IVAC APPOINTMENT SYSTEM

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

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APPROVAL

This Project titled **"IVAC APPOINTMENT SYSTEM**", submitted by Shuvo Mukherjee, Shardul Mahmud, and Md. Zamiul 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 in 2018.

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DECLARATION

We hereby declare that this project has been done by us under the supervision of **Rubaiya Hafiz, Lecturer, Department of CSE** Daffodil International University. I also declare that neither this project nor any part of this project has been submitted elsewhere for the award of any degree or diploma.

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ABSTRACT

"IVAC APPOINTMENT SYSTEM" is an automated Indian visa appointment system that is a web-based application with support of an Android mobile app. This application helps a user to get e-token for visa appointment in a hassle free and cost-saving way.

IVAC Appointment System has an automated working process that is very user-friendly and effective to get the result. This system can help to get one or multiple visa appointment date file in a short time. The system can be used for the personal or commercial purpose. This system will help users to safe from frauds and criminal persons of this sector. We tried our best to make this system easy and simple as it can be possible.

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CHAPTER 1
INTRODUCTION

1.1 Introduction

In every month less 2 lacs people go to India for many purposes. As to get Indian visa Bangladeshis have to apply for a visa first. Indian visa appoint system is totally online based. One has to apply on online by fill upping a form with many given requirements. Which is a lengthy and complicated process. Most of our general people of our country don't understand the process very well. And also a huge number of people are not educated enough to understand all of this digitalized system. So to get the appointment they usually depend on some class or types of people whose do E-Token business. Many of them are dishonest and deal breakers. Sometimes they found as a fraud. So by giving attention to this problem we developed this system to solve the problem. Our build "IVAC APPOINTMENT SYSTEM" will change the whole situation. As we have developed it in a very user-friendly concept. Anyone can get registered easily in our system and give some information that is very less than the original Indian visa application website form. And without going to other 3rd parties they can get their visa appointment date in a very easy process. In this way, their time and money are saving and they are being saved from money hungry dishonest people out there.

1.2 Motivation of Work

When we look at the whole situation, we can see that many people suffer every day for getting the appointment from Indian visa application site. They spend a lot of money to get rid of suffering, but they couldn't. As this appointment date opens for a few minutes in a day and finishes in a flash. The all appointment date gone in just a moment. So we had to develop the whole system in time generous way, so that it can catch the maximum result by this short time.

1.3 Objectives

- Users can operate it via computer/smartphones/tabs with the help of internet.
- The user has to install our Android app on their smartphone.
- Users can add information in the registration form.
- After adding information, visitors profile automatically created.
- The user can submit their details in our website given form.
- The user can see the current status of their submitted application.
- Admin will control the users access through in the system and grad them permissions
- One user can submit one or many application forms at a time by using permission from the admin.

1.4 Expected Outcome

This project is to develop a system that will help people to get an appointment in a hassle-free way. In this system, the user can apply through our site for visa appointment date. In this system, only users can access their profile. Admin can delete their profiles for security and terms and condition proposes if any occurrence happens. The access and permission will be limited by admitting as per user usage policy. This system will be shown files status in the user dashboard. So they can be easily informed about their file status and accepted date. An email will be generated and appointment file will be sent automatically through this email to the specific user. Admin can control the databases as it requires.

1.5 Report Layout

Chapter 1: Introduction

In this chapter, we have discussed the motivation, objectives and the expected outcome of the project. Later followed by the report layout

Chapter 2: Background

We discuss the background circumstances of our project. We also talk about the related work, comparison to other candidate systems, the scope of the problem and challenges of the project.

Chapter 3: Requirement Specification

This chapter is all about the requirements like business process modeling, the requirement collection and analysis, the use case model of the project and their description, the logical relational database model, and the design requirements.

Chapter 4: Design Specification

In this chapter, we discussed all the designs of the project, front-end design, back-end design, interaction design and UX and the implementation requirements.

Chapter 5: Implementation and Testing

This chapter contains the implementation of the database, front-end designs, interactions and the test results of the project.

Chapter 6: Conclusion and Future Scope

We discussed the conclusion and the scope for further developments.

CHAPTER 2
BACKGROUND

2.1 Introduction

"IVAC APPOINTMENT SYSTEM" is very well-designed web-based application. In this system, we can feature the necessary information about the application and appointment date. The system is opened for personal users and for business purpose. This project will save money and time as well as it provides a hassle-free service to get an appointment.

2.2 Related Work

There is no related work in this sector. We are the first who has a concern about this problem and standing with a solution. Other visa related site basically works with visa providing and renewal issues. But our vision is to get a visa appointment for its needing persons.

2.3 Comparative Studies

Our implemented software is developed on the basis of Indian visa application website. We have studies a lot throughout developing this project. We have studies each and every requirement and system process of that site to work our system in an efficient and proper way.

2.4 Scope of the problem

- System loss during redirecting OTP from the mobile application.
- If provided data is incorrect system will not work properly.
- Android application requires internet access permission.
- Internal process error.

2.5 Challenges

- Configuring and integrating the Laravel framework.
- Template connecting the Database.
- Cross domain posting data access problem.
- Making the design beautiful and user-friendly.
- Captcha solving using image processing library.
- Rapidly changing of verification method inside the Indian visa application website.

CHAPTER 3
REQUIREMENT SPECIFICATION

3.1 Introduction

"**IVAC Appointment System**" is a web application that provides people the information about they are searching and also provides them a way to order their fool online from restaurants. As a website, our project needs some hardware and software resource and support to run efficiently. So in this chapter of our report, we will go to discuss the requirement specification for our project.

3.2 General System Requirement of "IVAC Appointment System"

There are some minimum requirements for both hardware and software to build our website. These requirements have to fulfill in order to run our project. A general list of hardware and software component is given below to get an idea of what we used to build our project-

- Hardware:
  - Computer or Laptop
  - Server

- Software:
  - Windows Operating System (Windows 10).
  - PhpStrom jateBrains.
  - Xampp Control Panel.
  - Sublime Text 3.
  - Browser (Firefox, Chrome)

- Programming Language and Framework:
  - Html
  - CSS
  - JavaScript
  - MySQL
  - PHP
  - Bootstrap 4
  - Laravel 5

3.3 Use Case Model

The following use case model diagram shows that how many users are going to use the system and also give an idea about the relation between these users in the system. Here the users are Admin, visitors and restaurant owners and their relationship with the system.

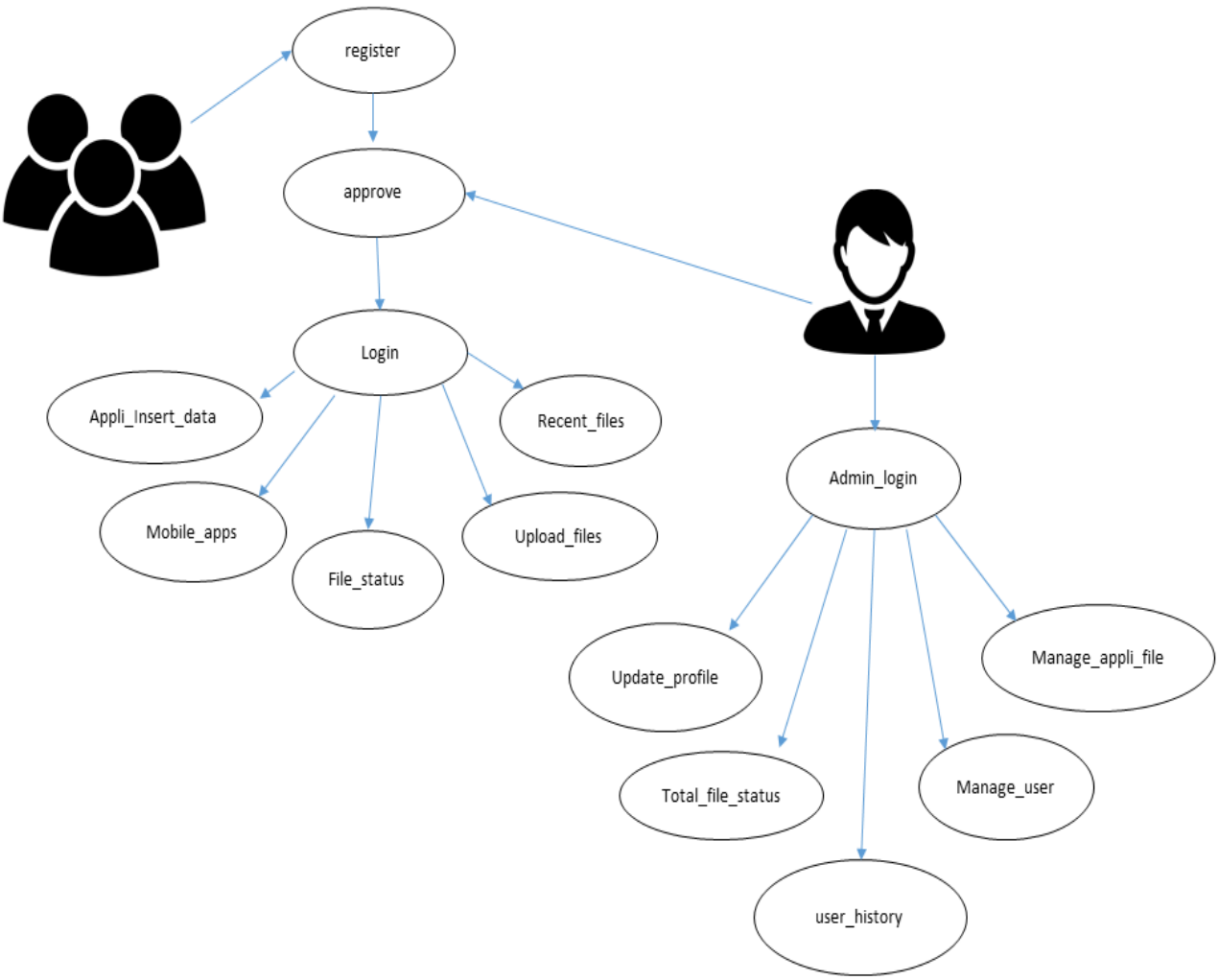

Figure 3.1: Use Case Model of the system

3.4 Use Case Description

The description of the use case model of 3.3 (Figure 3.3.1) is given below. Every attribute will be discussing with a table containing “Primary Actor”, “Secondary Actor”, “Pre-condition”,” Scenario” and “Post-condition”. So that it could be understandable by all.

Table 3.4.1 Use case description of registration

Use case	**Registration**
Primary Actor	Admin, User
Secondary Actor	Null
Pre-condition	Null
Scenario	• Enter Name • Enter Username • Enter Email • Enter Password
Post-condition	Register successfully or failed

Table 3.4.2 Use case description of login

Use case	**Login**
Primary Actor	Admin, User
Secondary Actor	Null
Pre-condition	Null
Scenario	• Enter Email/Username • Enter Password
Post-condition	Register successfully or failed

Table 3.4.3 Use case description of checking file

Use case	File Status
Primary Actor	USER
Secondary Actor	Null
Pre-condition	Registered and logged in
Scenario	• Enter Applicant's Name • Enter Passport Details • Enter Other Information • Enter Picture • Delete file
Post-condition	Submit file successfully or failed

Table 3.4.4 Use case description of check file and submit

Use case	Check file & submit
Primary Actor	USER
Secondary Actor	Null
Pre-condition	Registered and logged in
Scenario	• Can User's file • Can Submit files • Can check current status
Post-condition	Submit file successfully or failed

Table 3.4.5 Use case description of checking submitted file

Use case	Submission
Primary Actor	Amin
Secondary Actor	Null
Pre-condition	Registered and logged in
Scenario	▪ Can Submit file
Post-condition	Submit file successfully or failed

Table 3.4.6 Use case description of manage account

Use case	Manage Account
Primary Actor	Admin
Secondary Actor	Null
Pre-condition	logged in
Scenario	• Can Check Accounts • Can Delete Block
Post-condition	Account blocked successfully.

Table 3.4.7 Use case description of manage file

Use case	Manage Offer
Primary Actor	Admin
Secondary Actor	Null
Pre-condition	logged in
Scenario	• Can Check files • Can Delete files
Post-condition	Offer deleted successfully.

Table 3.4.8 Use case description of manage access

Use case	Manage Post
Primary Actor	Admin
Secondary Actor	Null
Pre-condition	logged in
Scenario	• Can Check File • Can Delete File
Post-condition	File deleted successfully.

Table 3.4.9 Use case description of update profile

Use case	Update Profile
Primary Actor	Admin, User
Secondary Actor	Null
Pre-condition	logged in
Scenario	• Can Update Image • Can Update Name • Can Update Information
Post-condition	Profile updated successfully or failed

Table 3.4.10 Use case description of manage user

Use case	Manage Post
Primary Actor	Admin
Secondary Actor	Null
Pre-condition	logged in
Scenario	▪ Can Delete Profile
Post-condition	Profile deleted successfully.

Table 3.4.11 Use case description of logout

Use case	Logout
Primary Actor	Admin, User
Secondary Actor	Null
Pre-condition	logged in
Scenario	▪ Can Logout
Post-condition	Logout successfully or failed

3.5 Logical Data Model

3.5.1 E-R Diagram

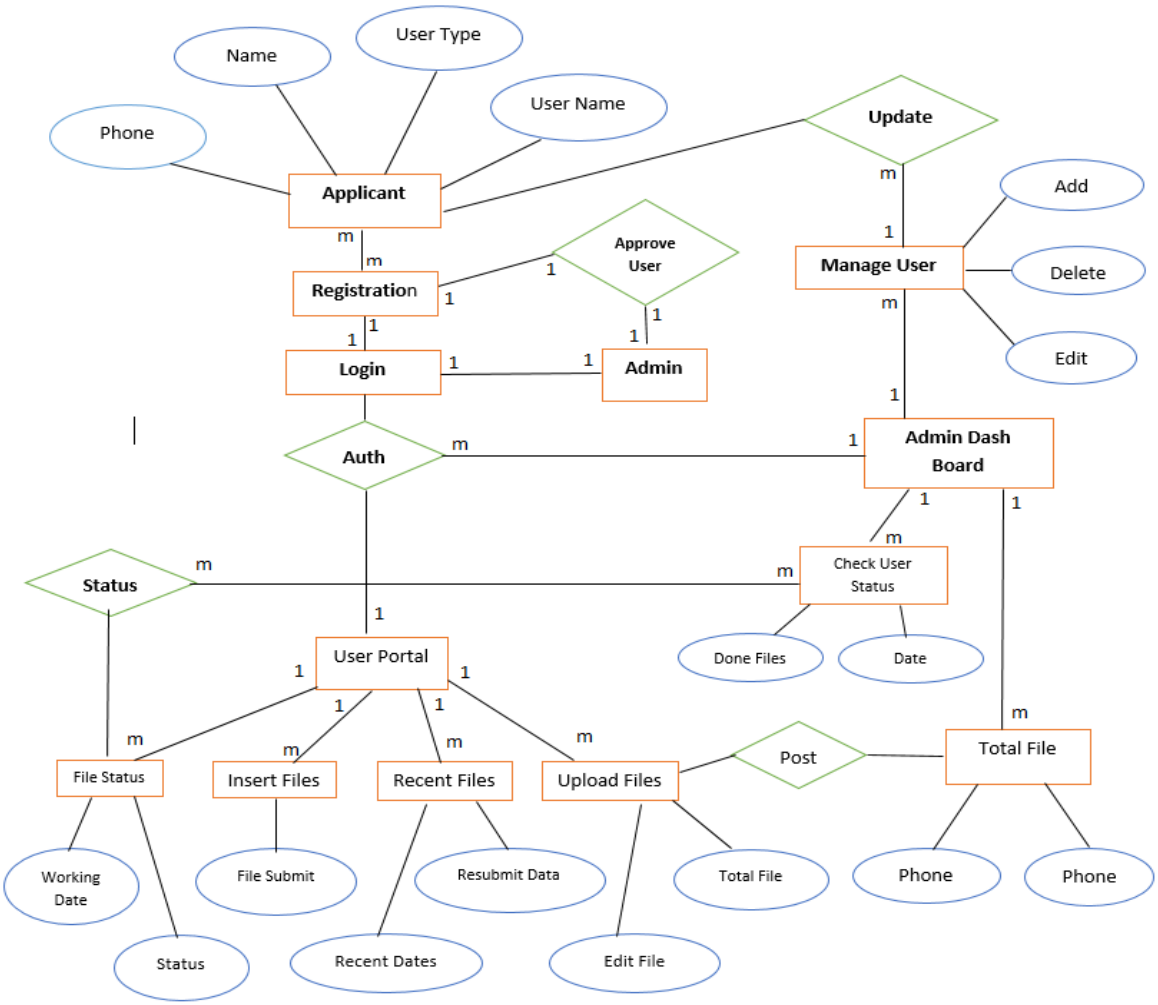

Figure 3.2: E-R Diagram of System

3.5.2 Class Diagram

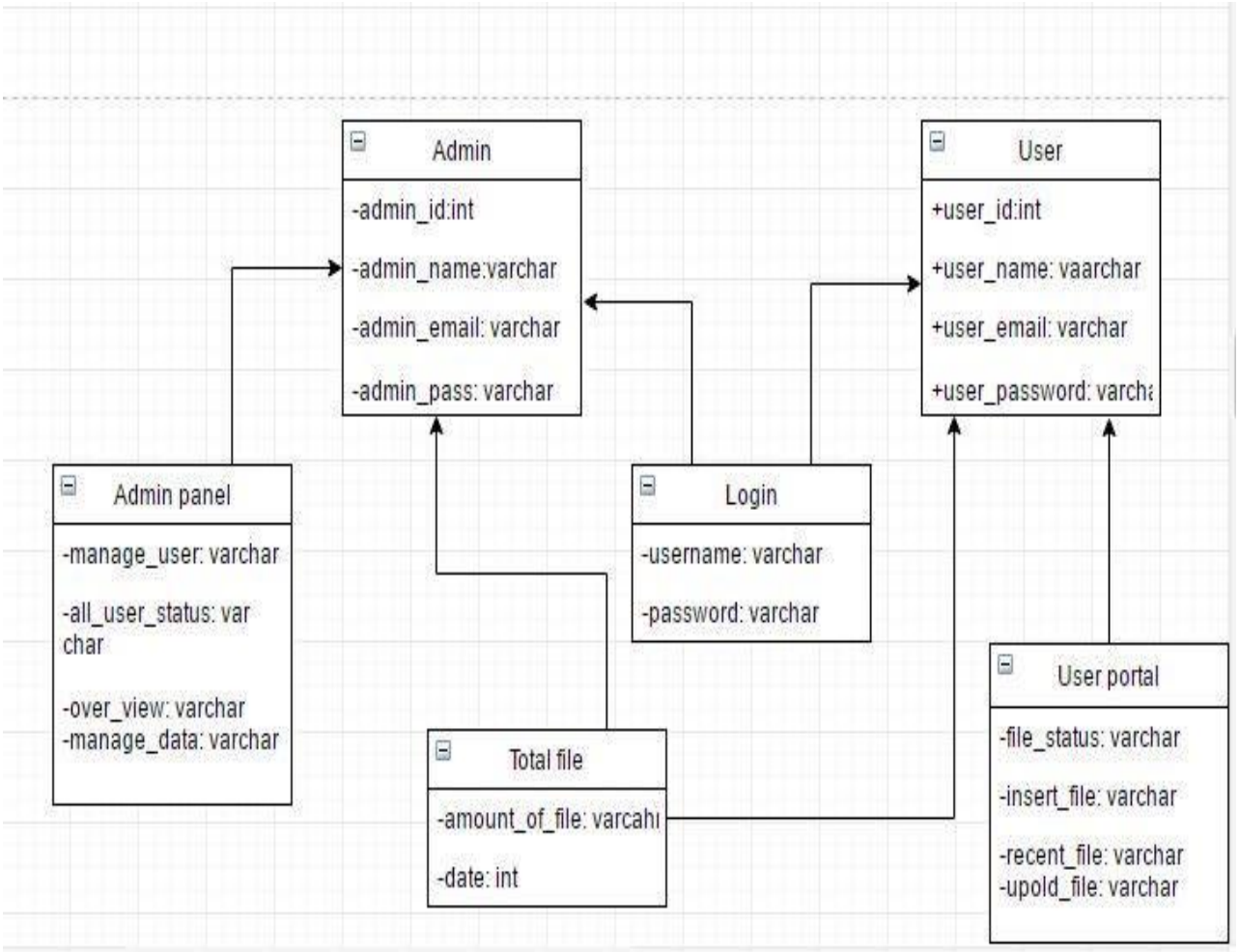

Figure 3.3: UML Diagram

3.6 Design Requirement

- This system will have two type of user such as admin, applicant/user.
- Users will register and set up their profiles.
- Users can submit their files before 1.00 am daily
- Users can check their file status and OTP status.
- Users can add or remove and also can edit their submitted files.
- Users can contact with admin for further access requirement.

- Users can resubmit their recent files**.**
- Admin can approve every specific user's files.
- Admin can delete files or send a request to modify them to the users.
- Admin can verify users.
- Admin can manage and block account**.**
- Admin can add and delete user profile.
- Admin can get specific user information.
- Everyone can logout their account.

CHAPTER 4
DESIGN SPECIFICATION

4.1 Front-end Design

The main attraction of a web-based application is its front-end design. This is the way of interaction between the users and the servers. Front-end design is also known as client-side development. In most of the case, web-based application's front-end design gets most of the priority. So we made a front-end design for the users to co-operate with the website very easily.

4.1.1 Home Page

In the home page, there is website name & logo, home, our vision, about us, login etc. We tried make whole website as responsive as possible, so it can be view easily in many devices.

Figure 4.1: Homepage

4.1.2 Features

Features of this website is booking for Indian visa appointment. This system also includes an Android app. The user has to install this app to get the proper result.

Figure 4.3: The Working process of the website

4.1.4 Login

The user or admin can log in to the login page in this system. User and admin will use the same panel to log in.

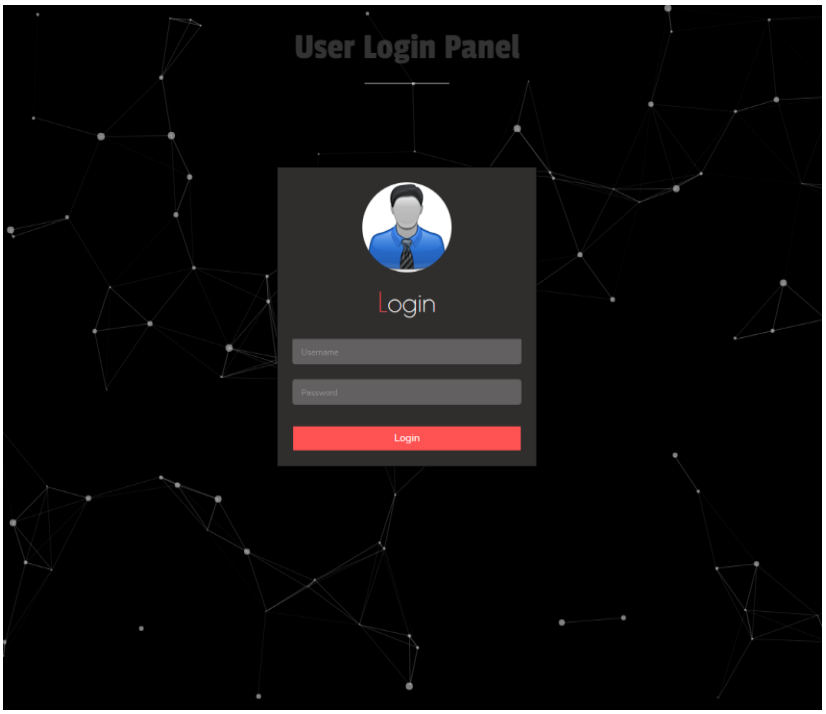

Figure 4.4: Login

4.1.5 Registration

Users have to make registration first to use the website

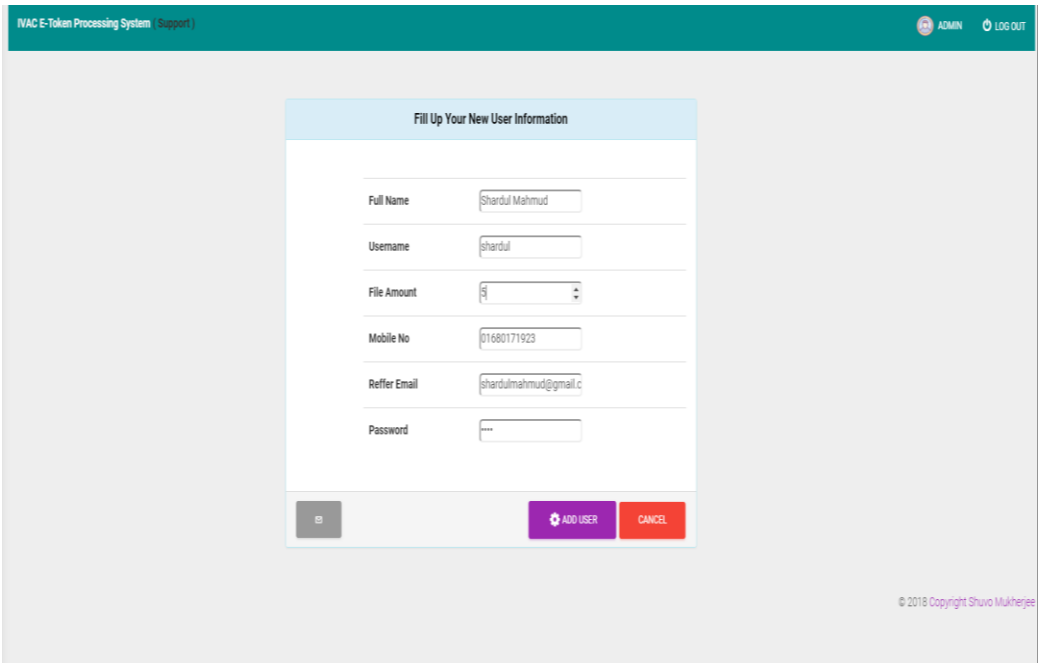

Figure 4.5: User Registration

4.1.6 User Dash Board

After login, a user can see this screen

Figure 4.6: User Dash Board

4.1.6 User panel Insert and Upload files

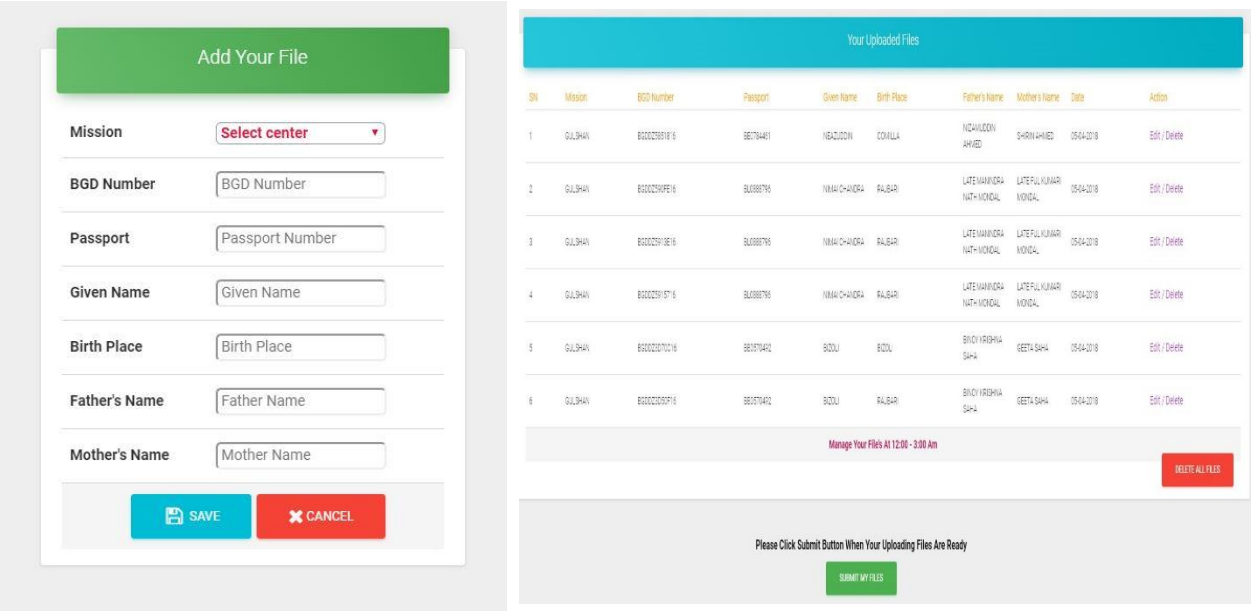

Figure 4.7: User panel Insert and Upload files

4.1.8 Mobile Apps Manage

One user has to download and install our Android app without granting all the permission access. This app will capture the OTP SMS and send this to the server.

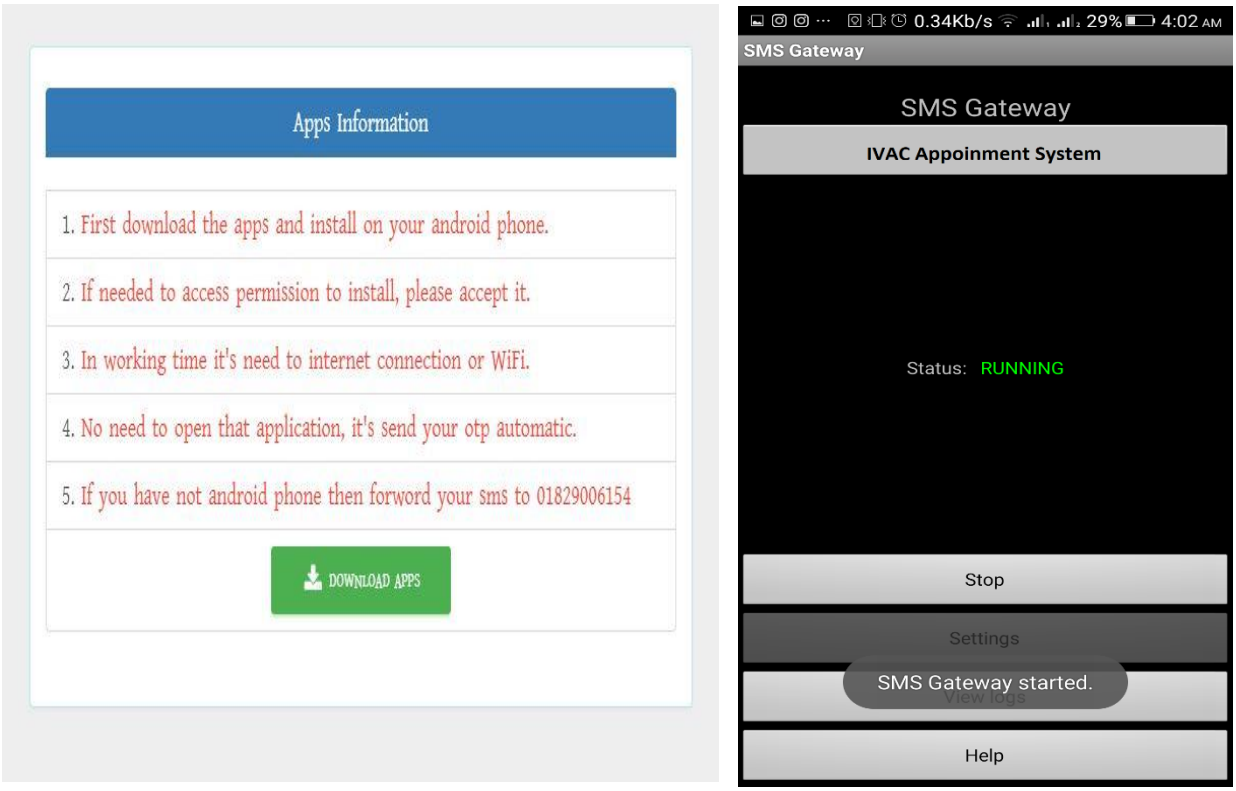

Figure 4.8: Mobile Apps Manage

4.1.9 File Status

A user can check his submitted file status from here

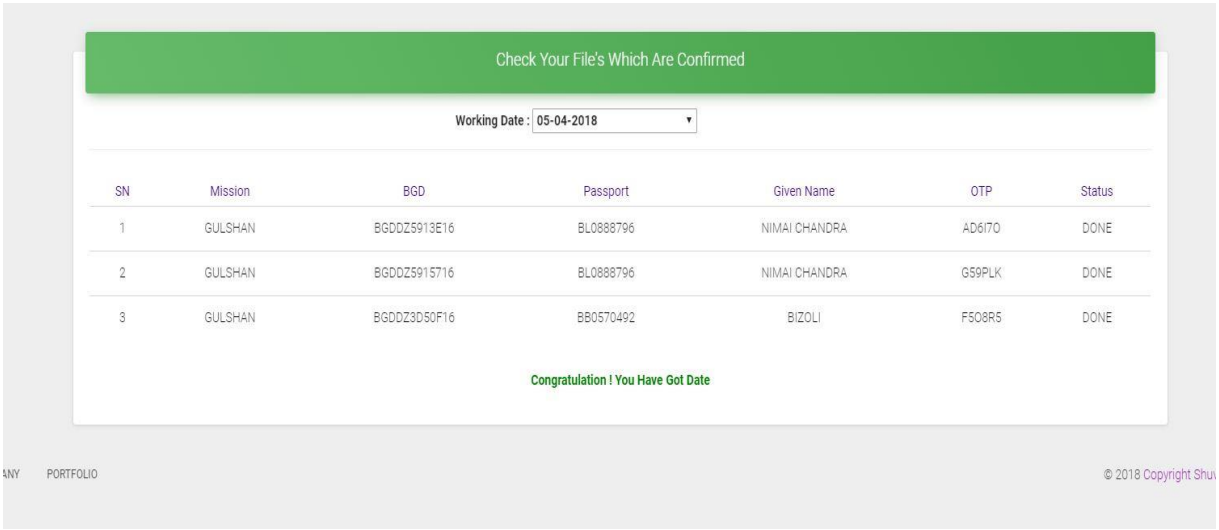

Figure 4.9: File status

4.1.9 File Status Recent file and My Profile

Users can see recent file status and resubmit them if they want. From My profile, they can view their personal information and can update them if they want.

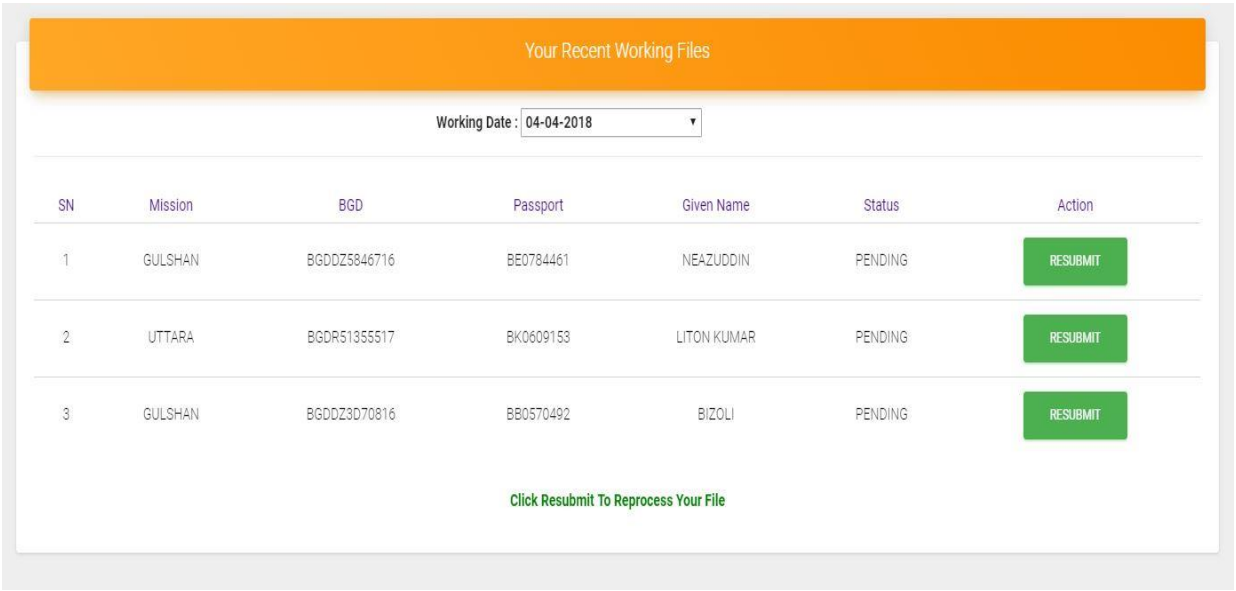

Figure 4.10: Recent File

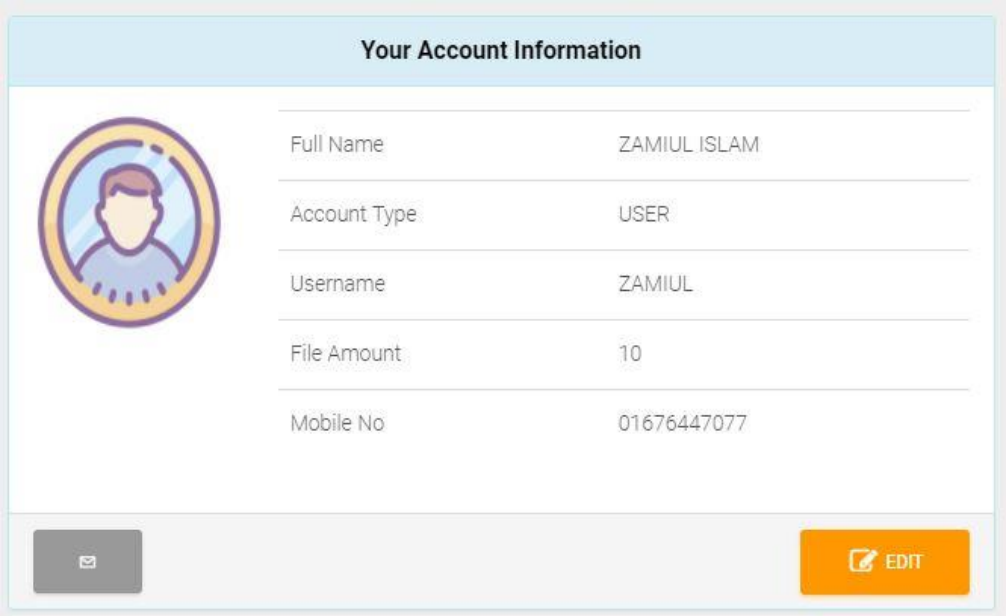

Figure 4.11: User Profile

4.1.10 Admin Panel

From this panel, admin can control all over the system. After login as an admin, this page will be shown.

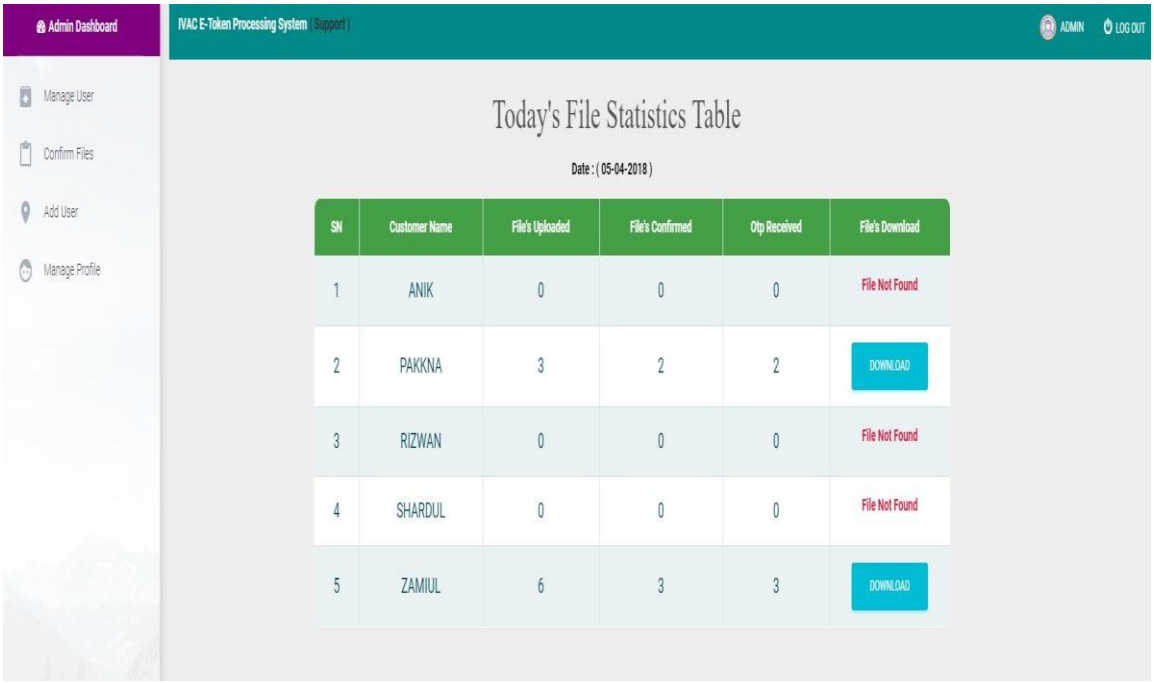

Figure 4.12: Admin panel

4.1.11 Admin Manage User

Admin has an overview of all the registered users. Admin can easily edit or delete a user.

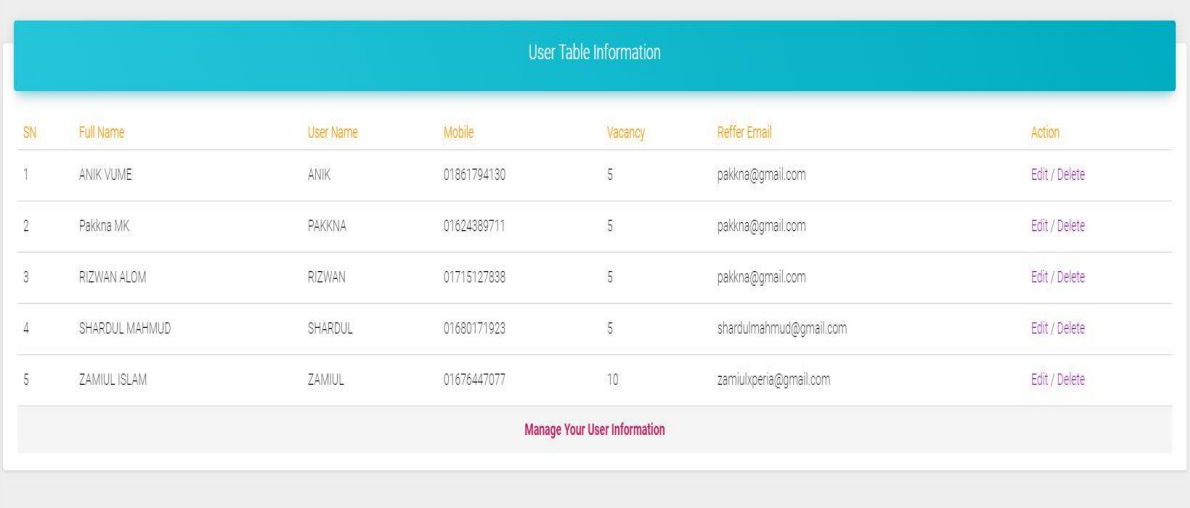

Figure 4.13: Admin manage user

4.1.12 Admin Overview Confirm Files

Admin can check all the files that are confirmed.

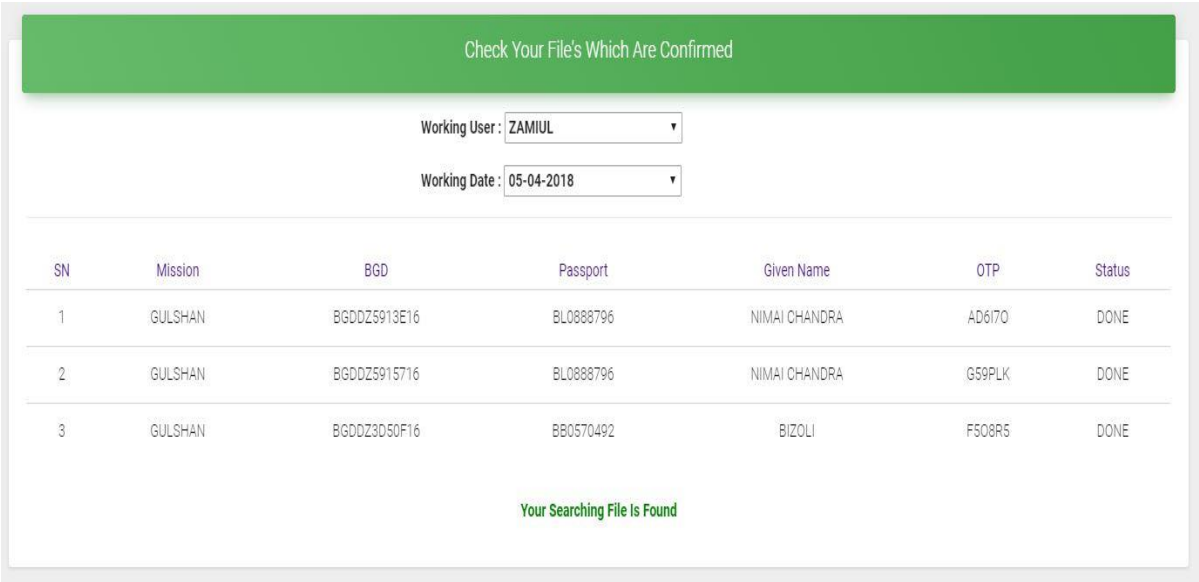

Figure: 4.14 Admin Overview Confirm Files

4.2 Back-end

All the logical things get processed in the back-end of a website. It is a very important and complex thing of a website. The whole systems and process will depend on this. Normally back-ends directed server site. In the back-end, there are a lot of issues to tackle like as the scripting language or the server site language, database management system, security of that database, verification, authorization, data passing, data validation, data backup etc. We have developed "IVAC Appointment System" using "Laravel" which is a PHP framework having all the aspects that are discussed before and also MySQL give us the logical things and hosting.

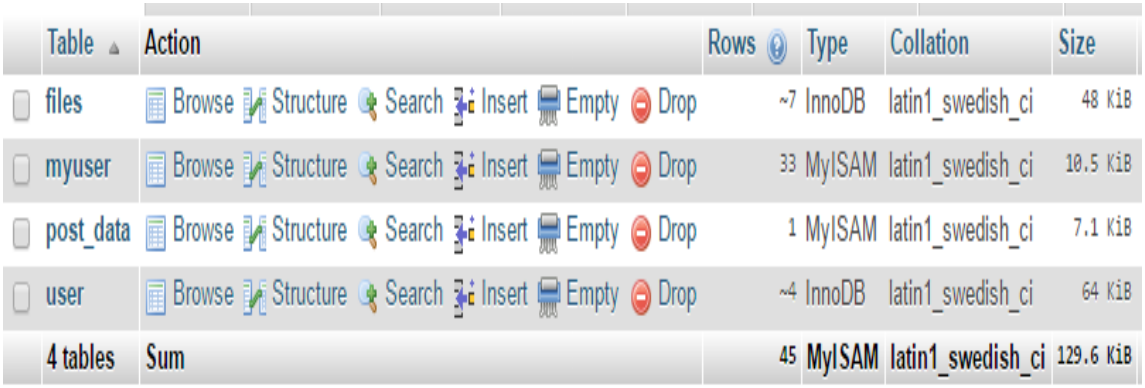

Table	Action	Rows	Type	Collation	Size
files	Browse Structure Search Insert Empty Drop	~7	InnoDB	latin1_swedish_ci	48 KiB
myuser	Browse Structure Search Insert Empty Drop	33	MyISAM	latin1_swedish_ci	10.5 KiB
post_data	Browse Structure Search Insert Empty Drop	1	MyISAM	latin1_swedish_ci	7.1 KiB
user	Browse Structure Search Insert Empty Drop	~4	InnoDB	latin1_swedish_ci	64 KiB
4 tables	Sum	45	MyISAM	latin1_swedish_ci	129.6 KiB

Figure 4.15: Database tables in PHP myadmin.

4.3 Interaction Design and UX

We designed our website using the Bootstrap 4 framework, jQuery, and font awesome. These components help us to design a responsive and better visual experience with the user-friendly environment. The user experience is bringing better for the process of enhancing user satisfaction with the website and pleasure provided within the website. The designs focused on creating web interaction with logical and thought out behaviors and activities. We design it with keep in mind that, the successful interactive design uses technology and principles of good communication to create desired user experiences.

4.4 Implementation of Requirements

- The UI design had to integrate into the Laravel which is a PHP framework.
- The database should be in MySQL.
- Hosting a platform should be on Linux based server.
- Schedule-wise backup from the server.
- Unauthorized attach needed to prevent with maximum attach limits.
- Invalid data input should display an error message.
- For specific design jQuery needed to be implemented.
- In front-end design bootstrap, jQuery is needed.

CHAPTER 5
IMPLEMENTATION AND TESTING

5.1 Implementation of Database

Because of PHP, we have created a different type of table which describes the content's attribute and the data type. In this process SQL query needed to perform actions. In the model the data can check is user has the permission to input the data directly into the database. There are 12 tables in the database.

Admin: Admin details.

Admin panel: Admin manage table.

User: User's whole information saved.

Applicant: Applicant's whole information saved.

File list: File list manage table.

File detail: File detail manage table.

Submit Files: Submitted file manage table

Check Files: Check file manage table

5.2 Implementation of Front-End Design

It's quite hard and challenging to create a simple UI design for the users, we try to make as simple as possible. Nowadays, there are many devices like smartphones, tablets, desktop, etc. We have made our website to responsive to many devices like these, so that the users can visit our website with different devices. We have made our website's interface with the help of HTML%, CSS#, JavaScript, jQuery and Bootstrap 4 framework technology. There are some factors of implementing the front-end design is given below.

- There are three types of user Admin, User.
- Every type of user must be registered by filling up the required information field.

- The user can login using registered email and password
- For updating a user profile, the user must enter the password for the security.

5.3 Implementation of Interaction

In order to make our web application system (IVAC Appointment System) interactive we make the UI responsive and use buttons, icons, text, headlines many more. The system design of our web is user-friendly. Both User and Admin will able to use the features as loge as they are logged in.

5.4 Testing Implementation

Testing implementation is a process of testing upcoming implementation of a system, where tester or system architect will see cases and specification, is it implemented or have limitations.

Table 5.1: Test case evaluation

Test Case	Test Inputs	Expected Outcome	Obtained Outcome	Pass/Fail	Tested On
1. Login	Login via Various devices	Successfully login	Successfully login	pass	03-04-2018
2.Registration	Username password	Show restriction to Fill all the fields	Fields must be filled by data	Pass	03-04-2018
3. Password	Incorrect Password or empty filed	Warn the incorrect Password or field is empty	Show warring	Pass	03-04-2018

4.Profile settings	View profile Update profile	Show update profile information	Show and update information successfully	Pass	03-04-2018
5.File	Input Application File	File post has been created	Offer post created successfully	Pass	03-04-2018
6.File submitting	In Order information	File submission has been confirmed	File submission confirmed successfully	Pass	03-04-2018

5.5 Test Results and Report

The test report is wanted to reflect testing results in a formal way, which gives a scope to estimate testing results speedily. It is a paper that records data obtained from an evaluation experiment in an organized manner, describes the environmental or operating conditions, and shows the comparison of test results with test objectives. The test report is very important and it is needed to know that the system is ready/ not ready for implementation? It is a document that records data obtained from an evaluation experiment. We need to run through many types of testing.

There are many types of testing:

- Functionality
- Regression
- Security
- Performance
- Scalability
- Usability
- System interoperability
- Localization
- Disaster recovery
- Installation/ upgrade

If the system passes through all these types of testing it is finally ready to launch so at the End, we can carry out the results as the benefits of usability testing.

- The system is easier to use.
- The website is more readily accepted by users.
- Better UI for interaction.

CHAPTER 6

CONCLUSION AND FUTURE SCOPE

6.1 Discussion and Conclusion

The system will help users to get an appointment in a short time. It will save time and reduce difficulties as well as money. The system is already in testing service. The system will come with more upgrades and a new feature in future. It will be upgraded with its web interface layout and features.

6.2 Scope for Further Development

- System features will upgrade day by day for a better experience.
- The new features will be added based on user feedback.
- The system will have implemented by new UI if needed.
- Artificial Intelligence enhancement will be implemented to make the system fast and more durable.
- Security will be more updated.
- We will take security as a major part to be improved.
- More security steps will be taken as many user's information will be in our database.
- Both Android base and IOS base platform will be included.
- Mobile app system will be developed based on our user feedback.
- A customer service number will be provided for any kind emergency and informational help.
- For commercial purpose we will introduce some monthly and yearly based subscription package in near future.

APPENDIX

Project Reflection

From Summer-2017 semester we had started our journey to make a system, where users can get their Indian visa appointment very easily and it will save valuable times as well as complexity and money. We followed the model to implement and monitor our system, with the all hard work and spending a lot of time finally we were able to reach our goal at last. So, we believe that our "IVAC Appointment System" will have a positive and effective thing for the users who are in very need of this visa appointment. And soon we will start upgrading our system on a regular basis as it requires.

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