



ONLINE COMPLAINT SYSTEM

A PROJECT REPORT

Submitted By

Md. Jahidul Islam
ID: EMCS0708054

Sharmin Akter
ID: EMCS0708041

in partial fulfillment for the award of the degree

of

MASTER OF SCIENCE

IN

**DEPARTMENT OF COMPUTER SCIENCE AND
ENGINEERING**

COMILLA UNIVERSITY: COMILLA-3506

August, 2023

COMILLA UNIVERSITY: COMILLA-3506

BONAFIDE CERTIFICATE

Certified that this project report “**Online Complaint System**” is the bonafide work of “**Md. Jahidul Islam, Sharmin Akter**” who carried out the project work under my supervision.

Signature

Dr. Mahmudul Hasan

CHAIRMAN OF THE EXAM COMMITTEE

Department of Computer Science and
Engineering

Comilla University

Signature

Khalil Ahammad

SUPERVISOR

Department of Computer Science
and Engineering

Abstract

The "Online Complaint System" is a web-based application. It is designed to address the problems of the day-to-day life of the citizens of a Panchayat or a City corporation, by bringing them to the notice of the appropriate parties.

In today's world of technology, everyone has a smartphone. This is our attempt to improve the human life system by using this technology. Since anyone can complain here and no one has to go to another office for this, it saves both time and money. Moreover, pictures or necessary documents can be attached to each report which is not possible in the traditional way. Having more facts makes it take less time to solve the problem. Because it is web-based, every moment updates are notified to the complainant. At the same time, since other people can see all the activities, it is going to ensure the transparency of the corporation.

Acknowledgments

First and foremost, we would like to thank the Almighty ALLAH for the gift of life, intelligence, and understanding that he has bestowed upon us, providing a reason for our existence. And to r families for their unwavering love and support throughout our lives.

We thank Tazkia Binty Faruqui, who we consider to be our mentor and supervisor, for his knowledge and intellect in supervising this project. This excellent effort, we believe, is the product of his excellent supervision and cooperation.

Finally, we'd want to express our gratitude to our faculty's instructors for their excellent work over our four years of study. May ALLAH bless them and protect them. We all adore you.

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Chapter 1

Introduction

This software can be used to report the problems of day-to-day life to the appropriate authority. Users can see submit a report as well as check previous reports or responses. This system involves three groups of people's Complainants, Divisional officers, and Administrators. The best refinement is going to be ensured as the reports are divided by department. Each department will take care of the complaints under their department only. One section will not see the report of another section. Divisional officers can respond to reports but can't delete any reports. All reports initially will go through the approval process to avoid spam or offensive report.

1.1 Objective

The application will allow users to submit reports without an account. Instead, it will collect their name, phone number, and address to verify or further communicate.

1.2 Motivation

We are often faced with various problems but due to lack of time or any other reason, the authorities are not informed. In this way, those problems are avoided by the authorities. As a result, these problems are not solved or it is too late. Again, it is often seen that many people do not want to get into official trouble. So do not open your mouth amid hundreds of problems. Our goal is to solve the problems of these people. As well as building a system that is suitable for all people who use smartphones or computers. Using this system will not only make it easier to complain but will also save both time and money. They will be able to take swift action as soon as they come to the notice of the authorities, which will reduce the suffering of the people as well as increase the acceptability of the other side.

Chapter 2

Literature Review

2.1 Literature Overview

From this project, we may expect to design and implement new links, as well as design and implement users and organize new links by subject.

2.2 System Analysis

A system analysis will be conducted to see if it is possible to create information based on the organization's rules and strategies as well as user requirements, as well as to identify and eradicate the current system's flaws. The new system should be cost-effective, increase management, productivity, and services, improve user/system interface, improve system dependability, availability, flexibility, and expansion potential, and improve data quality and usability.

2.3 Proposed System

The proposed system is primarily designed to receive complaints at the grassroots level of an organization and ensure maximum service through resolving them. It makes tasks lots easier for the both complainant and the authorities. It reduces the time required to solve an issue and saves time and money. This app has a user-friendly and easy user interface on both desktop and native levels.

2.4 Complainant Requirements

1. No accounts are required to submit a report
2. Complainant can view their report after approval
3. Complainant can check responder profile
4. Complainant can view previous reports submitted by others
5. Complainant personal information will be hidden from the public as well as divisional officers.

2.5 Hardware and Software Specification

2.5.1 Hardware Specification

- Processor → Intel Celeron
- Processor Speed → 700 MHz
- RAM → 1 GB
- Hard disk → 5GB

2.5.2 Software Requirements

- Operating System → Windows 7 SP1+/8.1/10/11/ Mac/ Linux
- Database → SQL
- Server-side Technology → ASP.Net Core
- Server-side Scripting → C#, SQL (MSSQL)
- Client-side Scripting → HTML5, CSS3, Bootstrap, JavaScript

Chapter 3

Methodology and Design

3.1 Use case Diagram

C# (C-Sharp) is a general-purpose, multi-paradigm programming language developed by Microsoft that runs on the .NET Framework. C# is widely used for building mobile applications, games, and windows applications.

With the help of the C# programming language, we can develop different types of secured and robust applications:

- Window applications
- Web applications
- Distributed applications
- Web service applications
- Database applications etc.

This application is a web application. We've used .NET's latest release ASP .Net Core 6 and Entity Framework Core 6 on this application.

C# is approved as a standard by ECMA and ISO. C# is designed for CLI (Common Language Infrastructure). CLI is a specification that describes executable code and runtime environment.

C# programming language is influenced by C++, Java, Eiffel, Modula-3, Pascal, etc. languages.

3.1.1 Overall Use Case

In this diagram, the general purpose of the application has been shown.



Figure 3.1.1 Overall use case

3.1.2 Complainant Use Case

The purpose of a complainant has shown in the diagram. A complainant can submit a report, view a report and respond.

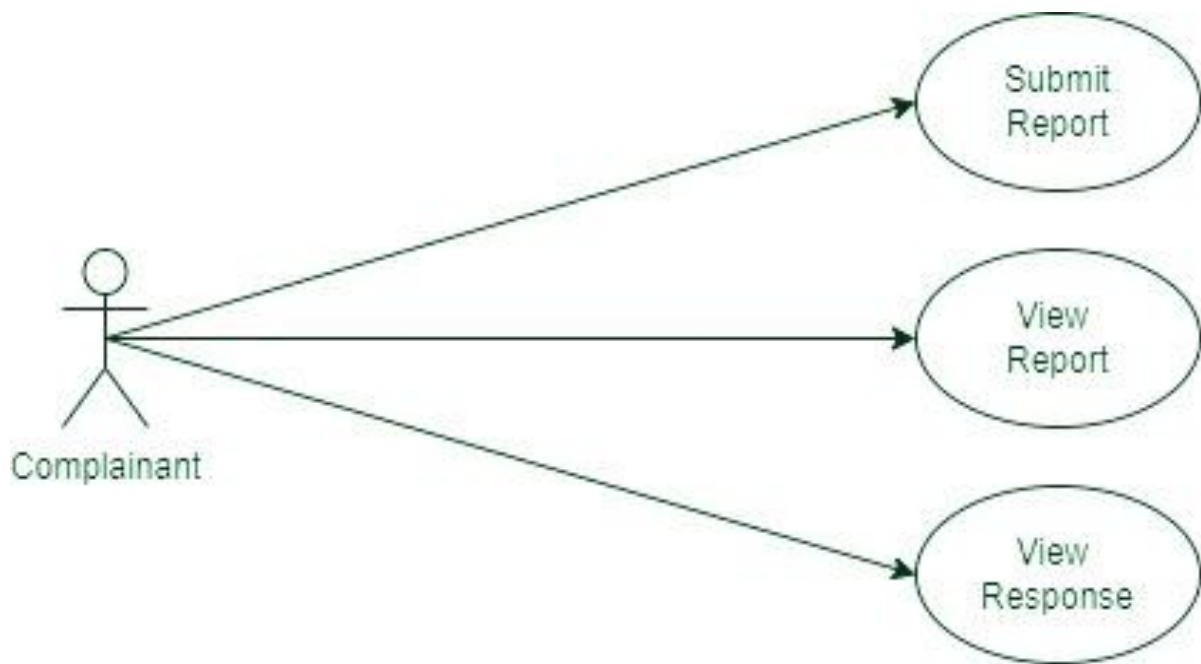


Figure 3.1.2 Complainant use case

3.1.3 Divisional Officer Use Case

The purpose of divisional officers has shown in the diagram. A divisional officer can log in, view the report, add or remove the response, view the response, approve the report, and log out.

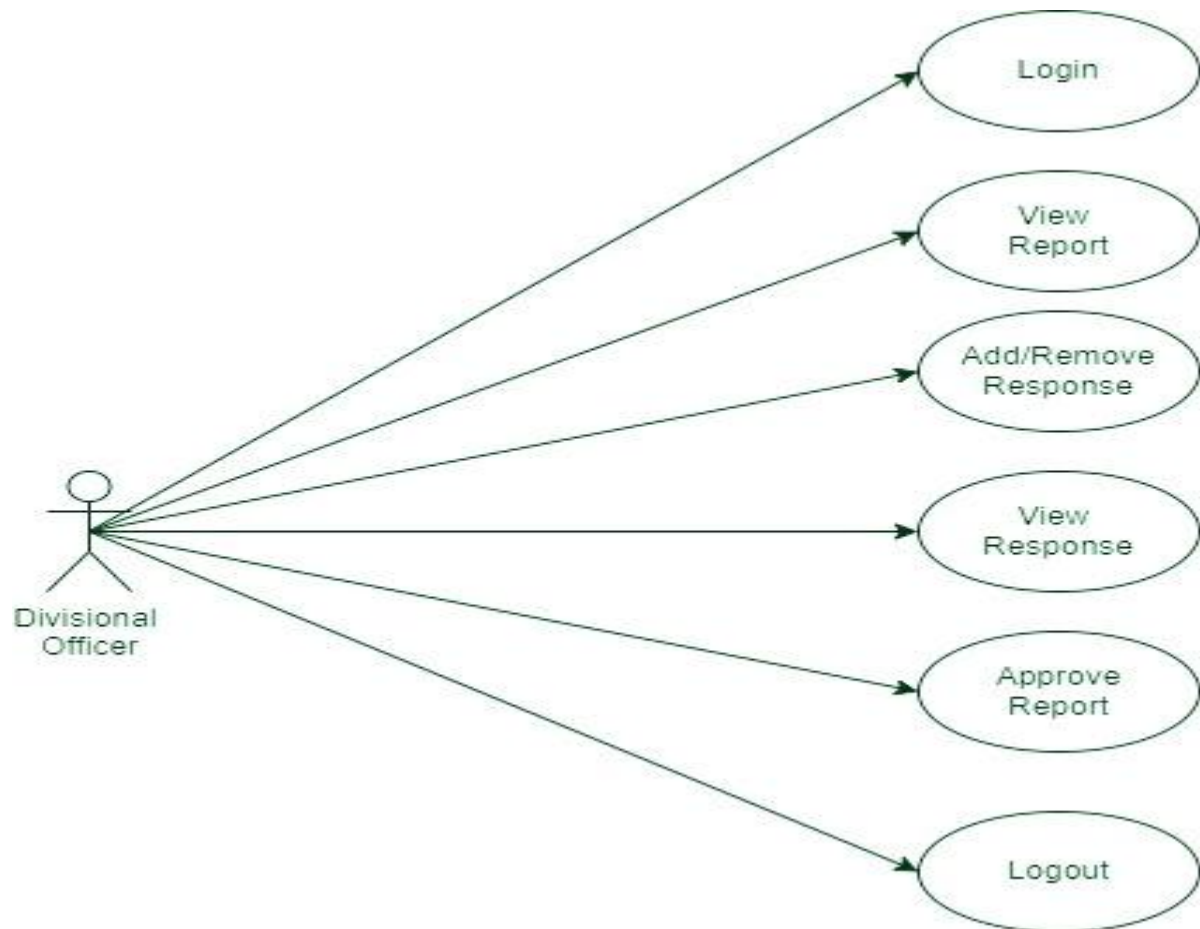


Figure 3.1.3 Divisional Officers use case

3.1.4 Administration Use case

The purpose of administration has shown in the diagram. An admin can log in, view reports, add or remove responses, view responses, approve the report, remove the report, manage the account, manage a department, and log out.

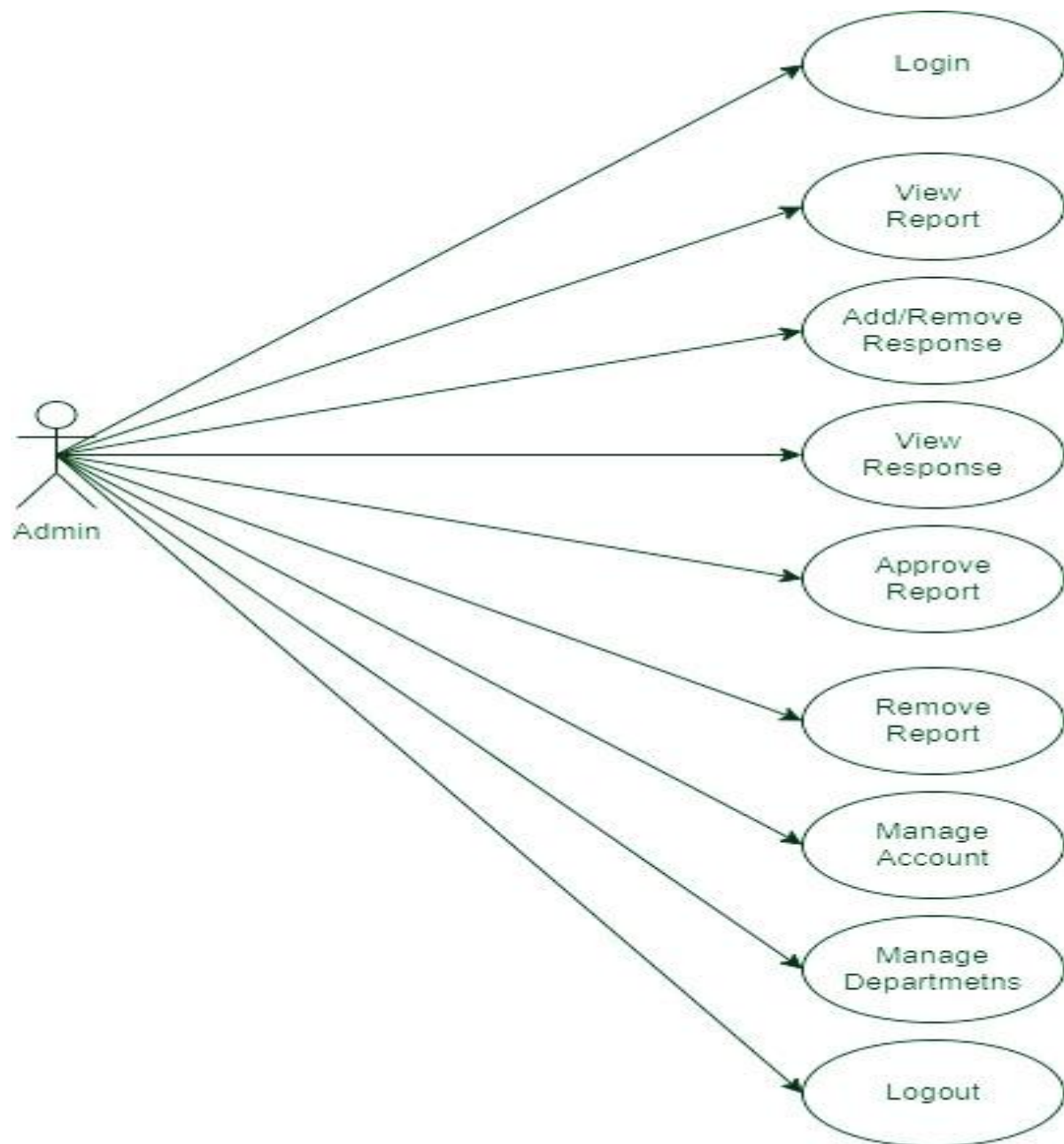


Figure 3.1.4 Admin use case

3.2 ER-Diagram

In this diagram, we can see the connection between user flow and data flow. And their attributes also.

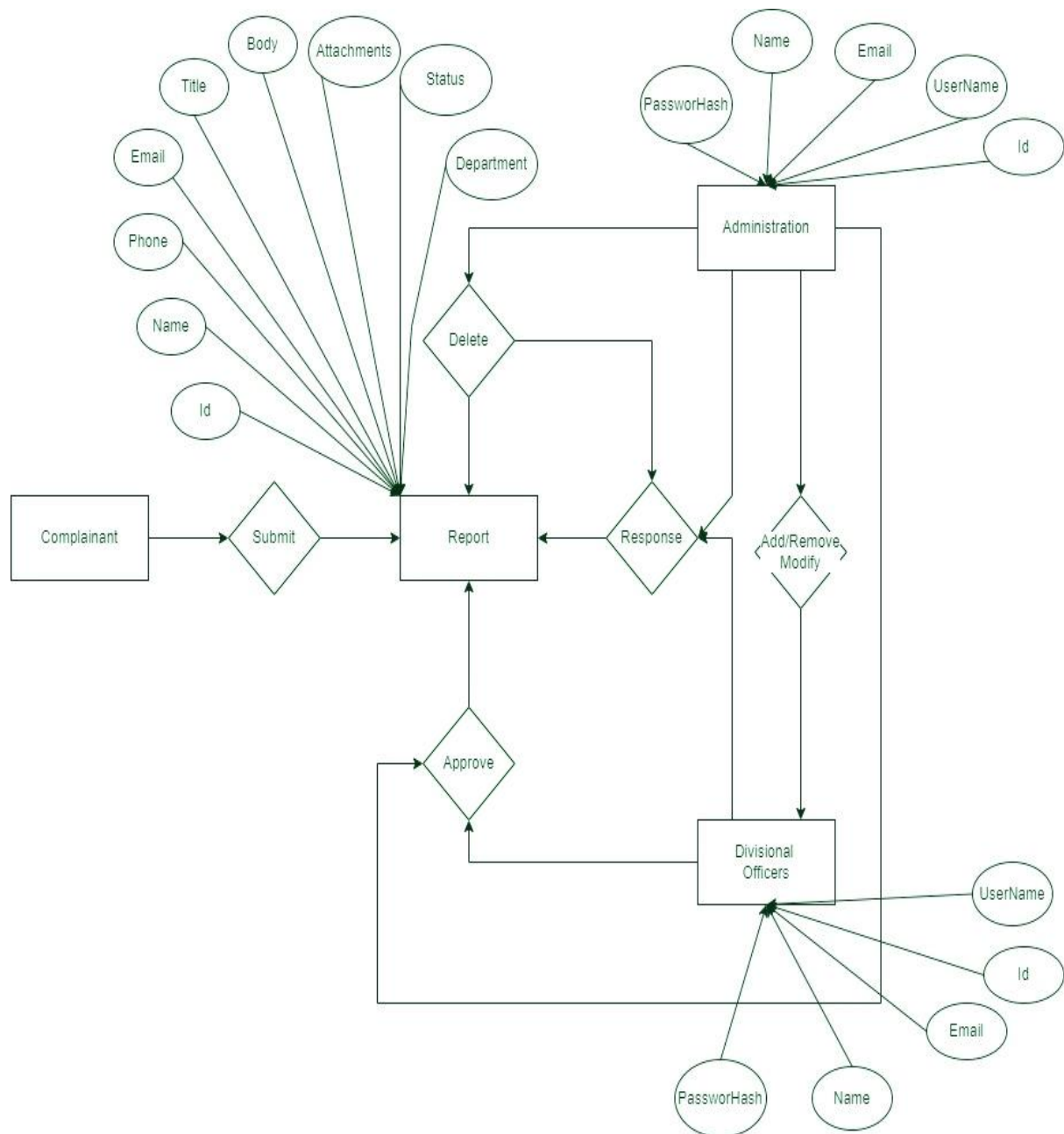


Figure 3.2.1 ER-Diagram

Chapter 4

Database Design

4.1 Table List

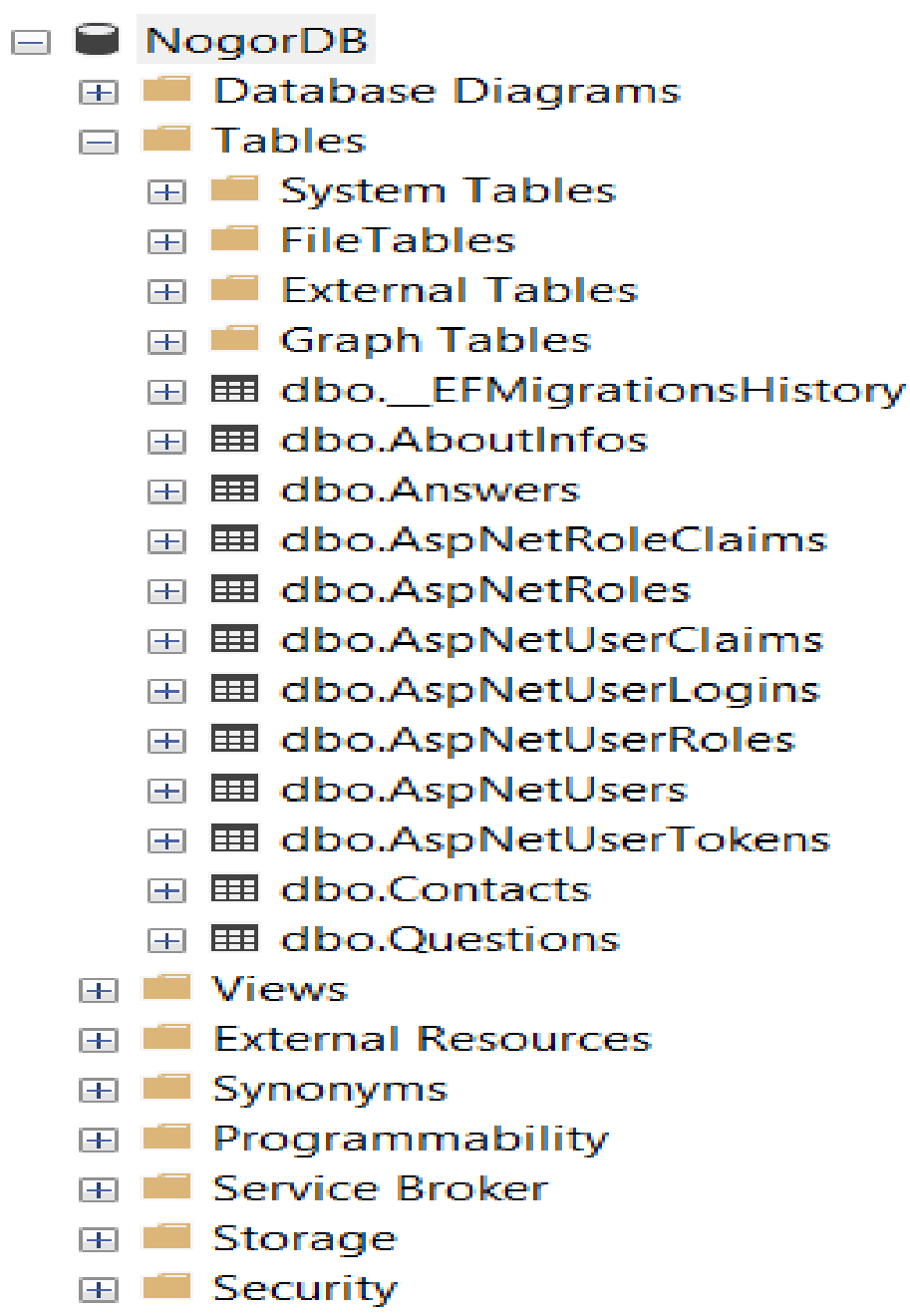
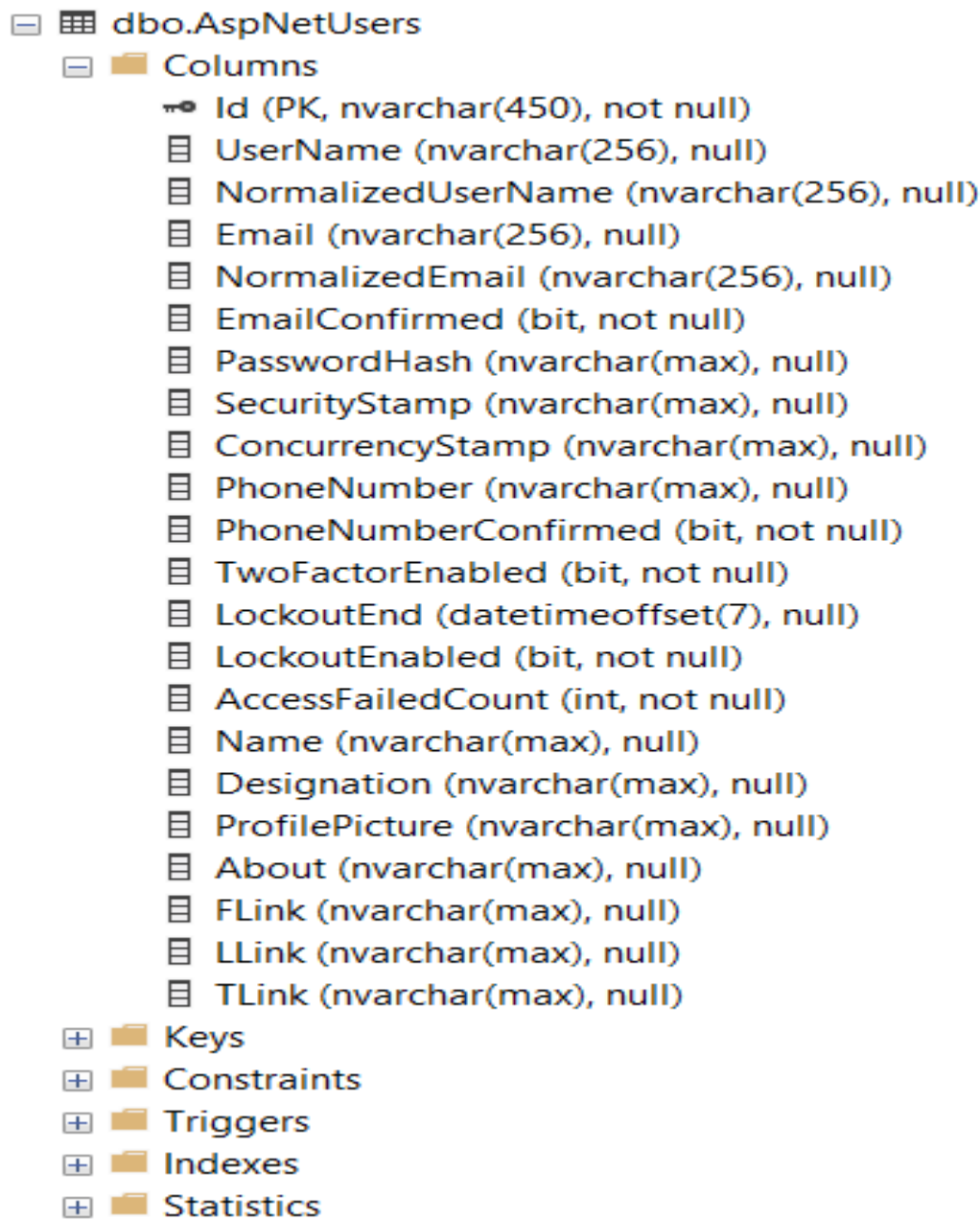


Figure 4.1 Table list

4.2 AspNetUser Table

Since this application uses ASP .Net Core, Entity Framework Core so we use ASP .Net Identity for Authentication. We also use Authorization to define the account's role. All of our Administration and Divisional Officers account are stored here.



dbo.AspNetUsers
Columns
Id (PK, nvarchar(450), not null)
UserName (nvarchar(256), null)
NormalizedUserName (nvarchar(256), null)
Email (nvarchar(256), null)
NormalizedEmail (nvarchar(256), null)
EmailConfirmed (bit, not null)
PasswordHash (nvarchar(max), null)
SecurityStamp (nvarchar(max), null)
ConcurrencyStamp (nvarchar(max), null)
PhoneNumber (nvarchar(max), null)
PhoneNumberConfirmed (bit, not null)
TwoFactorEnabled (bit, not null)
LockoutEnd (datetimeoffset(7), null)
LockoutEnabled (bit, not null)
AccessFailedCount (int, not null)
Name (nvarchar(max), null)
Designation (nvarchar(max), null)
ProfilePicture (nvarchar(max), null)
About (nvarchar(max), null)
FLink (nvarchar(max), null)
LLink (nvarchar(max), null)
TLink (nvarchar(max), null)
Keys
Constraints
Triggers
Indexes
Statistics

Figure 4.2 AspNetUser table

4.3 AspNetRoles Table

AspNetRoles holds all roles such as Administrators or divisions in which we assign users later.

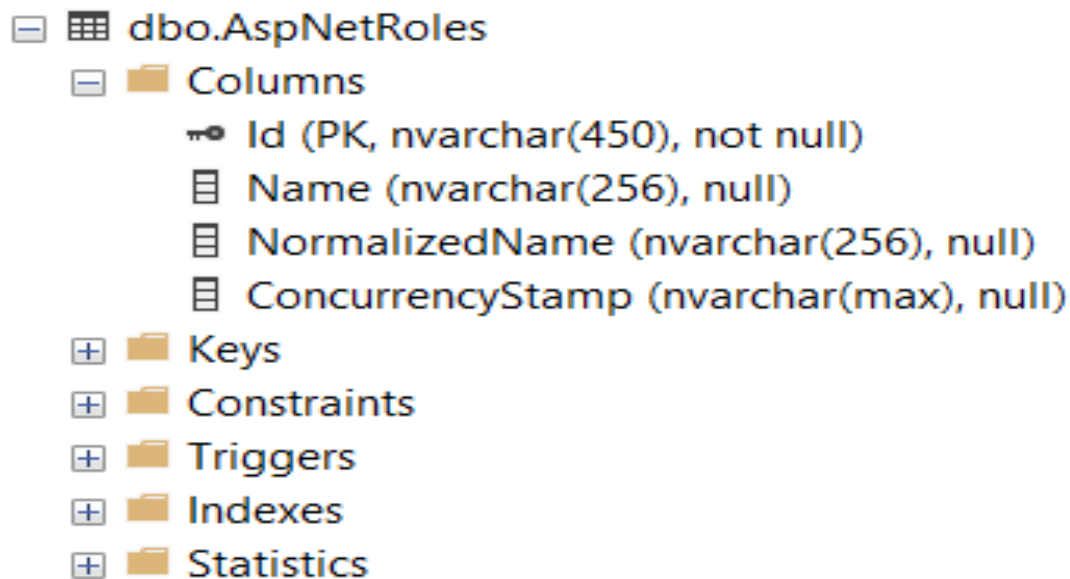


Figure 4.3 AspNetRoles table

4.4 AspNetUserRoles Table

AspNetUserRoles holds the record of the assigned role to the user. One user can be assigned to multiple roles.

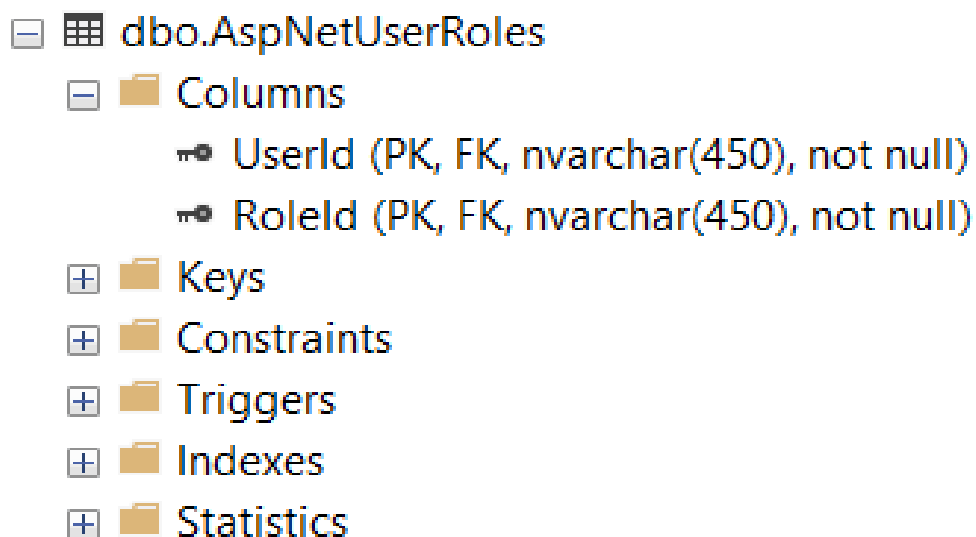


Figure 4.4 AspNetUserRoles table

4.5 Questions Table

All submitted complaints will be stored in this table.

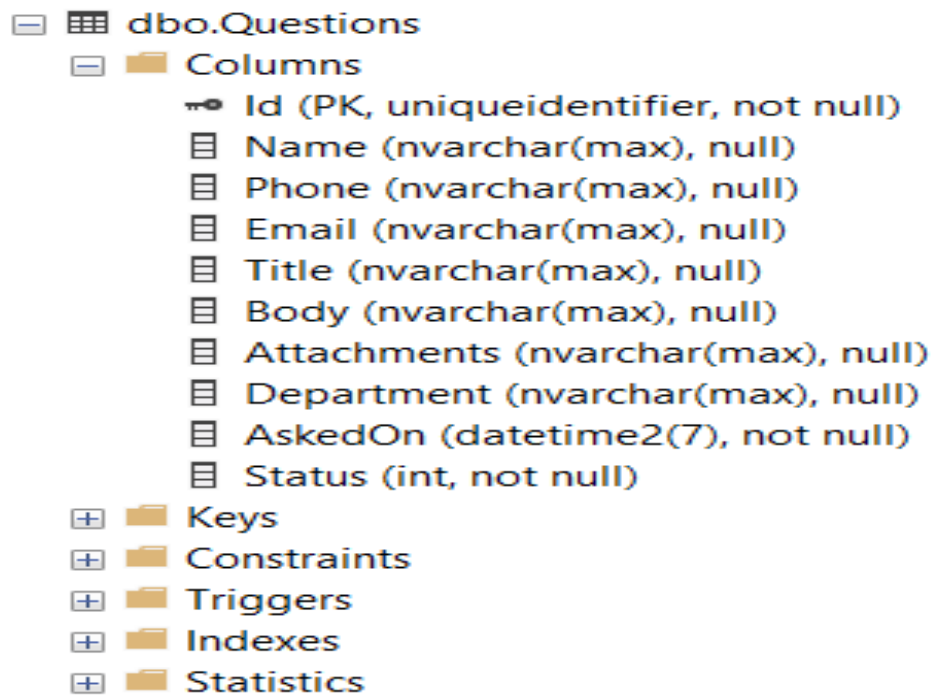


Figure 4.5 Question table

4.6 Answers Table

All responses against complaints will store here.

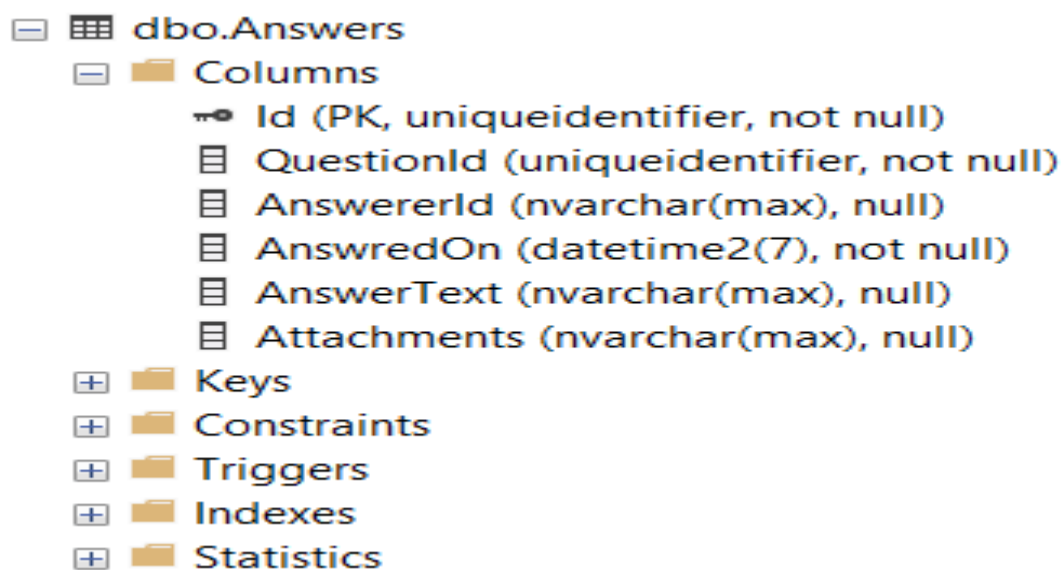


Figure 4.6 Answers table

4.7 AboutInfos Table

The information on the application is stored here. Such as address, phone, email, application logo, map location, description.

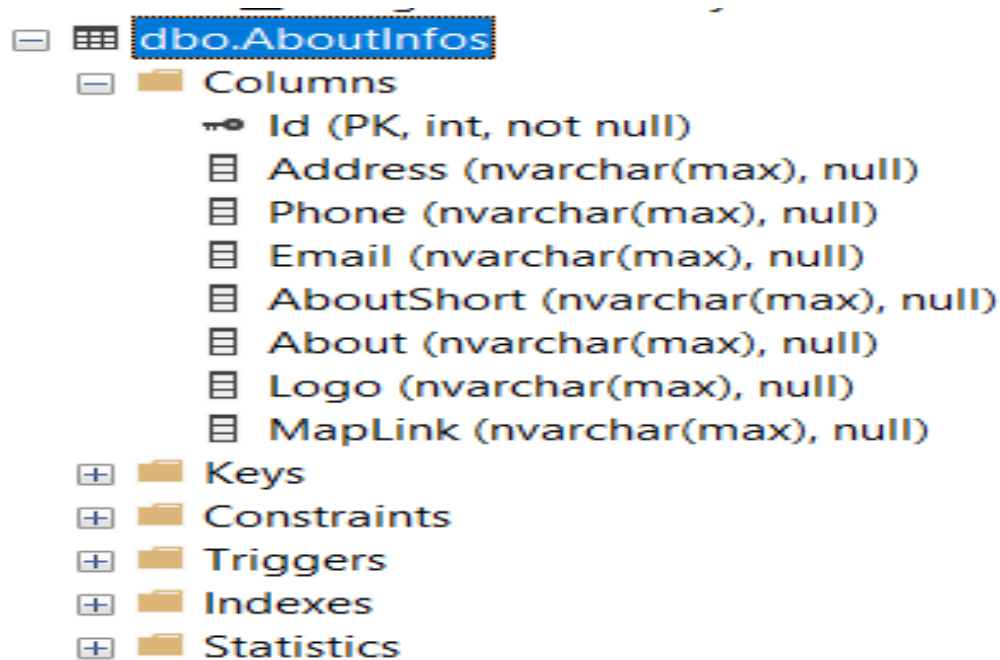


Figure 4.7 AboutInfos table

4.8 Contacts Table

The messages which have been sent from the application contact form will store here.

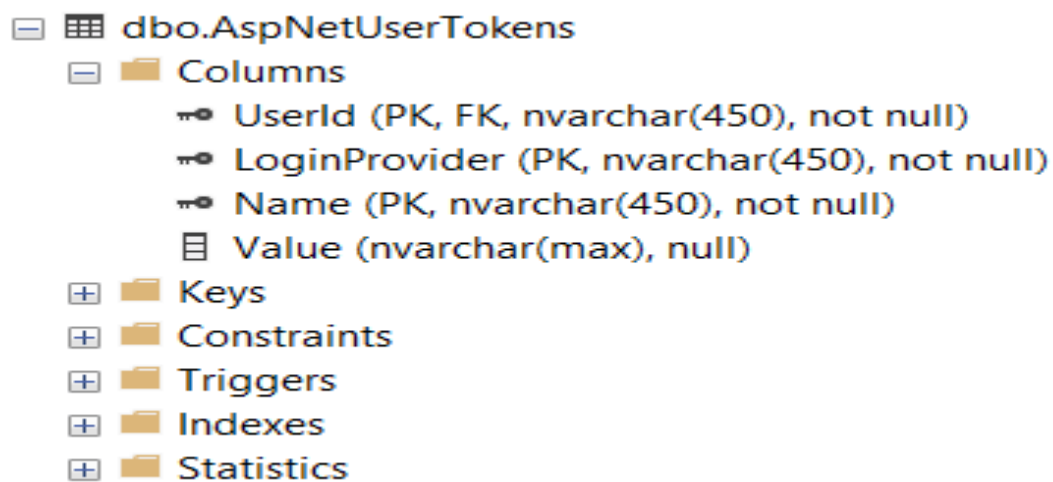


Figure 4.8 Contacts table

Chapter 5

Implementation Result

5.1 Index Page

The index page is an action result from HomeController where we have a method type of IActionResult and this is the view. On the home page, we have a simple welcome message and all recent report is being rendered underneath it. On top of that, we have a navigation menu and search box.

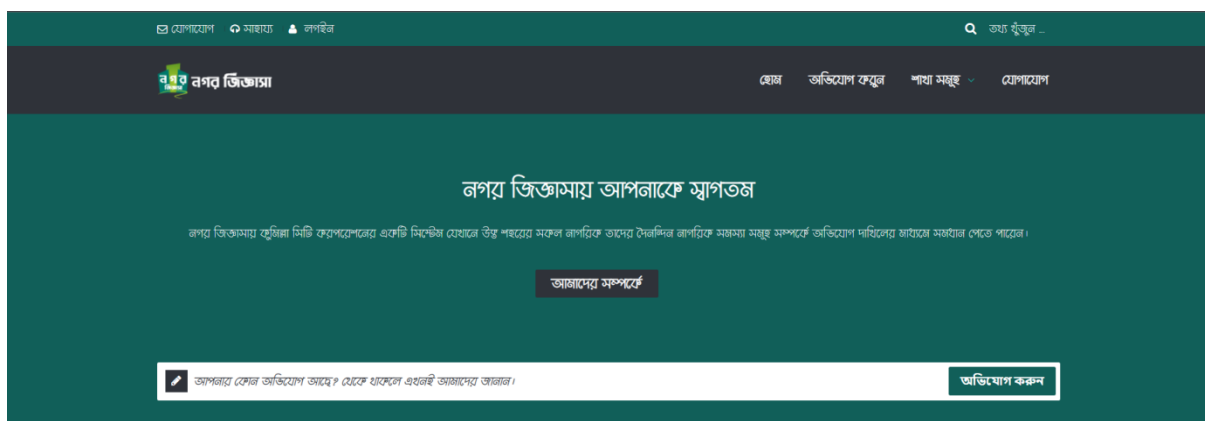


Figure 5.1.1 Welcome e section

After that the report section start. Here all recently approved reports will be shown. On the left side of the section, there is a sidebar, where counted number of reports and responses are shown. Under that last two reports will display. This sidebar is common for every view (page).t

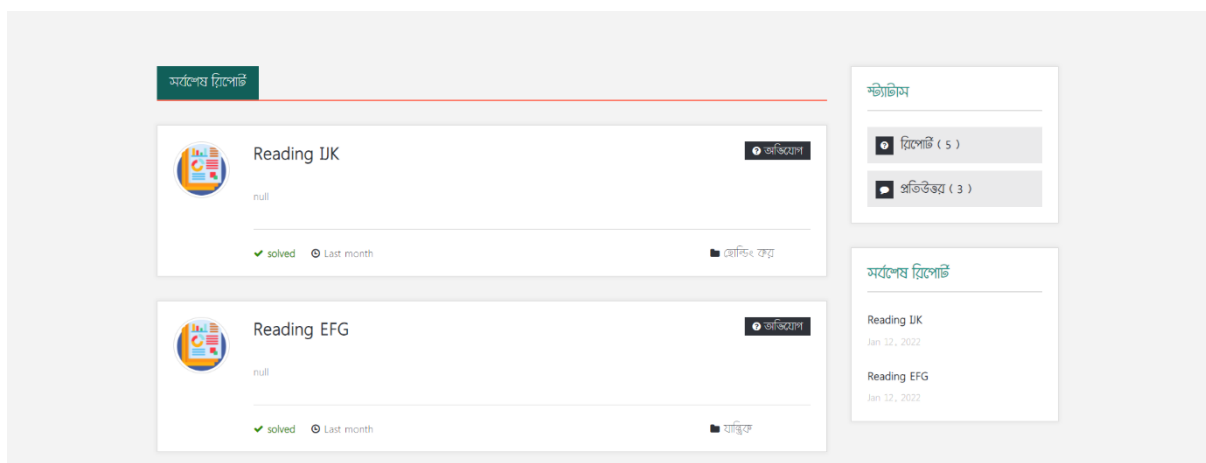


Figure 5.1.2 Report section

At the end of the report section, we have a “load more” button. By clicking these 3 more reports will render at the top of the button if exist on the database. After that, the footer section began. In the footer, there is some contact information and navigation links.

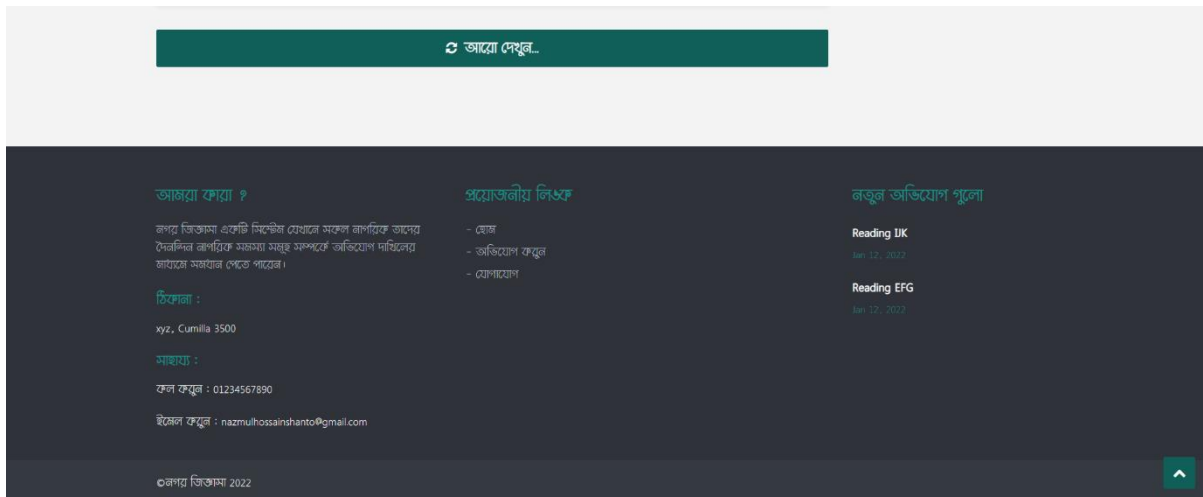


Figure 5.1.3 Footer section

5.2 View Complain Page

This page is another controller action page. QuestionController is the controller and IActionResultViewReport is the method is responsible for this view. The complaint is queried by Id (type Guid) and displayed here.

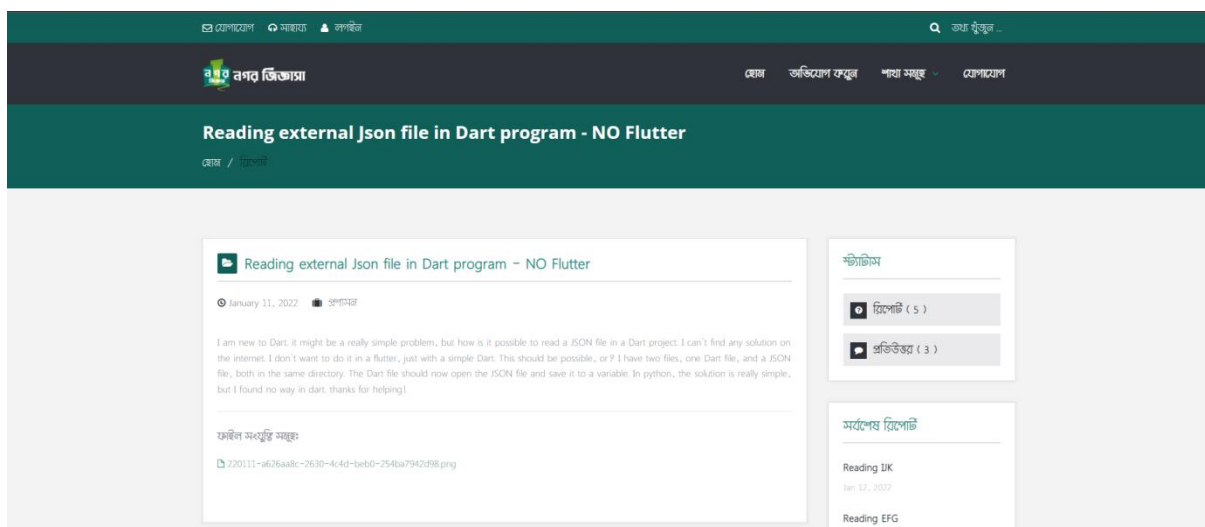


Figure 5.2.1 View complain page

Underneath the report, there is another section which is the response section. All responses will be displayed here.

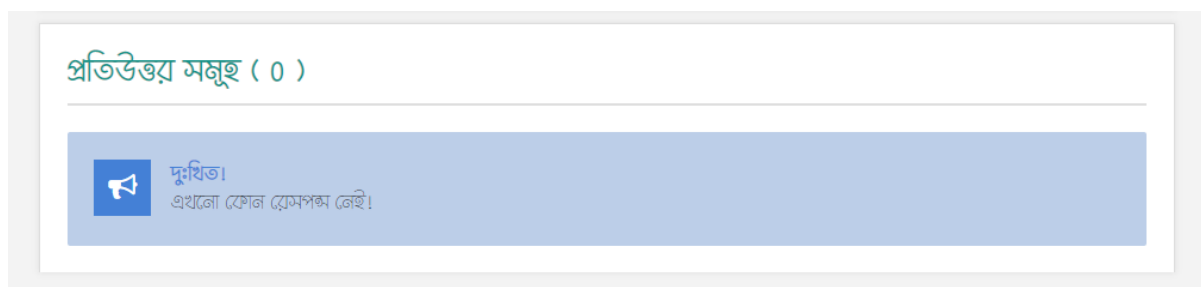


Figure 5.2.2 Response section

When an administrator or divisional office will log in there will appear another section to respond to the complaint. This section will normally be hidden from the end-user until he/she is not logged in to any account.

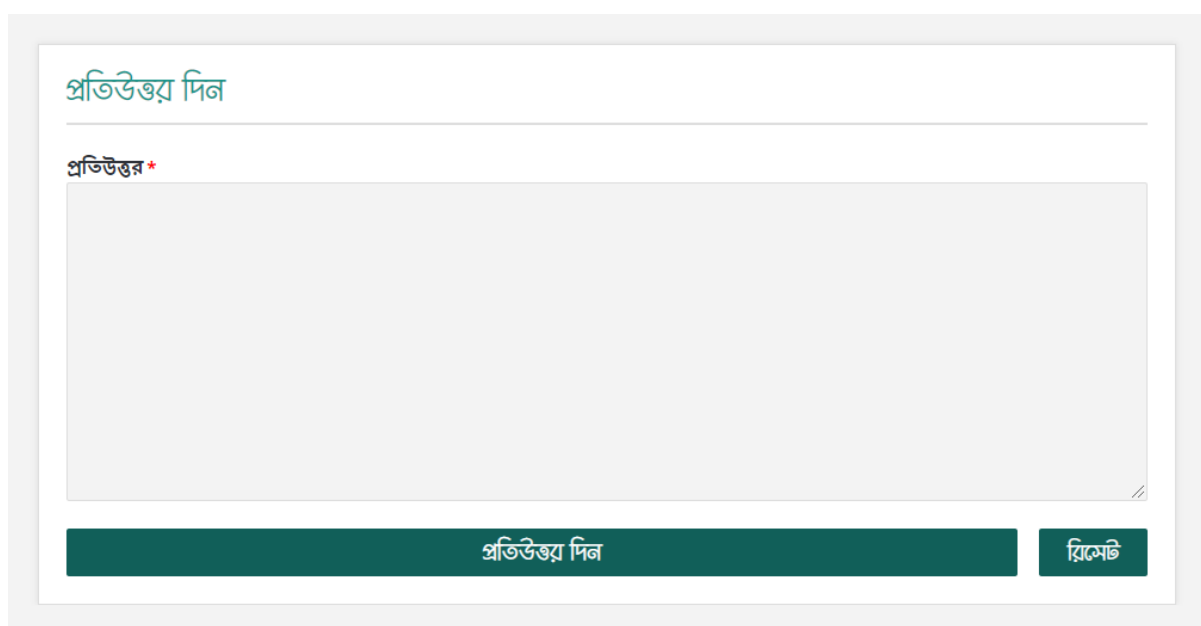


Figure 5.2.3 Respond to the complaint

5.3 Complaint by Division Page

In this ActionResult page, the complaint will be categorized by division which was selected by the complainant. By hovering the mouse cursor on “Divisions” on the navigation menu the list of divisions will appear. By clicking those links user will land on this page.

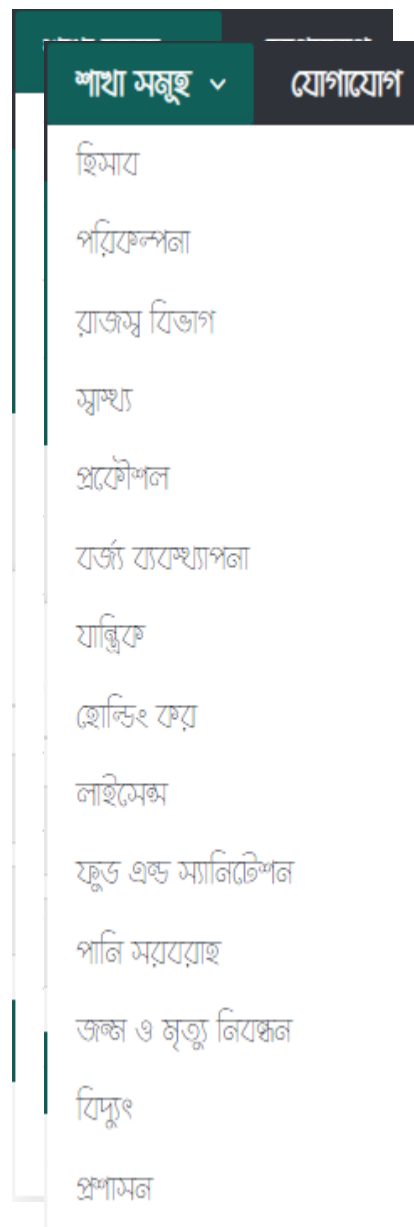


Figure 5.3.1 Hovered menu

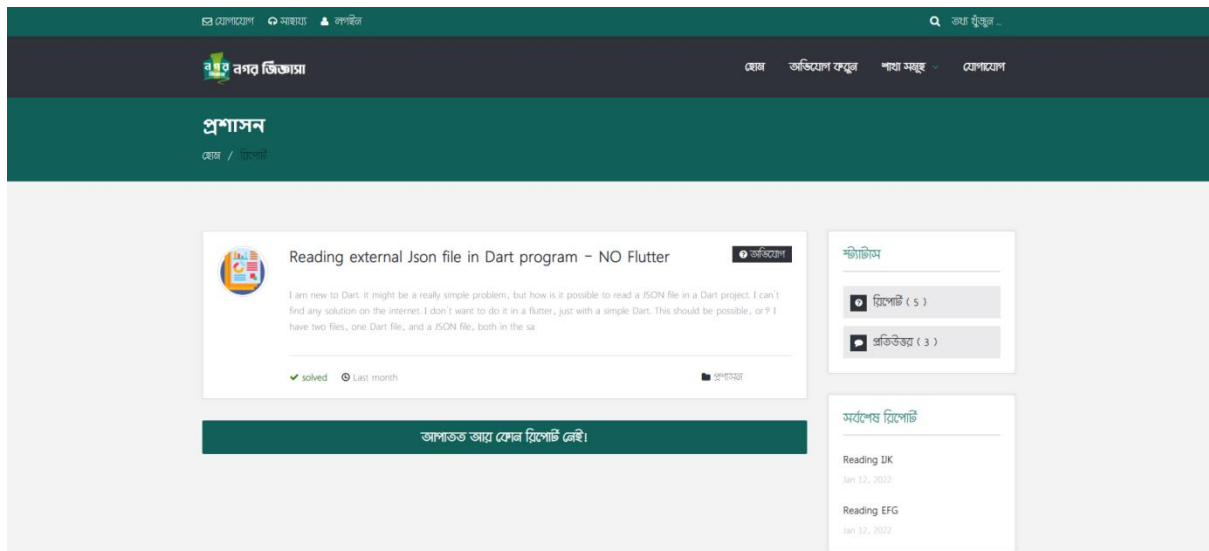


Figure 5.3.2 Complain by division

5.4 Submit Complain Page

From here users can submit complaints. Individual division can be selected while submitting.

অভিযোগ দাখিল করুন

হোম / অভিযোগ

অভিযোগ দাখিল করুন

ব্যবহারে আপনাকে অভিযোগ দাখিল করতে সক্ষম করার লক্ষ্যে। আপনার যেকোনো অভিযোগ দাখিল করে আপনি আমাদের কাছে আপনার অভিযোগ জানাতে পারবেন।

অভিযোগের শিরোনাম*

আপনার নাম*

আপনার যোগাযোগের নম্বর*

আপনার ইমেল*

বিভাগ*

ফাইল সংযোগ

বিবরণ

অভিযোগের শিরোনাম*

আপনার নাম*

আপনার যোগাযোগের নম্বর*

আপনার ইমেল*

বিভাগ*

ফাইল সংযোগ

বিবরণ

অভিযোগের শিরোনাম*

আপনার নাম*

আপনার যোগাযোগের নম্বর*

আপনার ইমেল*

বিভাগ*

ফাইল সংযোগ

বিবরণ

অভিযোগ দাখিল করুন

অভিযোগ দাখিল করুন

অভিযোগ দাখিল করুন

অভিযোগ দাখিল করুন

অভিযোগ দাখিল করুন

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অভিযোগ দাখিল করুন

অভিযোগ দাখিল করুন

Figure 5.4.1 Submit complaint

5.5 Contact Page

This page is an ActionResult from HomeController. Here users can communicate with authority by sending messages. An embedded map is also displayed here. About information is displayed beside the contact form.



5.6 Login Page

The login page is an IActionResult form AccountController.

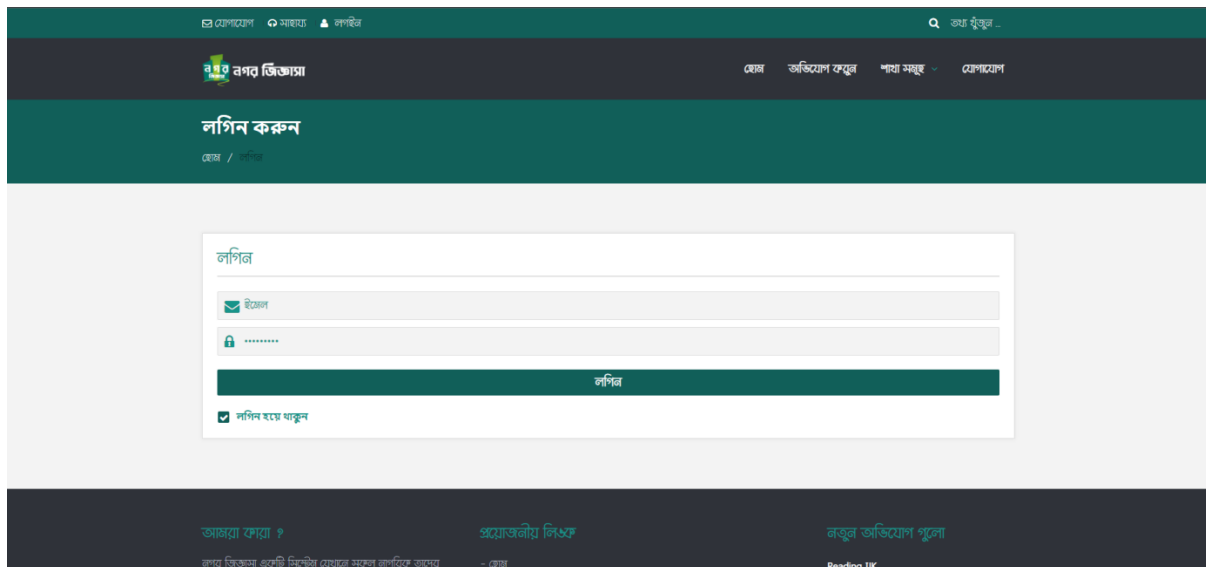


Figure 5.6.1 Login page

We also have a slider login menu at the header of the application.

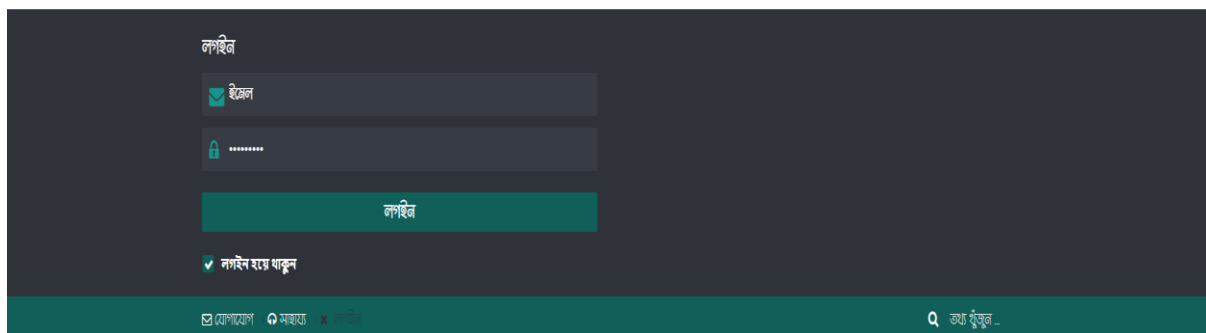


Figure 5.6.2 Slider login

After login few more options will appear in the top navigation.



Figure 5.6.3 Post login options

5.7 Accounts Page

From here a new account can be created, update, or can be deleted. This action on available form those are in Administration role.

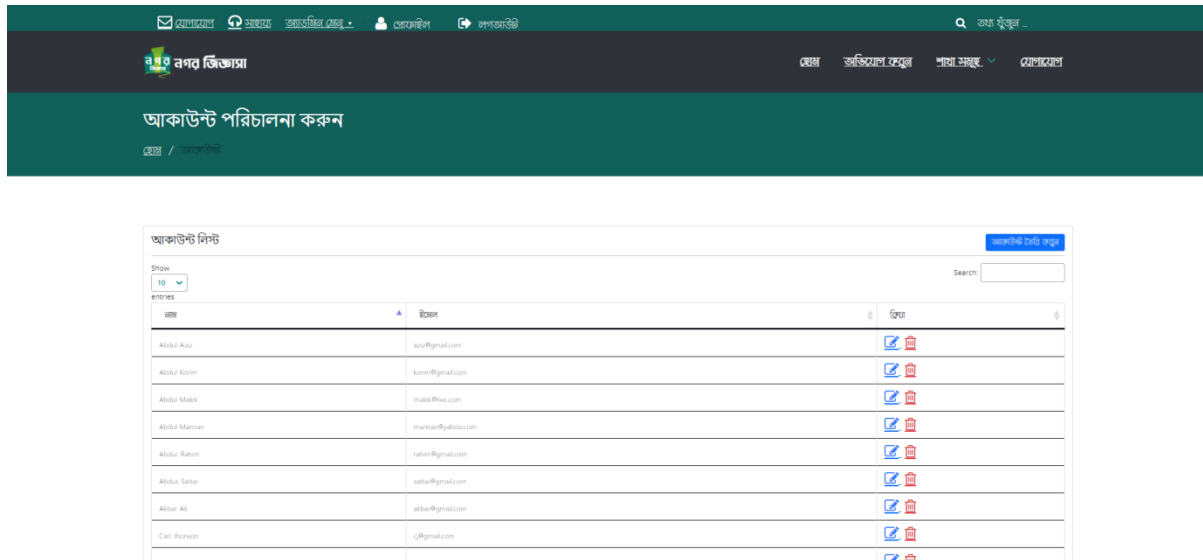


Figure 5.7.1 Account page

By clicking add account button a modal will appear. From there a new account can be created. Edit and delete can be done as well.

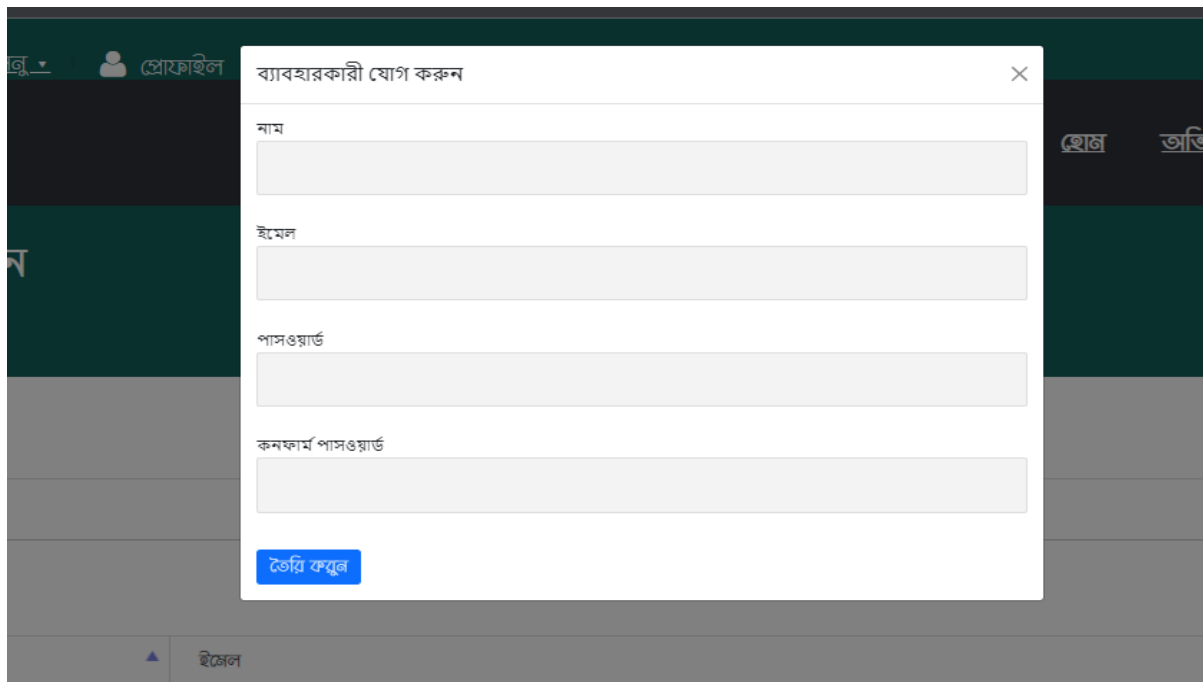


Figure 5.7.2 Add account modal

5.8 Division Page

From this page, division can be managed. This division will be assigned to users to handle the complaint department-wise.



The screenshot shows a web interface for managing divisions. At the top, there's a header "বিভাগ সমূহ" (Divisions) and a button "নতুন বিভাগ যোগ করুন" (Add New Division). Below the header, there's a search bar and a "Show" dropdown set to "10". The main content is a table with 15 entries. The first entry is "Administrator". The other 14 entries are: "অফিস ও ফিল্ড অফিসার", "পরিদেপ্তার", "পরিদেপ্তার", "প্রদেপ্তার", "প্রদেপ্তার", "ফিল্ড এন্ড মনিটরিং", "ফিল্ড এন্ড মনিটরিং", "ফিল্ড এন্ড মনিটরিং", "ফিল্ড এন্ড মনিটরিং", "ফিল্ড এন্ড মনিটরিং", "ফিল্ড এন্ড মনিটরিং", "ফিল্ড এন্ড মনিটরিং", "ফিল্ড এন্ড মনিটরিং", "ফিল্ড এন্ড মনিটরিং". Each row has three action icons: a plus sign, a checkmark, and a trash can. At the bottom, there's a pagination bar showing "Showing 1 to 10 of 15 entries" and buttons for "Previous", "1", "2", and "Next".

বিভাগের নাম	ক্রিয়াকর্ম
Administrator	+ ✓ ✖
অফিস ও ফিল্ড অফিসার	+ ✓ ✖
পরিদেপ্তার	+ ✓ ✖
পরিদেপ্তার	+ ✓ ✖
প্রদেপ্তার	+ ✓ ✖
প্রদেপ্তার	+ ✓ ✖
ফিল্ড এন্ড মনিটরিং	+ ✓ ✖
ফিল্ড এন্ড মনিটরিং	+ ✓ ✖
ফিল্ড এন্ড মনিটরিং	+ ✓ ✖
ফিল্ড এন্ড মনিটরিং	+ ✓ ✖
ফিল্ড এন্ড মনিটরিং	+ ✓ ✖
ফিল্ড এন্ড মনিটরিং	+ ✓ ✖
ফিল্ড এন্ড মনিটরিং	+ ✓ ✖
ফিল্ড এন্ড মনিটরিং	+ ✓ ✖
ফিল্ড এন্ড মনিটরিং	+ ✓ ✖

Figure 5.8.1 Division page

5.9 Assign Division to Accounts

Form here division will be assigned to one or multiple accounts.

বিভাগ সম্পাদন করুন

হোম / ব্যবস্থাপনা / বিভাগ / বিভাগ সম্পাদন করুন



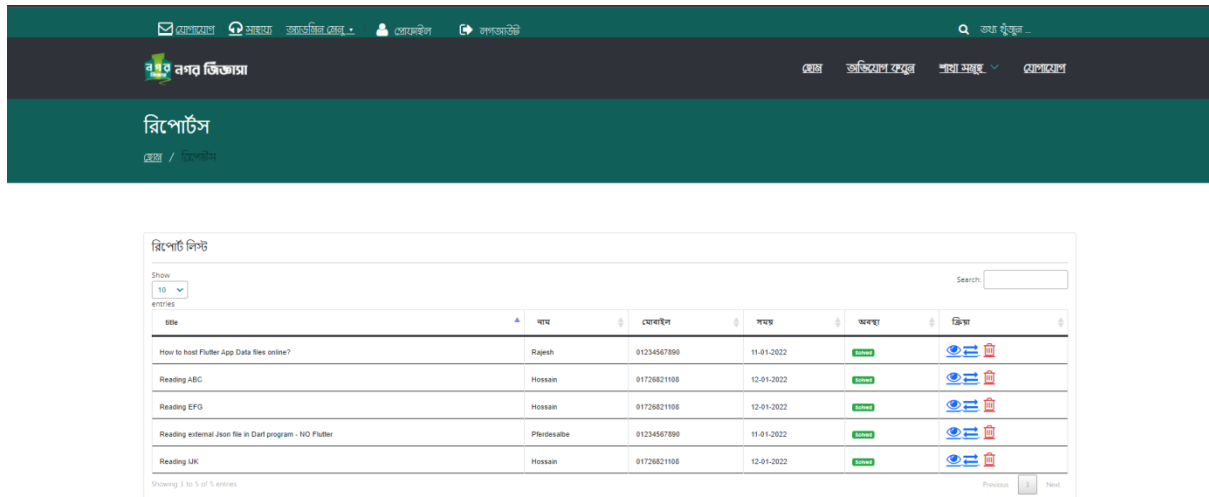
The screenshot shows a web interface for assigning a division to an account. At the top, there's a header "বিভাগের একাউন্ট সমূহ" (Accounts of Division) and a button "একটি একাউন্ট নির্বাচন করুন" (Select one account). Below the header, there's a search bar and a "Show" dropdown set to "10". The main content is a table with 1 entry. The entry is: "1", "koren@gmail.com". At the bottom, there's a pagination bar showing "Showing 1 to 1 of 1 entries" and buttons for "Previous", "1", and "Next".

ক্রম	ইমেইল
1	koren@gmail.com

Figure 5.9.1 Assign division to account

5.10 All Complaint Page

The administrator can view all the complaints from here. The administrator can approve complaints, or delete complaints.


















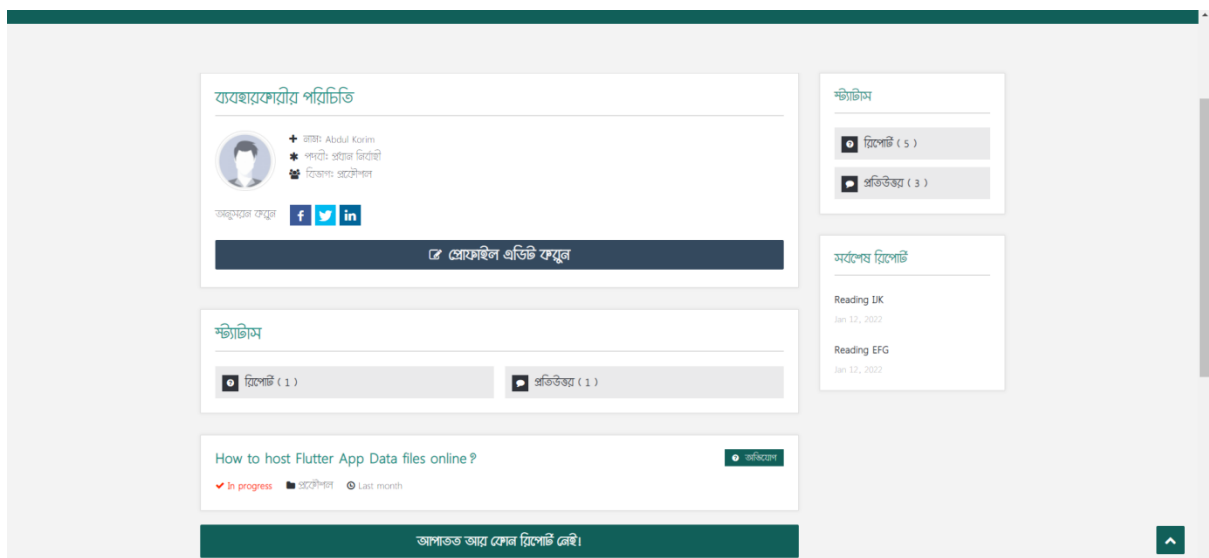
Title	নাম	মোবাইল	তারিখ	অবস্থা	ক্রিয়া
How to host Flutter App Data files online?	Rajesh	01234567890	11-01-2022	In progress	  
Reading ABC	Hossain	01729821108	12-01-2022	In progress	  
Reading EFG	Hossain	01729821108	12-01-2022	In progress	  
Reading external Json file in Dart program - NO Flutter	Plondesalbe	01234567890	11-01-2022	In progress	  
Reading UK	Hossain	01729821108	12-01-2022	In progress	  




Figure 5.10.1 All Complaint

The divisional officer will have access only to their department complaints. They can check those from their profile.




ব্যবহার্যযোগ্য পরিচিতি

আমি: Abdul Korim
পদবী: প্রোগ্রামার
বিভাগ: প্রস্ট্রাকশন

অবস্থা:   

প্রোগ্রামিং এডিট ফর্ম


স্ট্যাটাস


রিপোর্ট (1)  প্রতিক্রিয়া (1) 

মর্মেসন রিপোর্ট

Reading UK
Jan 12, 2022

Reading EFG
Jan 12, 2022

How to host Flutter App Data files online? 

In progress  প্রস্ট্রাকশন  Last month

আপাতত আর কোন রিপোর্ট নেই।

Figure 5.10.2 Complaints view Divisional officers

5.11 Messages Page

From here administration can check all messages sent by contact form.

The screenshot shows the 'বার্তা সমূহ' (Messages) page. At the top, there's a navigation bar with icons for messages, users, reports, and settings. Below the navigation bar, the page title 'বার্তা সমূহ' is displayed. A search bar is located at the top right. The main content area shows a table with columns: 'নাম' (Name), 'ইমেল' (Email), 'মোবাইল' (Mobile), 'সময়' (Time), and 'ক্রিয়া' (Action). The table is currently empty, displaying 'No Data'. Below the table, it says 'Showing 0 to 0 of 0 entries'. On the right side of the page, there are three sections: 'আমাদের কল্যাণ' (Our Welfare), 'প্রয়োজনীয় লিংক' (Required Links), and 'নতুন অভিযোগ গুলো' (New Complaints). The 'আমাদের কল্যাণ' section contains text about the system's purpose. The 'প্রয়োজনীয় লিংক' section lists links for 'হোম', 'অভিযোগ ফর্ম', and 'যোগাযোগ'. The 'নতুন অভিযোগ গুলো' section lists 'Reading IJK' and 'Reading EFG' with dates.

Figure 5.11.1 Messages page

5.12 Application Information Page

Form here all application information can be managed.

The screenshot shows the 'অন্যান্য তথ্য' (Other Information) page. The page has a form with several fields: 'ঠিকানা' (Address) with value 'xyz, Cumilla 3500', 'ইমেইল' (Email) with value 'nazmulhossainshanto@gmail.com', 'ফোন' (Phone) with value '01234567890', and 'ম্যাপ লিংক' (Map Link) with value 'https://www.google.com/maps/embed?pb=!1m18!1m12!1m3!1'. There is a 'Select file' button and a 'Browse' button. Below the form, there are two sections: 'আপন সম্পর্কে সংক্ষেপে' (Briefly about you) and 'আপন সম্পর্কে বিস্তারিত' (Detailed about you). The 'আপন সম্পর্কে সংক্ষেপে' section contains text about the system's purpose. The 'আপন সম্পর্কে বিস্তারিত' section contains text about the system's purpose. At the bottom of the page, there is a 'আপন সম্পর্কে ফর্ম' (About you form) button. On the right side of the page, there are three sections: 'স্ট্যাটিস্টিক' (Statistics), 'মতামত' (Opinion), and 'মতামত' (Opinion). The 'স্ট্যাটিস্টিক' section shows 'রিপোর্ট (5)' and 'প্রতিবেদন (3)'. The 'মতামত' section shows 'Reading IJK' and 'Reading EFG' with dates.

Figure 5.12.1 Application information

Chapter 6

Appendix

6.1 Code Listings

Application Configuration Part

```
1 using Microsoft.AspNetCore.Identity;
2 using Microsoft.EntityFrameworkCore;
3 using NogorApp.Data.Interfaces;
4 using NogorApp.Data.Repositories;
5 using NogorApp.Models;
6
7 var builder = WebApplication.CreateBuilder(args);
8
9 #region Services
10
11 builder.Services.AddDbContext<ApplicationDbContext>(options => options.UseSqlServer(builder.Configuration.GetConnectionString("DefaultConnection")));
12
13 builder.Services.AddIdentity<ApplicationUser, IdentityRole>().AddEntityFrameworkStores<ApplicationDbContext>();
14
15 builder.Services.AddTransient<IAccounts, Accounts>();
16
17 builder.Services.AddTransient<IQuestion, QuestionRepository>();
18
19 // Add services to the container.
20 builder.Services.AddRazorPages();
21
22
23 #endregion
24
25 var app = builder.Build();
26
27 #region ConfigureApp
28
29 // Configure the HTTP request pipeline.
30 if (app.Environment.IsDevelopment())
31 {
32     app.UseDeveloperExceptionPage();
33 }
34 else
35 {
36     app.UseExceptionHandler("/Error");
37     // The default HSTS value is 30 days. You may want to change this for production scenarios, see https://aka.ms/aspnetcore-hsts.
38     app.UseHsts();
39 }
40
41 app.UseHttpsRedirection();
42 app.UseStaticFiles();
43
44 app.UseRouting();
45
46 app.UseAuthentication();
47 app.UseAuthorization();
48
49 app.UseEndpoints(endpoints =>
50 {
51     endpoints.MapControllerRoute(
52         name: "default",
53         pattern: "{controller=Home}/{action=Index}/{id?}");
54     endpoints.MapRazorPages();
55 });
56
57 #endregion
58
59 app.Run();
```

6.2 Software Repository

The complete source code, documentation, and related files for the software developed in this project are available in the public software repository hosted on GitHub.

Repository Name: NogorApp

Repository Link: <https://github.com/Jahid-Riaad/NogorApp>

Access Instructions:

To access the software repository and view the source code, documentation, and other project-related files, follow these steps:

1. Open your web browser and navigate to the repository URL:
<https://github.com/Jahid-Riaad/NogorApp>.
2. If you have a GitHub account, log in to your account to gain access to the repository. If you don't have an account, you can create one for free on the GitHub website.
3. Once you are logged in and have access to the repository, you can browse through the files, download the source code, and view the commit history.

Please note that the repository is currently publicly accessible, it may change its visibility or permissions at any time-based onward situation.

Chapter 7

Conclusions and Limitations

7.1 Suggestion for Feature Work

Although the intended simplicity is beneficial to users, several features could be added to this project in the future to make it more efficient and completely functional. Like, another party between Administration and Divisional office can be added who will handle all complaint-related issues currently maintained by administration. Attachment submitted by the user can be handled more gently. View attached attachment on input filed change while submitting a complaint. Further communication with the complainant currently is manual. It can be set as an automatic short message service (SMS) or by sending an email.

7.2 Conclusions

The project “Online Complaint System” is developed to replace the traditional complaint system and make life more dynamic. The current system used by City corporations is very time-consuming and it often failed to reach the desired department. Sometimes people don’t report to avoid official hassle or leak of times. This system is intended to build overcome those issues and boost up the process of solving the problems.

7.3 Limitations

As motioned before, further communication with the complainant currently is manual. This may not be a huge problem but it is always good to have an automatic system as a helping hand.

References

1. [C# Documentation - Microsoft](#)
2. [ASP.NET documentation | Microsoft Docs](#)
3. [Language-Integrated Query \(LINQ\) \(C#\) | Microsoft Docs](#)