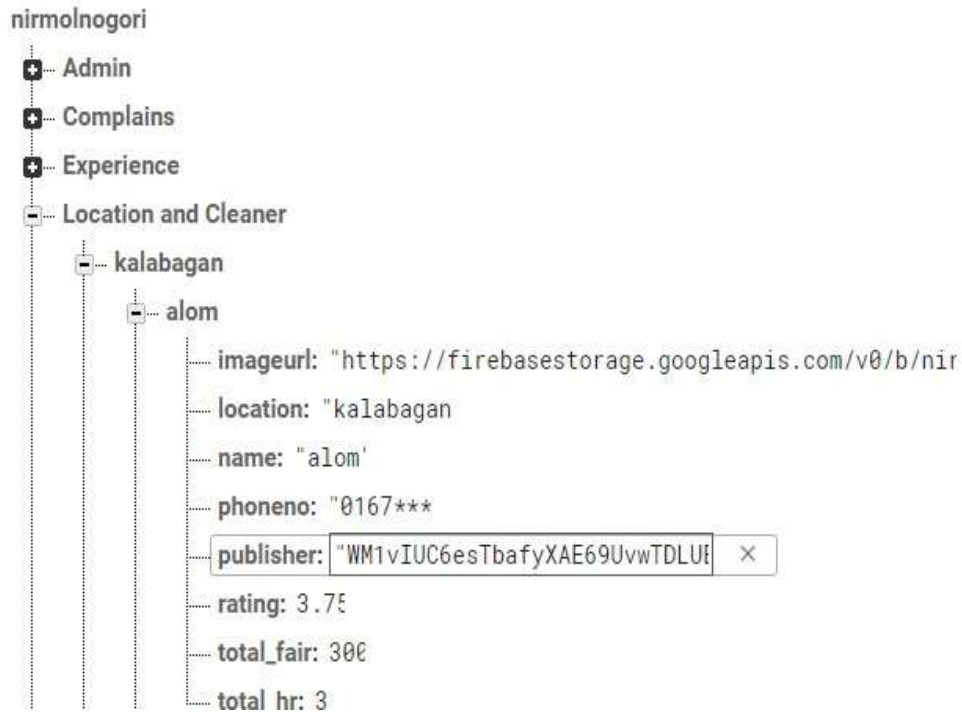
<div align="center">Fig: 4.1: Database</div>

4.3: Interaction Design and UX

Dashboard View:

    Drop complain

    Find nearest Dustbin

    Door to Door Cleaning service

    News & trend

  Drop Complain View:

✦ Shows add complain

✦ Shows previous complain post

✦ Shows add repost

Find Nearest Dustbin view:

✦ Shows location of nearest dustbin

Door to Door cleaning service view:

✦ Shows location of area

✦ Shows cleaner's profile

✦ Submit request for cleaners.

News and trend View:

✦ Shows news and trends title and link

UX

User experience design is the operation design teams use to build products that provide thoughtful and relevant experiences to users. This system design is user friendly for better user experience. To make it user friendly we used user requirements analysis and implemented UX based on it.

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4.4 Implementation Requirement

To Implement this project, we have used Android studio to build our android application and we have also needed to use Firebase to store our Data. We need adobe XD to design our UX and to implement UX we need XML code. To do logical back end design like login, photo upload etc. we need java programming language. We also need dependencies for google signup and Facebook signup.

Software Requirements for Our Application

✦ Windows 7/8/10 for Linux(Ubuntu)

✦ Android studio 3.2 or higher

✦ Java Runtime Environment 1.5 or higher

✦ Java development kit 1.5 or higher

✦ Android operating system minimum SDK version 15 to 28

Hardware Requirements for our application

Windows:

    Microsoft windows (8/8.1/10)

    8GB RAM recommended, Min: 3GB and 1 GB for the Android Emulator

    4 GB disk space recommended

CHAPTER 5

Implantation and Testing

5.1 Implementation of Database

Database Implementation is the most crucial part of our project. We didn't use My SQL for our database. We have used Firebase real time database and fire base for our project. This is mostly recommended for android application. And it is very flexible because it also works offline efficiently. Firebase Real Time Database allows to create great, collaborative applications by allowing secure access to the database directly from the client-side code. This is no SQL data so data keep as a parent child relationship. In figure 5.1 we got user authentication list with their verified email; In figure 5.2 we got user profile info individual ;In figure 5.3 we got drop complain info like user, date, details and location ; In figure 5.4 we got cleaner list info and location; In Figure 5.5 we got us user review for cleaner database; In figure 5.6 we got stoage for complain pic, user pic, cleaner pic.

Identifier	Providers	Created	Signed In	User UID ↑
cff@gmail.com	✉	Feb 17, 2020	Feb 17, 2020	5F7llqV94wYhCCGmbCjRzgt91cp1
tt@g.com	✉	Feb 15, 2020	Feb 15, 2020	9GlBvxlY3iXi39f9yaSjqjAzglt2
fuad@gmail.com	✉	Jun 22, 2020	Jun 22, 2020	HMf7C5z3erdMgqxseyz0alneq973
hell@gmail.com	✉	Feb 15, 2020	Feb 15, 2020	Hc1D3ztwmGddTvvBqMage69BR...
trigonous3@gmail.com	G	Feb 2, 2020	Feb 17, 2020	JyLDXQVUZcc9pPgXl47O92klwKN2
cocmonir@gmail.com	G	Jun 28, 2020	Jun 28, 2020	KlHEm3v3qkf1TrSjUdO8QmG0kNB3

Fig 5.1: User authentication Information

Fig 5.2: User profile info

Fig 5.3: Drop complain database

```
Location and Cleaner
    kalabagan
        alom   +   ×
            imageurl: "https://firebasestorage.googleapis.com/v0/b/nir..."
            location: "kalabagan"
            name: "alom"
            phoneno: "0167***"
            publisher: "WM1vIUC6esTbafyXAE69UvwTDLUED"
            rating: 3.75
            total_fair: 300
            total_hr: 3
        cerag ali
            imageurl: "https://firebasestorage.googleapis.com/v0/b/nir..."
            location: "kalabagan"
            name: "cerag ali"
            phoneno: "016******"
            publisher: "WM1vIUC6esTbafyXAE69UvwTDLUED"
            rating: 4
            total_fair: 900
```

Fig5.4: location and cleaner Database

```
Experience
    Akash
        jvkOpv04aAc73y9DFOJbXRFVUxk2
            cleanername: "Akash"
            date: "2020-07-08"
            imageurl: "https://firebasestorage.googleapis.com/v0/b/nir..."
            location: "keranigonj"
            rating: 5
            review: "very good "
            total_fair: 4
            total_hour: 400
            userid: "jvkOpv04aAc73y9DFOJbXRFVUxk2"
            username: "rehan"
```

Fig 5.5: User Experience database

	Name	Size	Type	Last modified
☐	☐ Complains/	–	Folder	–
☐	☐ News_Trend/	–	Folder	–
☐	☐ Repost/	–	Folder	–
☐	☐ Reposts/	–	Folder	–
☐	☐ Users/	–	Folder	–
☐	☐ admin/	–	Folder	–
☐	☐ cleaner_information/	–	Folder	–
☐	☐ profileimage/	–	Folder	–

Fig 5.6: Storage database

5.2: Implementation of Front-end Design

At First when the application will open, the app will show welcome screen fig 5.7 The user has to prove name ,email id, phone number to sign up in fig 5.8 and at 5.9 the have to provide user email id and password to login. Then user will go to the dashboard where will have option of drop complain, nearest dustbin, door to door cleaning service and news and trend in fig 5.10. User will get access of navigation bar for additional settings, rating in fig 5.11. In fig 5.12 user can see previous complain post. User can drop complain by providing details, pic and location in fig 5.13. User can repost on other users post in fig 5.14. In fig 5.15 User can find the nearest dustbin from his location. In fig 5.16 user can find location where the user wants to request for cleaner. In fig 5.17 user can request for cleaner through call. fig 5.18 user will be asked if he/she took any service. If

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the user press no then the user will be taken to the dashboard and if the user press Yes then the user will be taken to the fig 5.19 to provide review of the cleaner. In fig 5.20 the user can see the latest news and regarding cleaning and environmental issues.

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Figure 5.7
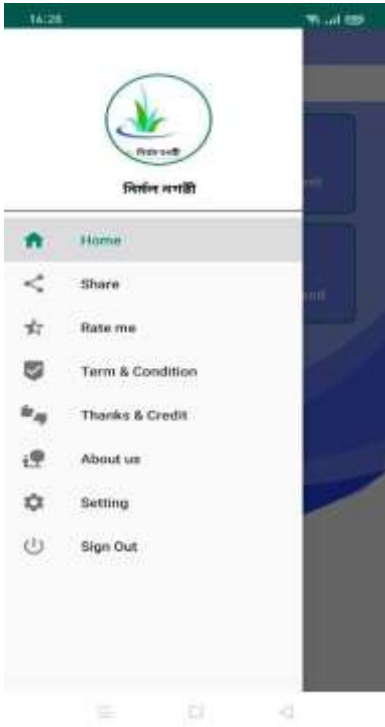

Figure 5.8

Figure 5.9

Figure 5.10

33

Figure 5.11

Figure 1.12

Figure 5.13
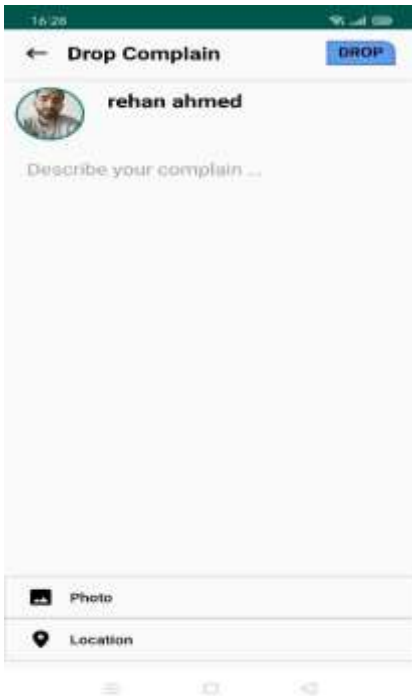

Figure 5.14

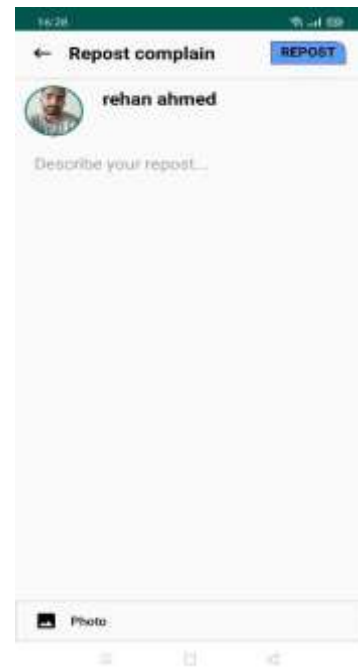©Daffodil International University

Figure
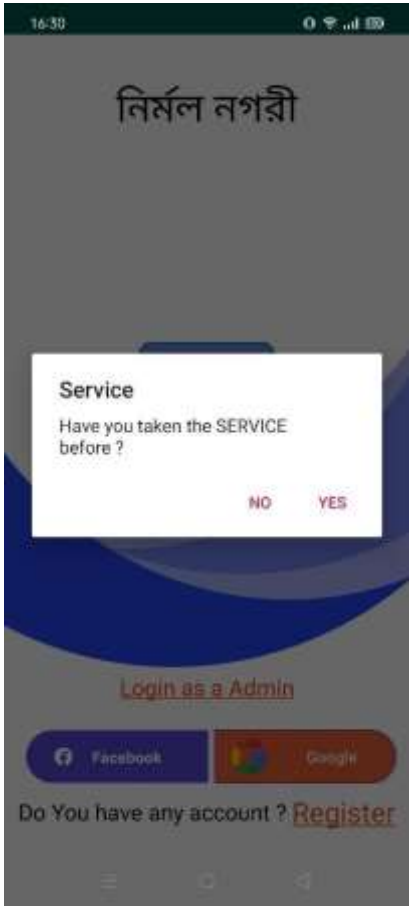5.15

Figure 5.16

Figure
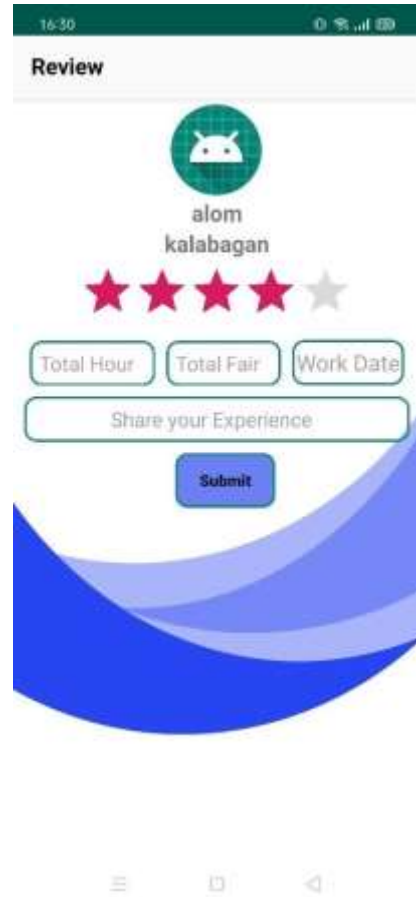5.17

Figure 5.18

Figure 5.19

Figure 5.20

Admin panel

Figure 5.21

Figure 5.22

Figure 5.23

Figure   5.24

In fig 5.21 the Admin can see users and also can remove any unusual user. In fig 5.22 the Admin can add location and cleaner and also can see cleaner list location wise in fig 5.23. In 5.24 the admin can Add news and trend.

5.3: Implementation of Interactions

We implemented a receptive UI for a better user experience to collaborate with this app. We used picture view, text button and card view to make things easier. The UI design of this app is user friendly. We Have used the Progress dialog

5.4: Testing Implementation

System testing is very important to build a perfect, smooth and error free system. We basically did test to check error or bug and make it more user friendly. We create some specific requirement for the purpose of this test

Table 5.1: Testing Objective of our application

01	To check if the program runs or not
02	To check signup works or not
03	To check login works or not
04	To check whether ask for location permission or not
06	To check camera option work or not
07	To check user can upload post or not
08	To check user can request for cleaner or not
09	To check file uploaded to firebase or not

10	To check user can review or not	
11	To check error of double action or not	
12	To check user can logout or not	

In table 5.1 these are the requirements of testing. we took real time user feedback regarding these requirements. Based on that we had our test result.

5.5: Test Results and Reports

Table 5.2 shows the test results depending on the test cases Given in the previous section of this chapter.

Table 5.2: Result of Test Objectives

01	To check the program run or not	Success
02	To check signup works or not	Success
03	To check login works or not	Success
04	To check whether ask for location permission or not	Success
06	To check camera option work or not	Success
07	To check user can upload post or not	Success
08	To check user can request for cleaner or not	Success
09	To check file uploaded to firebase or not	Success

10	To check user can review or not	Success
11	To check error of double action or not	Success
12	To check user can logout or not	Success

CHAPTER 6

Conclusion and Future Scope

6.1 Discussion and Conclusion

Our country especially Dhaka is facing a lot of difficulties with waste management. Because It is one of the most populated cities in the world and people are more careless. They are not aware of what they are doing. The government alone can't solve this issue. So, because of that we people have to come ahead and make a difference. And we hope our system will help in three ways. By creating awareness among people, by encouraging them to make a difference and by providing them service which they can implement in their real life to make their life easier and healthier. Drop complain, news and trend will create awareness and encourage others and nearest dustbin, door to door cleaning service will make their life more easier regarding this garbage issue.

6.2 Scope for further developments

✦ Bangla language for application

✦ Separated app for cleaner

✦ Separated app for admin

✦ Updated features for users

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https://worldpopulationreview.com\world-cities\dhaka-population\

last accessed on 31 August 2020 at 12:30pm.

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[4] Learn about UI/UX design, from at https://www.udacity.com\ last accessed on 5 August 2020 at 12:20pm

[5] Learn about firebase, from at https://www.firebase.google.com\docs , last accessed on 10 September 2020 at 9:00pm

[6] Fig 1.1: Present garbage management condition of Dhaka city from at https://www.cnhtee.com\news , last accesses on 12 September 2020 at 4.00pm

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