

নিরাপত্তা

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A report submitted
In partial fulfilment of the requirements
For the degree of
Bachelor of Science in Computer Science and Engineering

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CERTIFICATE OF APPROVAL

The project report/ project entitled “নিরাপত্তা” is submitted to the Department of Computer Science and Engineering at University of Liberal Arts Bangladesh (ULAB) in partial fulfillment of the requirements for the degree of Bachelor of Science.

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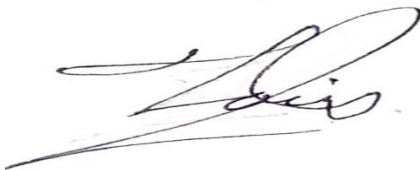
University of Liberal Arts Bangladesh

Signature & Date

DECLARATION

I declare that this report/ project entitled “নিরাপত্তা” is the result of my own research except as cited in the references. The report /project has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.

Signature :



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Chapter 1

INTRODUCTION

1.1 Introduction

As I prepared myself to do an Android base project. It's a one semester long project. I would like to do a project on women safety.

“নিরাপত্তা” is a mobile application service by which a user can file a case from anywhere, can complain for getting security, and can learn self-defense techniques and a SOS button service which can save them from danger. They can cope up with any emergency situations by using SOS button. This technology will bring a great change in the society. It will be a smart step for Bangladesh towards digitalization. It will deal with all the dangerous situations which a woman faces and will support then in that situation which a woman is not able to share with anyone. Normally a woman does not want to file a case of rape, torture and harassment because of the fairness of being more tortured, harassed and again raped by the police or abused by any powerful person. The victim or family members of the victim remain silent due to the lack of support services or provision of protection for victims and witnesses, social stigma associated with rape and prevailing patriarchal attitudes, protracted court proceedings, inadequate investigations by the police, lacunae in the law, particularly the absence of rape shield provisions, etc. Moreover, the rape victim has to undergo severe mental and social constraints.

Overall, I can say this is how we can reduce rape rate of our country otherwise it will continuously grow up. So, we need to be concern about it.

That's all about from me now and I am also thinking to add something more in future which will be more productive for my project.

1.2 Motivation

At the end of 2020, there were at least 1627 rape victims and 317 gang rape incidences reported, which were 1080 and 294, respectively for the year of 2019[1]. During the Covid-19 pandemic, 4 women raped every day on average in Bangladesh, A total of 632 rape incidents took place between April and August in the year 2020, according to statistics compiled by the human rights organization Ain o Salish Kendra from various media reports [2]. Moreover, there have been 142 incidents of attempted rape during the same time frame. At least 29 people died and five committed suicides after being raped [2].

The One Stop Crisis Centre of Dhaka Medical College reports that four to five women are reported to be raped every day, while the 14 units of Women and Child Repression division of the police has recorded 22,291 cases of abuse in 2014 and 21,220 cases in 2015 [10].

Based on data from Odhikar, a Bangladeshi human rights organization, at least 14,718 victims (including 6900 women and 7664 children) were raped within the years of 2001 to 2019 in Bangladesh, and 2823 cases were gang-raped [4]. The highest rape incidence trend reported from 2001 to 2019 was between the year of 2002 to 2003 (with 1350 and 1336 victims reported, respectively), with a gradual decline in 2008. However, this was followed by an increase in the

following years and in particular in 2019, when 1080 rape victims were reported compared to the 635 of 2018. Furthermore, daily 13-rape incidences were reported in the first four-month of the year of 2020 [5] and later on a surge in sexual violence including rape has been observed in Bangladesh. At the end of 2020, there were at least 1627 rape victims and 317 gang rape incidences reported, which were 1080 and 294, respectively for the year of 2019 [6]. Of additional concern, there is evidence of an increase in rape in Bangladesh, under the pandemic. According to the Manusher Jonno Foundation, in a telephone survey conducted among 38,125 participants in June 2020 in 53 districts in Bangladesh, at least 4622, 1839, and 203 of the women felt mentally tortured, physically abused, and sexually abused, respectively, dramatically higher numbers than that seen in prior years [7]. Also, one of the most concerning issues is that only 3% of the victims seek violence-related justice, 2% via local leaders and only 1% seek help from the formal legal authorities [8]. These data were from prior to the pandemic, and help-seeking may have declined further more recently. This inadequate support and justice for Bangladeshi sexual violence victims has led to recent countrywide mass protests, but change in the system has not occurred. Approximately 1093 rape cases were reported in national daily papers in Bangladesh between January and October 2020 [9].

There are many more incidence is occurring around us and I have noticed and felled the pain of the rape victim and her family which encouraged me to take this step and to make this application to save the victim and to make an easy and effective step to support them and to punish the criminal.

1.3 Objectives

The Goal of my project is to create an application which can rescue a person from any odd situation and to build a safe society for woman where no one will tease, harass, torture or rape them.

Tag Line: “WE ARE HERE TO PROTECT YOU...”

1.4 Expected Outcomes

নিরাপত্তা will be the 1st Women safety App in Bangladesh. If we can implement নিরাপত্তা then the rape rate of our country will get low, the social safety and Legal rights can be ensured. Awareness can be created. By the by a spy device market can be created, which will bring a great business for নিরাপত্তা application.

1.5 Project Management and Finance

Cost Analysis for seed investment:

The development period of নিরাপত্তা is 3 months. The cost of this project consists of few different categories such as hardware cost, software cost, development cost and, maintenance cost.

SL	Fields	Quantity	Price per item	per Month	Total per Month	For 3 Months	Total
Office Setup							
1	Office Advance	Nil	Nil	Nil	Nil	Nil	50,000
2	Office Rent	Nil	Nil	Nil	Nil	Nil	30,000
3	Chair	10	5,000	Nil	Nil	Nil	50,000
4	Table	7	13,000	Nil	Nil	Nil	91000
5	Computer	7	35,000	Nil	Nil	Nil	245000
6	Laptop	1	65,000	Nil	Nil	Nil	65000
7	Router	1	2,000	Nil	Nil	Nil	2000
8	Printer	1	10,000	Nil	Nil	Nil	10000
9	UPS	7	5,000	Nil	Nil	Nil	35000
10	Light	10	500	Nil	Nil	Nil	5000
11	CC TV	2	5,000	Nil	Nil	Nil	10000
12	Fan	4	4000	Nil	Nil	Nil	16000
total							609,000
Office Maintenance							
13	Internet	20mbps	Nil	7,000	7,000	21,000	21,000
14	Electricity	Nil	Nil	20,000	20,000	60,000	60,000
15	Office	Nil	Nil	10,000	10,000	30,000	30,000
16	Domain	Nil	Nil	1500(1 year)	1,500	1,500	1,500
17	Setup Expenses	Nil	Nil	Nil	Nil	Nil	2,00,000
18	Food	15	250*7	52,500	52,500	1,57,500	1,57,500
			1750				
total							112,500
Salary							
19	Project manager	1	Nil	1,50,000	1,50,000	4,50,000	Total Salary= 8,85,000
20	Senior Programmers	1	Nil	35,000	35,000	1,05,000	
21	Developers	2	Nil	20,000	40,000	1,20,000	
22	App Security specialist	1	Nil	70,000	70,000	2,10,000	
Grand Total =							16,06,500

Table 1: নিরাপত্তা seed investment

In total the cost for this project development in three months is Tk. 16,06,500/=.

Vendor companies: I have also talked to three vendors and get the costing amount from them to develop the project নিরাপত্তা.

The costing and the name of companies are listed below:

- Lead Soft Bangladesh Limited 23 lacs.
- Zaman IT: 18lacs.
- Vector IT: 10 lacs, but they will not give the source code of the application.

So, from the above analysis I have found to develop the project by hiring employees and maintaining an office by forming a company with a trade license for নিরাপত্তা will be more beneficial.

Cost Analysis for the maintenance of নিরাপত্তা per month:

After building the 3 months long project, there is a monthly cost for marketing and নিরাপত্তা application maintenance.

SL	Fields	Quantity	Price per item	per Month	Total per Month	Total
Office Maintenance						
1	Internet	20mbps	Nil	7,000	7,000	86,000
2	Electricity	Nil	Nil	20,000	20,000	
3	Office materials	Nil	Nil	5,000	5,000	
4	Domain	Nil	Nil	1500(1 year)	1,500	
5	Food	7	250*7 1750	52,500	52,500	
Salary						
6	Project manager	1	Nil	1,50,000	1,50,000	185000
7	Senior Programmers	1	Nil	35,000	35,000	
8	Developers	2	Nil	20,000	40,000	
9	App Security specialist	1	Nil	70,000	70,000	
10	Marketing Manager	1	Nil	40,000	40,000	
Marketing						
11	Digital Marketing	1	1,50,000	1,50,000	1,50,000	90000
12	Campaigns	3	30,000	90,000	90,000	
Grand Total =						361.000

Table 2: Cost Analysis for the maintenance of নিরাপত্তা per month

So, the total cost for the marketing and maintaining নিরাপত্তা is three lacs sixty-one thousand taka per month.

After launching the product, the revenue will start generating after six months as assumed. So, the total time period from the starting up to six months after launching নিরাপত্তা is nine months and the total assumed investment will be thirty-seven lacs seventy-two thousand five hundred (Development cost 16,06,500tk + Maintenance cost (3,61,000*6=21,66,000tk) =37,72,500tk).

1.6 Report Layout

In this report you will find the statics of rape attempt in Bangladesh and the rape rate also the remedy for this problem. Here, you will find my motivation under doing this project and how I have cope up with id and came with a solution. You will also know about the project financing, cost analysis, target customers and benefits under this project implementation. Also, you will know about UX/UI design and database implementation of the project and the benefits and impacts of the project in the society and future scoops.

Chapter 2

Background

2.1 Preliminaries/Terminologies

Here are the terminologies I have used in this report,

SDLC :	Software Development Life Cycle [13].
ULAB :	University of Liberal Arts Bangladesh [16].
UX :	User experience [15].
UI :	User Interface [15].
ERD :	Entity Relationship Diagram [17].
UML :	Unified Modeling Language [18].
XML :	Extensible Markup Language [14].

2.2 Related Works

There are many related works around the world except Bangladesh. This concept is new for Bangladesh and it is adaptable. In Bangladesh there are two government projects which is indirectly related to নিরাপত্তা is calling on 999 for emergency and calling on 102 for women's and children's helping customer care service.

2.3 Comparative Analysis

No	Features App Name	Feature 1	Feature 2	Feature 3	Feature 4	Feature 5	Feature 6	Feature 7	Feature 8	Feature 9	Feature 10	Country	Owner
		Location tracking	AddFamily/Friends	SOS button	Offline SMS & Calling	Helpline	Evidence collection	Coplain Box	Education	HireLawyers	External Spy devices		
1	VithU	✓		✓								India	Private
2	Suspects Registry	✓		✓			✓					India	Private
3	Raksha	✓		✓	✓	✓						India	Government
4	Punjab Police	✓		✓		✓		✓				Pakistan	Government
5	WalkSafe	✓		✓								UK	Private
6	Hollie Guard	✓	✓	✓								UK	Private
7	bSafe	✓		✓			✓					USA	Private
8	Red Panic Button	✓		✓			✓				✓	USA	Private
My App	নিরাপত্তা	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Bangladesh	...
		1st Feature				5th Feature	6th Feature	2nd Feature	4th Feature	3rd Feature	Coming Soon		

Table 3: Comparison table of নিরাপত্তা

Here, I have researched on related applications around the world as there is no direct competitor in Bangladesh and found eight different and famous application of many countries, like; (India, Pakistan, UK, USA) which are VithU, Suspects Registry, Raksha, Punjab Police, Walk Safe, Holle Guard, bSafe and Red panic button. These applications have two common features, like; location tracking and SOS button, on the other hand this all applications have some unique features also, like; Add family, offline calling and SMS, helpline support, evidence collection, complain and spy devices.

2.4 Scope of the Problem

According to Dhaka Tribune the statics of rape, harassment, domestic violence, victims of dowry and child abuse is 1792 cases in 2018, 2749 cases in 2019, 3203 cases in 2020 [19]. The young generation observed the increasing violence on women and decided to protest and came out of home into roads and after many protests the government came up with an addition of new law which is “Death penalty for rapists”, On 12 October 2020, Bangladesh’s government set measures to allow the death penalty for rapists in an amendment that elevates the maximum punishment from life in prison to death. Bangladesh’s Minister of Law, Anisul Huq, said he believes the law will result in a decrease in the number of rapes [3].

But after the implementation of the law, no changes are found in the statics of rape, harassment, domestic violence, victims of dowry and child abuse and 448 cases are counted in the first three months of March, 2021 [20].

After observing the problem, I came up with a solution “নিরাপত্তা” which will produce a fear of law in every criminal’s mind and help will help the government to reduce rape, harassment, domestic violence, victims of dowry and child abuse from the society. নিরাপত্তা will support those women who are being raped, harassed, tortured, victims of dowry and abused.

2.5 Challenges

To find an investor for financing the project নিরাপত্তা will be the biggest challenge, because the financing in a project is a big issue and the break down period also matters. The revenue of নিরাপত্তা will start generating after one year as assumed and the breakdown will meet after one year or one and a half year, as the data are assumed.

Strength 1. User Friendly 2. Can cope up with any dangerous situation 3. Justice can be ensured 4. Unique & Innovative 5. Safety ensures	Weakness 1. Funding 2. Service Provider Engagement
Opportunity 1. Social Revolution 2. Digitalization 3. Technological Revolution 4. Job Creation 5. Property Value	Threats 1. Political influence 2. On time service management

Table 4: SWAT analysis of নিরাপত্তা

Chapter 3

Requirement Specification

3.1 Business Process Modeling

For every business there is a Cristal clear target market and নিরাপত্তা also have its target market. Initially I am targeting the female students of age range 20-29 which is about 18.136% (1.477 crore) of total 49.445% female population of Bangladesh according to world bank data [11]. And, I have also targeted the office going women which is about 18.1 million or 1.810 crore according to Dhaka Tribune [12]. So, my total targeted customers are about 3.287 crore women. Now, I have a plan to charge 200tk per month as subscription charge or yearly.

Time(years)	Customer(lac)	Earning(crore)
0.5year	2	3.64
1year	5	9.64
1.5 year	10	19.64
2 years	20	39.64
2.5 years	30	59.64
3 years	40	79.64
3.5 years	47	93.64
4 years	55	109.64
4.5 years	80	159.64
5 years	100	199.64
Net assumption	328.7	657.4

Table 5: Customer & Revenue Assumption of নিরাপত্তা based on subscription charge (200tk)

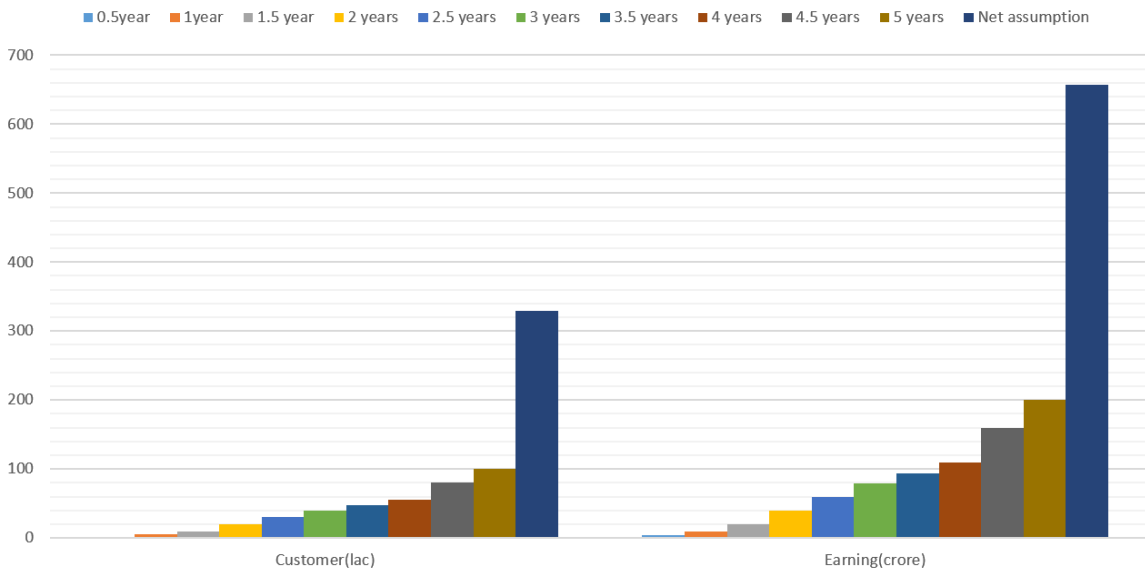


Figure 1: Pie chart of Customer & Revenue Assumption of নিরাপত্তা based on subscription charge (200tk)

Marketing plan of নিরাপত্তা:

The budget of marketing that I am fixing initially is 5 lac per month and after observing the response from market I will increase or decrease the budget for marketing.

The sectors of marketing for নিরাপত্তা that I selected is School, College and University campaigns and Facebook promotions.

3.2 Requirement Collection and Analysis

Analysis: I have researched many SDLC models and found the Waterfall model is suitable for my project because, in this model the development modeling is easy, classic and sequential. To maintain timeline in this model is very easy. After that, I have done the market research and tried to find out similar applications or works like নিরাপত্তা but not found any applications like নিরাপত্তা in Bangladesh but found many similar applications outside Bangladesh. I have done market research and demands for about 28 days. As, the project development time is 3 months and I have taken 5 days for requirements collection, 15 days for UX/UI design, 30 days for development, 5 days for testing, 5 days for fixing bugs and again tested for 2 days.

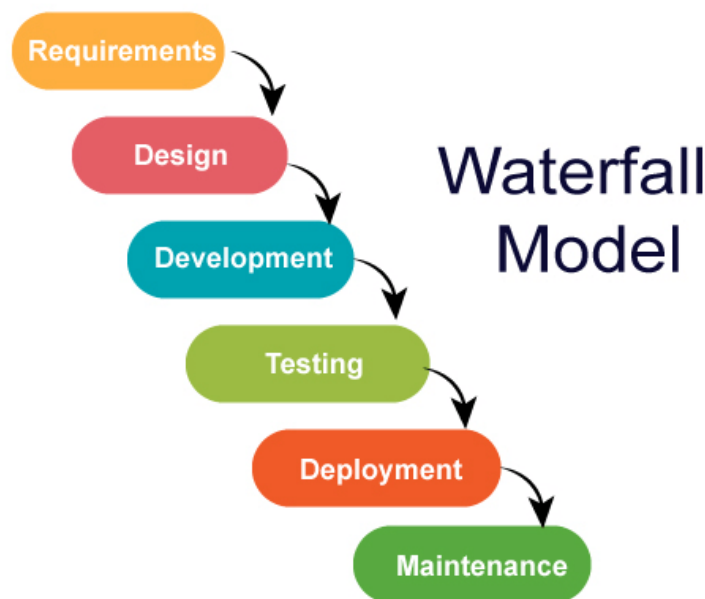


Figure 2: Waterfall Model for নিরাপত্তা

- **Requirement:** I have collected all the requirements in this stage, such as; software (Android Studio, Adobe XD, Visual Studio and windows 10 operating system) and hardware (Computer of RAM 16GB/GPU 4GB & CPU 7th generation, Internet connection of 20mbps and 3 android mobile phones).
- **Design:** Using Visual studio I have firstly designed ERD and UML diagrams for নিরাপত্তা, designed the logo using Adobe and also designed the UX/UI for the

android application নিরাপত্তা in xml under Android Studio. I have tried to design the application user friendly as far as I can do.

- **Development:** I have done the android application development on Android Studio with Java coding. I have used linear layout for this project and there are 32 xml layout resource files and 13 java classes.
- **Testing:** I have used 3 Android mobiles and installed my application নিরাপত্তা in it and checked the login, signup, send location functionalities and user friendliness. I found two bugs at the starting and fixed those bugs and again tested in different android mobile phones.
- **Deployment:** I have developed the demo of the android application নিরাপত্তা and it is fully satisfying and functional after doing all functional and nonfunctional testing completed.
- **Maintenance:** As I am developing the demo product, here, I have fixed bugs found during testing and build new apk version of নিরাপত্তা with the issue patches as required.

3.3 Use Case Modeling and Description

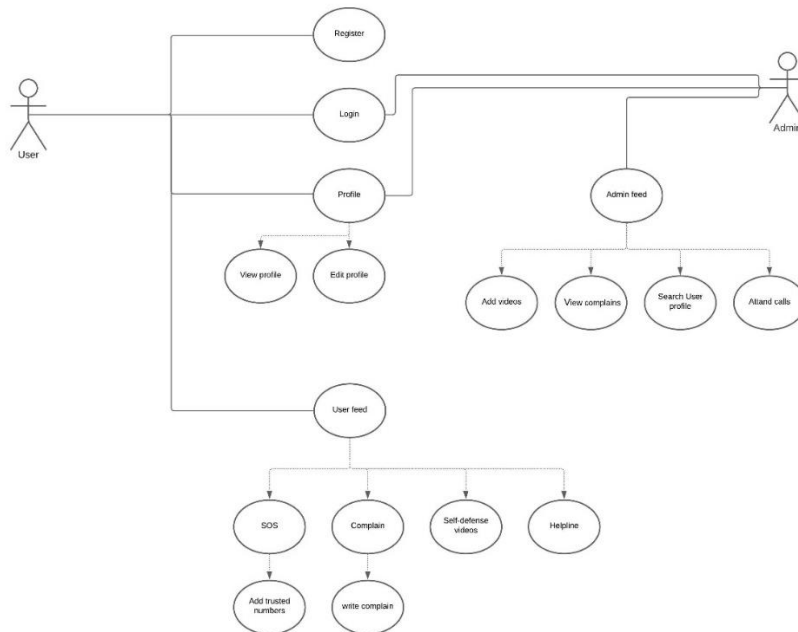


Figure 3: Use Case Diagram Of নিরাপত্তা

In the above use case diagram, we can see user first need to sign up and then can login into the system and can view the profile and edit it. After that, the user can see the user feed and decide which feature she want to use. If the user press SOS button once then they can add new trusted numbers, if they press complain they can write complain, if they press self-defense videos, they can see videos of self-defense. Here, Admin can also login into the system and can view the

profile and edit it and after that admin will see Admin feed, they can Add videos, view complains, search user profile and attend calls from users.

3.4 Logical Data Model

I have used Firebase database for Realtime user verification and নিরাপত্তা is not collecting any data for user privacy issues, as a result there is no logical data model for the project নিরাপত্তা.

3.5 Design Requirement

In the previous chapter we have mentioned our project specification. Though our system works on an efficient way, we are trying to cover whole the country through our system.

However, নিরাপত্তা users will get support from our system and will get extra security. There will be a location tracking system in নিরাপত্তা. Generally, our goal is to control the rape rate using our system. We have presented the development methodology using various diagrams throughout this chapter.

➤ DFD Level 1 Diagram

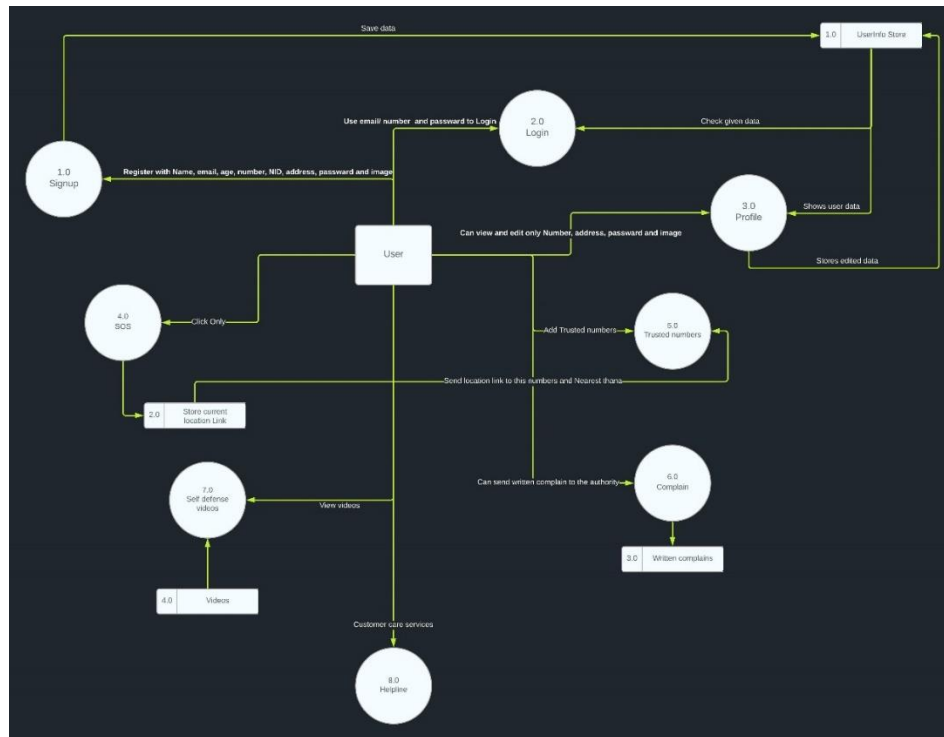


Figure 4: DFD Level 1 Diagram Of নিরাপত্তা

In the above DFD level 1 diagram, we can see user first need to sign up with NID, name, password, number, email, address, gender, trusted numbers and this data will store in the database and then they can login into the system using email and password. Then in process 3.0 user can view the profile and edit it and the edited data will be updated into database. In the

process 4.0, if user press SOS button, then the current location will be stored into database and send to the process 5.0 trusted numbers, In the process 6.0 complain they can write complain and the complaint will be stored into database, In the process 7.0 self-defense videos, they can see videos of self-defense. In the process 8.0 Helpline, they can seek help by making a call.

➤ Use Case Diagram

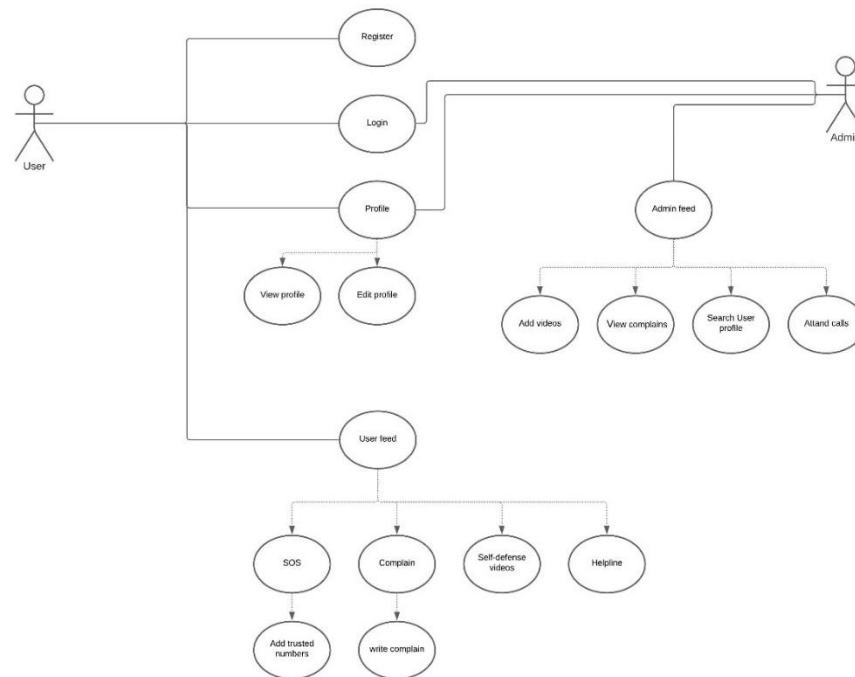


Figure 5: Use Case Diagram Of নিরাপত্তা

In the above use case diagram, we can see user first need to sign up and then can login into the system and can view the profile and edit it. After that, the user can see the user feed and decide which feature she want to use. If the user press SOS button once then they can add new trusted numbers, if they press complain they can write complain, if they press self-defense videos, they can see videos of self-defense. Here, Admin can also login into the system and can view the profile and edit it and after that admin will see Admin feed, they can Add videos, view complains, search user profile and attend calls from users.

➤ Activity Diagram

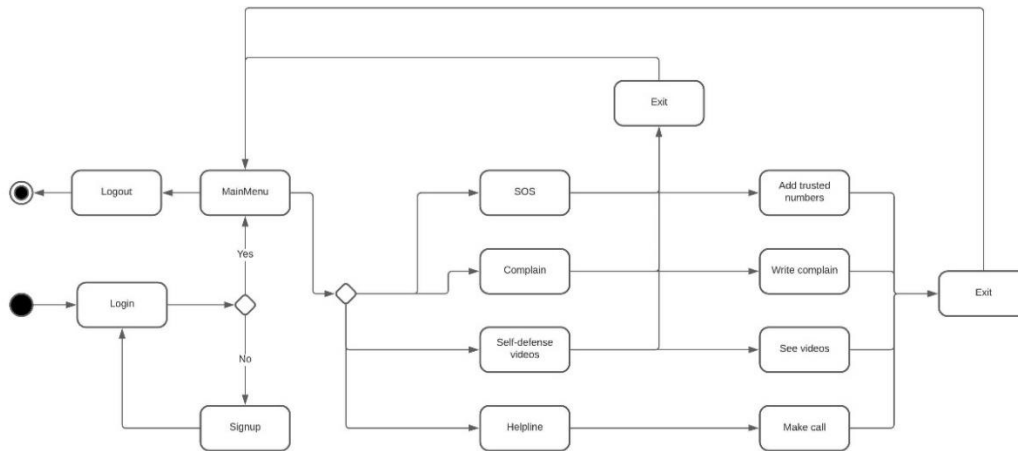


Figure 6: Activity Diagram Of নিরাপত্তা

In the above activity diagram, we can see user first need to sign up and then can login into the system. After that, the user can see the main menu and decide which feature she want to use. If the user press SOS button once then they can add new trusted numbers and can exit to main menu. User can also give written complaint or verbal complain by using the feature complain and Helpline and, they can learn self-defense technique from videos given in the feature self-defense videos and exit to main menu, after that they can logout also.

➤ Class Diagram

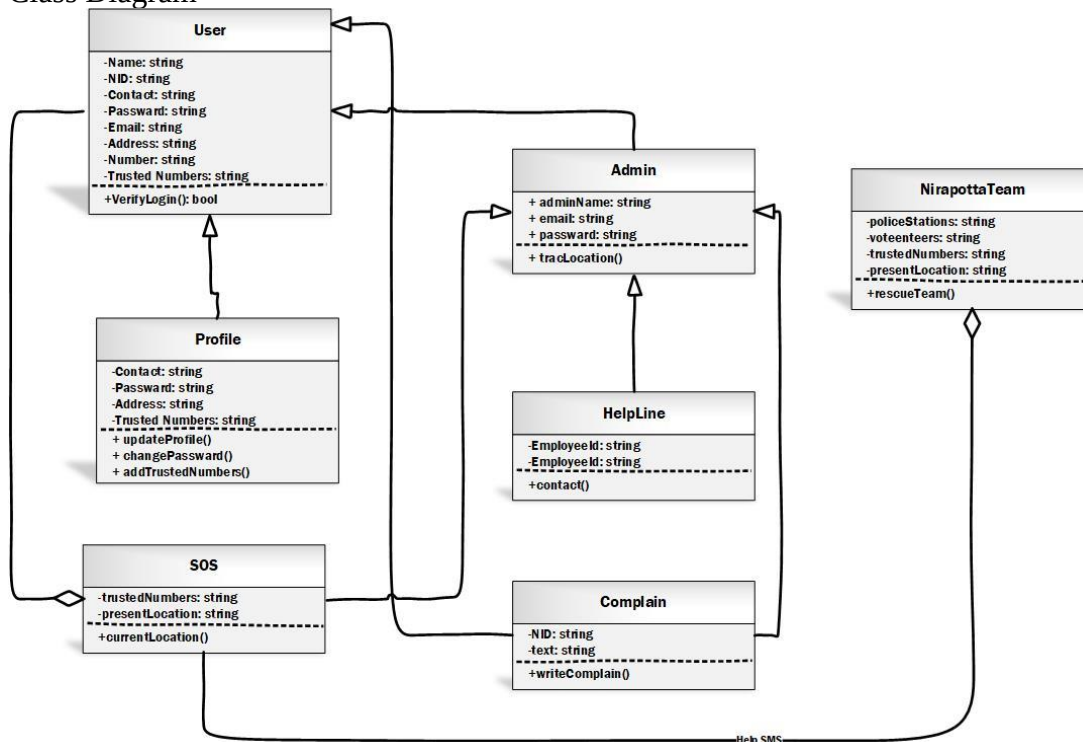


Figure 7: Class Diagram Of নিরাপত্তা

In the above class diagram, we can see user first need to sign up and then can login into the system. After that, if the user press SOS button 3times then the current location of the user will

send to the trusted numbers given by the user and to the nearest police station and নিরাপত্তা team. User can also give written complaint or verbal complain by using the feature complain and Helpline.

➤ ER Diagram

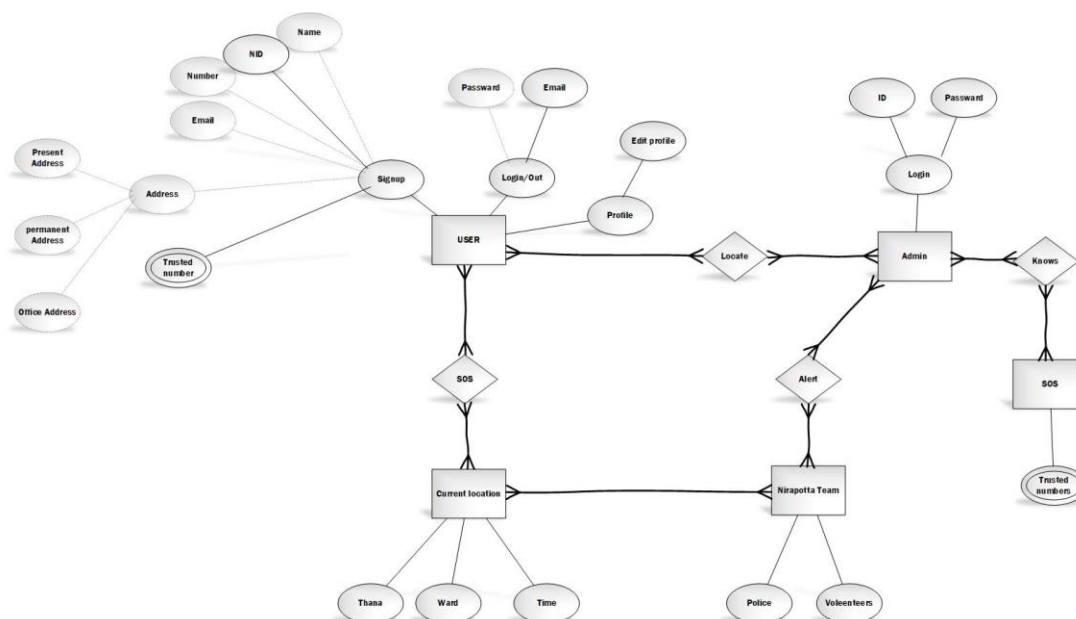


Figure 8: ER Diagram Of নিরাপত্তা

In the above ER diagram, we can see user first need to sign up and then can login into the system. After that, if the user press SOS button 3times then the current location of the user will send to the trusted numbers given by the user and to the nearest police station and নিরাপত্তা team by comparing with the table or thana and ward with the user's present location. User can also give written complaint by using the feature complain and user also need to give their NID number for verification.

Chapter 4

Design Specification

4.1 Front-end Design

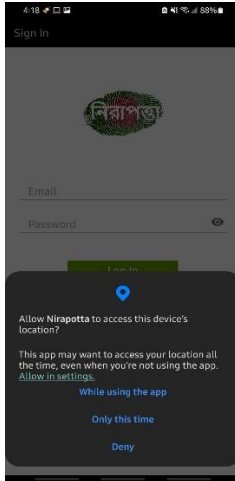


Figure 9: Location Permission

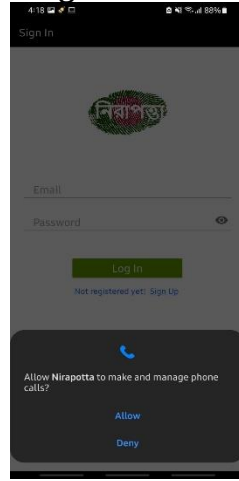


Figure 10: Calls Permission

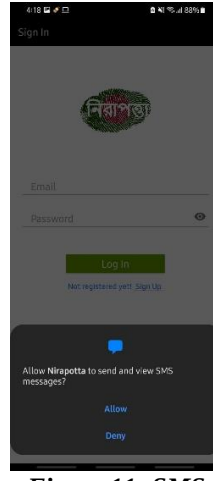


Figure 11: SMS Permission

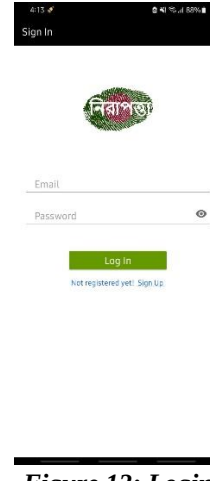


Figure 12: Login page

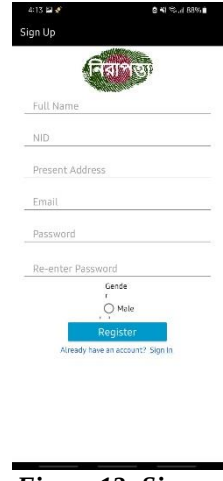


Figure 13: Signup page



Figure 14: Warning page

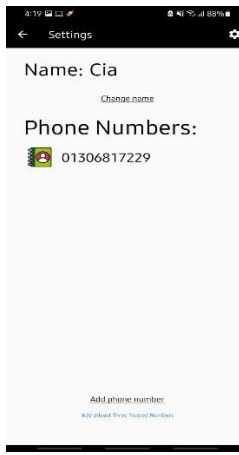


Figure 15: Entry page

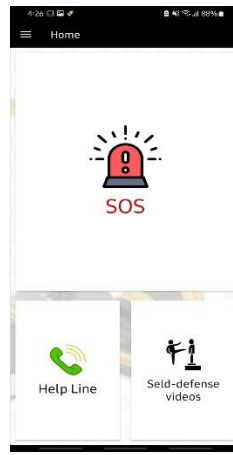


Figure 16: Main Menu

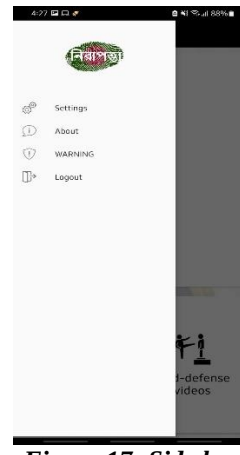


Figure 17: Side bar

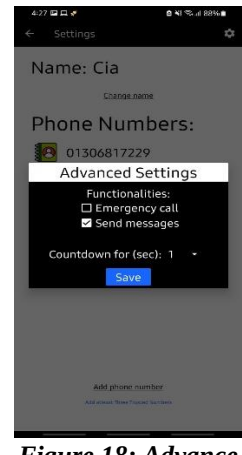


Figure 18: Advance settings



Figure 19: About page



Figure 20: SOS button

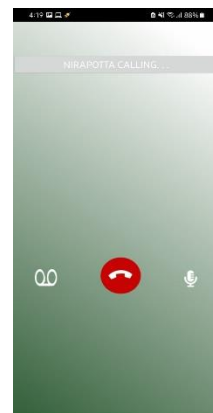


Figure 21: Helpline

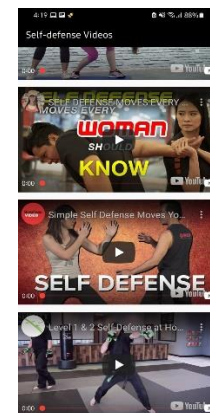


Figure 22: Self-defense videos

4.2 Back-end Design

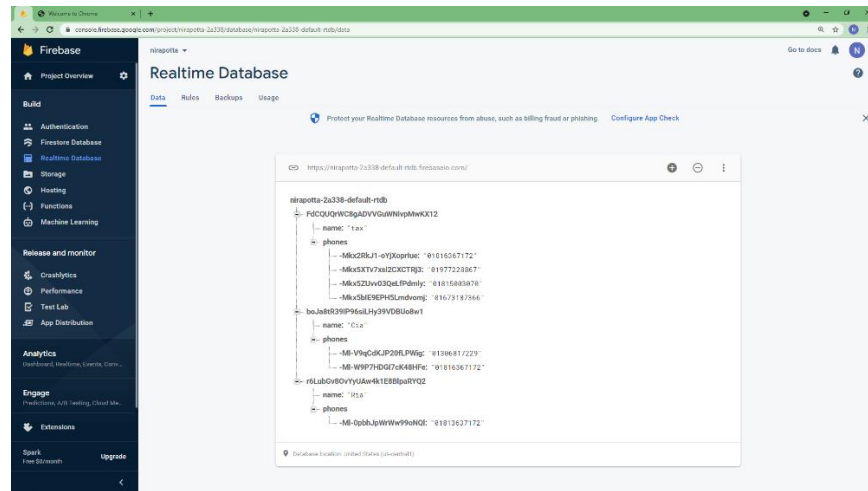


Figure 23: Back-end of নিরাপত্তা

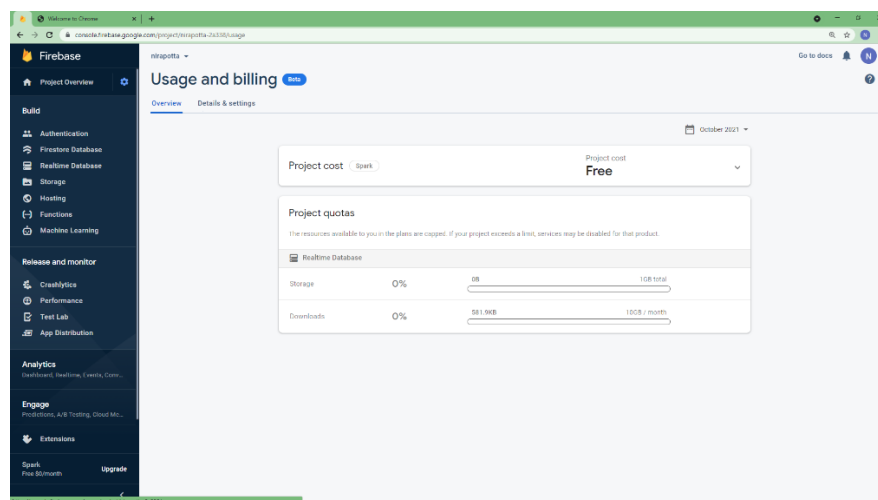


Figure 24: Firebase free Realtime database নিরাপত্তা

4.3 Interaction Design and User Experience (UX)

User need to install the application into his/her mobile phone and then the application will ask for permissions of location, calling and SMS. After giving the permissions the application will show a warning text and after clicking ok the application will take you to the login page and if you are not logged in you have to sign in and then the application will ask to add at least three Trusted numbers and to give user name, and then it will take into the main menu where there are three functions SOS, Helpline and Self-defense videos and a side bar for setting, about, how to use and logout function. There is advance settings option under setting.

4.4 Implementation Requirements

Software used for Front-end design:

- Adobe XD
- Visual Studio
- Android Studio/xml (Java coding)

I have done the UI design on xml under Android studio and coding was done in Java language. Firstly, I have designed the UI/UX on Adobe XD and then done the main coding design on xml file under Android Studio. The background and logo are designed on Adobe XD and copied into drawable file in android project.

Chapter 5

Implementation and Testing

5.1 Implementation of Database

As in the literature review chapter we have identified the uniqueness of our system, also we have identified some additional features that can be added to our system in future. The project specification needed to develop this application is concentrated in establishing an Android application. We need to develop a system that will work effectively in real-time.

Listed are the specifications of Back-end design of নিরাপত্তা project-
Set of requirements that are needed to achieve the specifications,

- Back-end: Firebase Realtime database.

I have used Firebase Realtime database for user login verification and to gain the trust of my customers because, we are not saving any data of any user to keep their privacy.

5.2 Implementation of Front-end Design

I have done the UI design on xml under Android studio and coding was done in Java language. Firstly, I have designed the UI/UX on Adobe XD and then done the main coding design on xml file under Android Studio. The background and logo are designed on Adobe XD and copied into drawable file in android project.

Listed are the specifications of Front-end design of নিরাপত্তা project-
Set of requirements that are needed to achieve the specifications,

- User Side:
 - Programming Language: JAVA
 - Front End: xml/Android studio and Adobe XD

5.3 Testing Implementation

I have used 3 Android mobiles and installed my application নিরাপত্তা in it and checked the login, signup, send location functionalities and user friendliness. I found two bugs at the starting. The bug was, firstly when user log in the application shows the warning text and directly takes into self-defense videos and the application crashes, Secondly, in the self-defense videos the user was not able to scroll down. After that, firstly have searched for solution to fix the bug and I found, I had given self-defense video's address in "onclicklistener" of the "ok" button of warning page and then I fixed it. Secondly, I searched and found that, I have kept the video links under linear layout only, after that I have kept the linear layout where video links are written under a "scroll view". I have also tested the application using Android Studio with java, which are "Example Unite Test" and "Example Instrumented Test".

5.4 Test Results and Reports

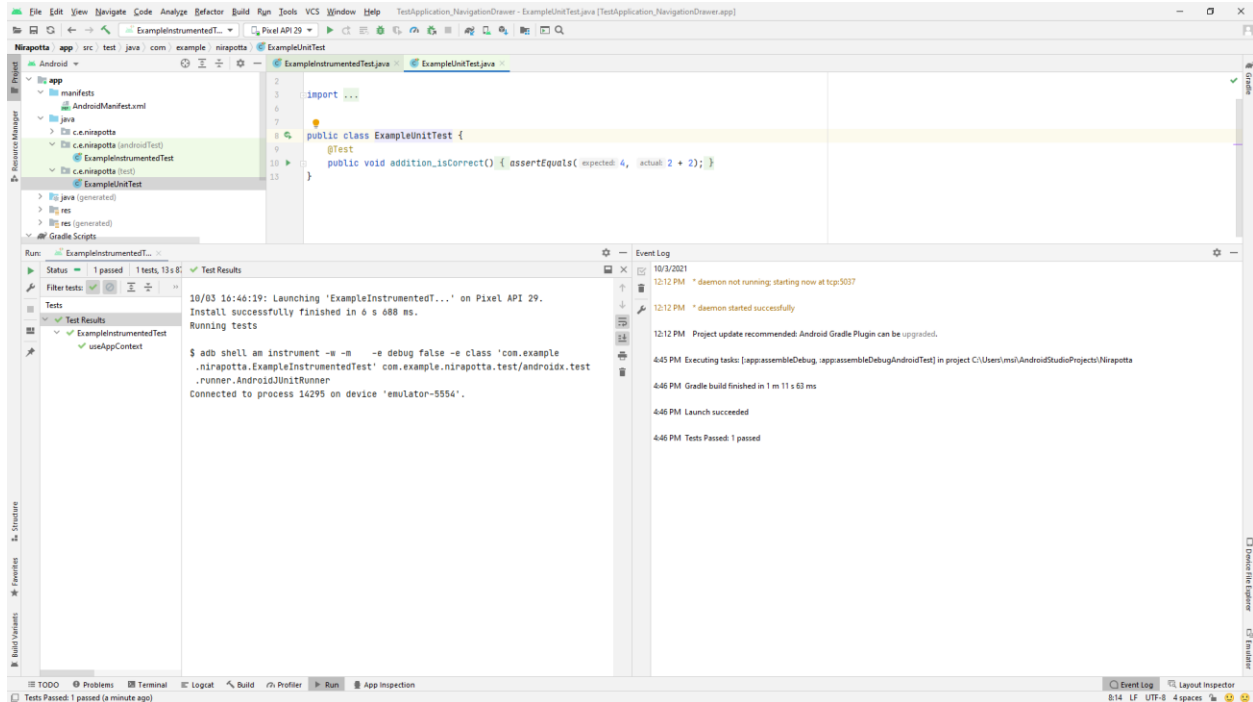


Figure 25: Screen shot of “Example Unit Test” result

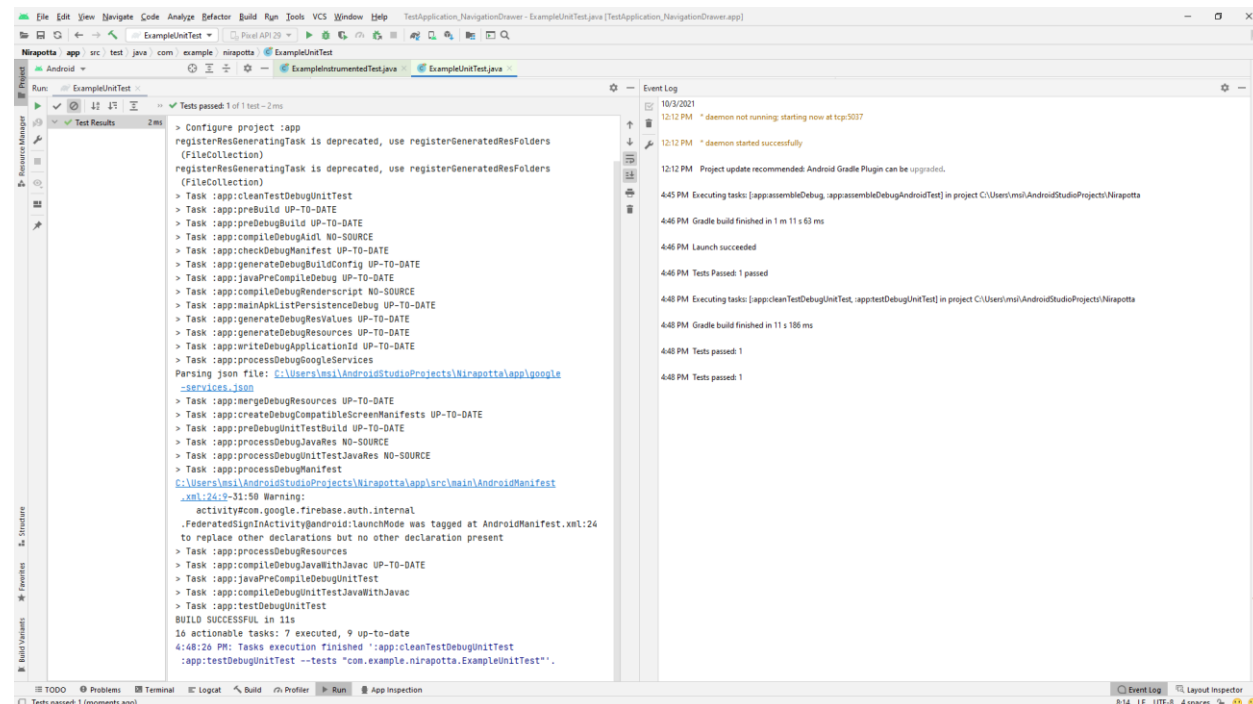


Figure 26: Screen shot of “Example Instrumented Test” result

CHAPTER 6

IMPACT ON SOCIETY, ENVIROMENT AND SUSTAINABILITY

6.1 Impact on Society

নিরাপত্তা is an application by which we can reduce the rape rate of our country, Bangladesh. Although it is 2021, since the women of our country don't feel safe to move around at night. But, after implementing my application the women will get extra security by my services and my application will create a fear of law among the criminals which will affect the view of the society positively. Women will feel more freedom to move around and will feel safe.

6.2 Impact on Environment

The app নিরাপত্তা is a mobile application and it has no environmental effect directly, but the impact of mobile phone can be count as an environmental impact for this project as it is a mobile phone application.

6.3 Ethical Aspects

The ethics of নিরাপত্তা is to help the helpless women who is being raped, abused, tortured, harassed and undergoing domestic violence. নিরাপত্তা will be a barrier between this un social activities and the women, but there will be a small amount of charge for the maintenance of the application marketing and functional activities.

6.4 Sustainability Plan

The total project sustainability depends on community sustainability, financial sustainability, organizational sustainability;

Community Sustainability

Violence over women and rape rate are increasing day by day in Bangladesh. Women are not getting legal justice for lack of evidences and are being raped for security issues. This the view of present society as shown in the news channels and the increasing rape rate.

Now, নিরাপত্তা came with a technology which will increase the security for the women and will support then whenever they will be on danger. As নিরাপত্তা is helping and supporting the women for being safe and ensuring their legal rights, they will also support নিরাপত্তা for being sustainable and to help them as far as it can.

Financial Sustainability

An organization can be financially sustainable by following four key components of financial sustainability which are, access to capital, profitability, reporting and planning [22]. At present নিরাপত্তা has no investors but, if নিরাপত্তা get an investment or access to capital it can be implemented and launched in the market, after launching নিরাপত্তা it will start generating revenue after six months as assumed. By following this, নিরাপত্তা meets the first key components of financial sustainability. As the application নিরাপত্তা generates revenue from subscription charges, it has no loss because, the more subscription will generate more money. So, নিরাপত্তা will always be in profit margin after meeting the breakeven point. An annual report will be generated every year after launching নিরাপত্তা. So, নিরাপত্তা meets the third key components of financial sustainability. Lastly, to meet the fourth key components of financial sustainability নিরাপত্তা has already have a plan to make the service more effective and to make the application more user friendly for the future by adding spy devices.

Organizational Sustainability

An organization can be sustainable by following four pillars of sustainability which are, human, social, economic and environmental [21]. The application নিরাপত্তা also follows these four pillars of sustainability, like; নিরাপত্তা will have a great demand for every woman if the marketing strategies can be followed strictly. So, নিরাপত্তা followed the first pillar human successfully. Secondly, নিরাপত্তা is triggering the society for not to rape, harassment, domestic violence, victims of dowry and child abuse and নিরাপত্তা is creating a barrier between the rapist and the woman. So, নিরাপত্তা followed the second pillar social successfully. Thirdly, নিরাপত্তা is generating a revenue and will give tax to the government and contribute in the national GDP of Bangladesh. So, নিরাপত্তা followed the third pillar economic successfully. Lastly, নিরাপত্তা is a mobile application and it does not have any environmental effects. So, নিরাপত্তা also followed the fourth pillar environmental successfully.

CHAPTER 7

CONCLUSION AND FUTURE SCOPE

নিরাপত্তা is a public essential system. This project will be beneficiary for the government. According to my findings, designs and research it is estimated to be a successful project if worked on properly. The goal of my work was to develop an application that will work practically in real life to reduce the rape rate of Bangladesh.

To develop the system, I have maintained a well generated timeline and worked according to it.

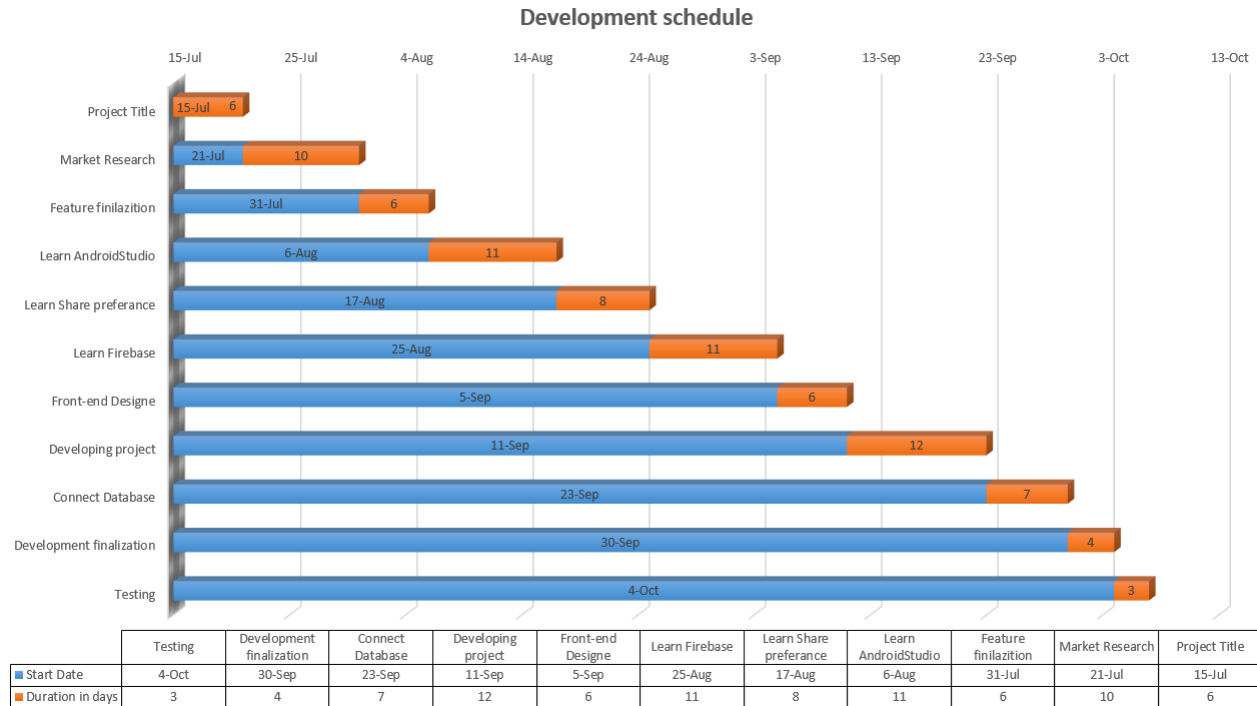


Figure 27: Gantt chart of নিরাপত্তা

Here is the Gantt chart of my project that shows the completion of each task according to weeks and months. There are four main tasks – Proposal submission, Literature review and proposed methodology, Development and implementation, Final report and outreach. This is a 13 weeks long project, after each week there was a task to do which is Internal Supervisor meeting. I had an aim to complete this project within October 5.

7.1 Discussion and Conclusion

As a project developer, I have learned some really amazing technologies which are practiced in the Business world of Software Industry.

In my three months of project period, I have learned JAVA, Android Studio for front-end design and firebase database for back-end to develop the Android application. After a little bit of research, I came to know that Android Studio is introduced by Google. Which the most are demanding technology in the present time for Android application development. In my Android development project, I worked with JAVA. I learned why it is better than other technologies, why it is easy to learn and implement and the ways to make my future as a project developer.

Also, In Bangladesh we really need this kind of application so that women can feel free to walk anywhere without having a fear of being raped or harassed. It will also give them full security and help whenever they need any.

7.2 Scope for Further Developments

This report resembles the design and development of নিরাপত্তা app. There is a huge possibility of extending the features of this project in future. In future, I will also add some features. So that the user can get maximum security. Right now, the application is only on English language but in feature Bangla languages will be added so that this system can be used for everyone and an evidence collection method. I will also introduce some spy devices integrated with the application to make the security more strong and easy collection of evidences. Broadcasting of Bangla languages, spy devices and evidence collection can be an extension of নিরাপত্তা.

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