AUTOMATION OF CENSUS PROCESS IN THE CONTEXT OF BANGLADESH

BY

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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/internship titled **"Automation of Census Process in the Context of Bangladesh"**, submitted by Md. Hasibur Rahman ID No: 173-15-10357 and Waresh-Al-Hasan Akib ID No: 173-15-10410 and Fahim Ahamed, ID No: 173-15-10388 to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 4-1-2022.

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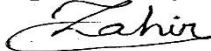Hajee Mohammad Danesh Science and Technology
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DECLARATION

We hereby declare that, this project has been done by us under the supervision of MR. Gazi Zahirul Islam, Assistant Professor, Department of CSE Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree.

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ABSTRACT

This report is intended as a companion for preceptors and engineering scholars when conducting exploration is part of course- work conditions Discussion includes a description of a literature hunt, the purpose of a literature review finding sources and a general strategy to help conduct an effective and productive literature hunt. Using tools such as this report, students can become more pro-active about their research projects. Teachers can use this report, among other tools, to begin dialog with their students about expectations for research assignments. Two key steps in a literature search are: (i) finding sources; and (ii) synthesizing information. Each of these is addressed in two of the major sections in this report, as well as how the literature search relates to the entire research process. Then pertinent information is repeated in the summary section for convenience. An annotated reference list is included for ease in finding other useful guidance.

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CHAPTER 1

Introduction

1.1 Project Overview

We all are in digital world. Now the entire world depends on the modern technology. But our new generation in our country walking lagged behind 10 years form the digital world.

But, till in our country huge percentage of government office run by ancient system. Census process is one of them. Today this process run manually and this system is still now depended on ledger process It's not natural and satisfactory in this era of innovation. And because this method is behind the times in terms of new technology and takes a long time, there is a risk of data loss. Beside this, it is very risky to store data if incase happened data losing data then it is so lengthy and much difficult to discover it data from the archive. Also, it is difficult to keep up with the information as well.

So, we (Photon in a Double Slit) came up with this new idea of "Automation of Census Process in the Context of Bangladesh" where the entire system can be finished digitally and automatically. The system will then be less time intensive, and there will be no security concerns. It will be easier to find old information and maintain it up to date.

1.2 Project Purpose

The main aim of developing our web project is to make things simpler management to make things simpler collect data from the start to finish of the census. Still now (2021), the whole census process is done manually help with pen and paper. This process is not a convenient one and there is also the risk of losing data. By this project, we want to automate the whole census process no risk to loosing data, allowing the Ministry of Planning to keep track of demographic figures over the internet it's also designed to make population control easier over the web, resulting in better administration and efficiency.

1.2.1 Project Background

We felt that, doing census process physically is not easy for our country. So, we wanted to make a web based project which make the whole census project automated system and where the whole census system from to report generation and collect data can be done automatically. Where there will be no fear about data losing and maintenance.

1.2.2 Benefits & Beneficiaries

- My system will help enumerators completing their census forms easily
- It will help admin to maintain the forms submitted by enumerators
- Admin will be able to assign his/her working area easily
- Admin can easily maintain all enumerators account
- Bangladesh Statistical Bureau can easily maintain the census process

1.2.3 Project Objectives

Our project's main purpose is to provide a web-based tool for census metering in our nation. This is accomplished by totally automating and digital, the whole census process enables the Bangladesh Bureau of Figures to keep track of population statistics over the internet.

1.3 Stakeholders

There are three stakeholders in our project "Automation of Census Process in the Context of Bangladesh". And they are:

- Enumerator
- Admin
- General citizen

Enumerator: An enumerator is a person employed in taking a census of the population. Enumerator is a primary stakeholder of our system. The enumerators will collect data by survey and completing the questionnaires in the census form. After successfully fill-up the

census form, the enumerator will submit the form to our system for further checking. An enumerator can modify and check the form before submitting if needed.

Admin: Admin is also a primary stakeholder of our system. Admin will assign an enumerator his/her working area for collect data. If an enumerator submits a form, at fast admin will check it and then approve/reject the submitted form. If needed admin can also modify a form.

General Citizen: There is a small role of general citizen in our system. They can easily access the system and they can see the report. They can also know more about census in our country form our system.

1.5 Project Schedule:

To complete a project successfully, a proper project schedule is needed to be ready at first. It also helps to deliver a project on time.

Here is our project schedule:

1.5.2: Release Strategy or Milestones

Activities	In half-month intervals (15 days)	Month-End
Brainstorming	Month-1 Half-1,	.5
Problem identification	Month-1 Half-1, Month-1 Half-2	1
Requirement specification	Month-2 Half-1, Month-2 Half-2	1
Requirement analysis	Month-3 Half-1, Month-3 Half-2	1
Sketching	Month-4 Half-1	.5

Chapter 2

Specifications for Software Requirements

2.1 Requirements for Function

Functional Requirements are those that must be part of the system. These requirements are mandatory to run any system. If there is one thing a project must have functional requirement. Now, I'm going to discuss about the functional requirements of our system:

2.1.1 Admin Registration

FR-1	Admin Registration		
Description	Admin & Enumerator must complete registration in the system using unique email, password, name, address and location. In future, Admin can't change his/her registered email address. Without registration, they can't enter the admin panel and can't use any facilities.		
Stakeholders	Admin	**Priority**	High

2.1.2 Admin Login

FR-2	Admin Login		
Description	After successful registration, Admin will login to the system with an email address and a password.		
Stakeholders	Admin	**Priority**	High

2.1.3 Enumerator Registration

FR-3	Enumerator Registration		
Description	Enumerator must complete registration in the system using unique email, password, name, address and location. In future, Enumerator can't change his/her registered email address. Without registration, they can't enter the admin panel and can't use enumerator facilities.		
Stakeholders	Enumerator	**Priority**	High

2.1.4 Enumerator Login

FR-4	Enumerator Login		
Description	After successful registration, Enumerator system with an email address and a password		
Stakeholders	Enumerator	**Priority**	High

2.1.5 Update Profile

FR-5	Update profile		
Description	Admin and Enumerator can update their profile information if they want. But there will be some rules. Some information cannot be changed after registration.		
Stakeholders	Enumerator, Admin	**Priority**	Medium

2.1.6 Complete the survey

FR-6	Complete the survey		
Description	Enumerators will go door to door and complete the census form by asking those questionnaires in census form.		
Stakeholders	Enumerator	**Priority**	High

2.1.7 Submit Census Form

FR-7	Submit Census Form		
Description	After successfully filling up the census form, the enumerator will submit the form and the form will be in a queue for admin approval.		
Stakeholders	Enumerator	**Priority**	High

2.1.8 Check Census Form

FR-8	Check Census Form		
Description	Admin will check the forms submitted by the enumerators.		
Stakeholders	Admin	**Priority**	High

2.1.9 Approve Census Form

FR-9	Approve Census Form		
Description	Admin will check the census form. If all the information is filled up correctly, admin will approve the census form.		
Stakeholders	Admin	**Priority**	High

2.1.10 Reject Census Form

FR-10	Check Census Form		
Description	Admin will check the census form. If there is any mistake in the form, admin can reject the census form.		
Stakeholders	Admin	**Priority**	High

2.1.11 Modify Census Form

FR-11	Modify Census Form		
Description	Enumerator can modify a census form before submitting. And admin can modify a census form before approve the form.		
Stakeholders	Admin, Enumerator	**Priority**	Medium

2.1.12 Generate Census Report

FR-12	Generate Census Report		
Description	Admin will generate the final census report, based on the information of all approved census form.		
Stakeholders	Admin	**Priority**	High

2.2 Data Requirements

Data requirements refers those data which are needed to fulfill the form in our system model. For our project, we must concentrate on a certain issue, such as:

- Entity types in the system
- Household information
- Personal information
- Location information
- Connection with database
- Availability of data
- Quantity of data

2.3 Performance Requirements

Performance is one of the most important things of a system. To ensure the best performance of our system, we need to fulfill some requirements.
And these are:

2.3.1 Speed and Latency Requirements:

SLR-01	Processing of the system must be faster.		
Description	When any user will run our system, speed and performance will have depended on their internet speed and server bandwidth speed.		
Stakeholders	Admin, Enumerator, General citizen	**Priority**	High

2.3.2 Precision or Accuracy Requirements

PAR-01	Report result must be accurate		
Description	When admin will generate the final census report, the report must have to be accurate based on the information.		
Stakeholders	Admin	**Priority**	High

2.3.3 Capacity Requirements

CR-01	The system will manage thousands of data		
Description	The system will manage thousands of data and ensure that the database will work all the time properly.		
Stakeholders	Admin	**Priority**	High

2.4 Dependability Requirements

The word "reliability" is based on four criteria. And these are:

- Availability
- Reliability
- Safety
- Security

2.4.1 Availability and Reliability Requirements

RR-1	The system must be available on 24 X 7		
Description	• Our system must be available 24 hours a day, and seven days a week. • The system should be updated on a regular basis. • Malware-free system is required.		
Stakeholders	N/A	**Priority**	Medium

2.4.2 Robustness or Fault-Tolerance Requirements

RFT-1	All user access is handled by the system without any errors		
Description	At any given time, hundreds of people may access our application system. All of their requests must be handled flawlessly.		
Stakeholders	N/A	**Priority**	High

2.5 The capacity to maintain and support Requirements

It is very important to provide after service support to the end user. If we want to keep our system user friendly, we will have to ensure the best end user support for all the time.

2.5.1 Maintainability Requirements

MR-1	The system assists in updating the user profile.
Description	It is very important to update user profile.
Stakeholders	Admin

2.5.2 Requirements for Compatibility

Some extents may have been related to supportability needs, such as:

- Compatibility
- Adaptability
- Extensibility
- Serviceability
- Maintainability
- Testability
- Configurability
- Maintainability
- Install ability

This application satisfies all of the aforementioned requirements.

2.6 Security Requirements

For every system, security is a very important thing. A system with less security will no longer be usable for long time of period. The security criteria for software should be the same as its functional needs. The security of an application system is enforced by software security. Software security functionality can be either directly tested or observed. Some security criteria are listed below:

- Logging in an enumerator and admin
- Get access based on the person that is currently logged in.

- Complete census survey without having any issue
- Signing out an enumerator and admin
- Handling encrypted passwords

Each and every module that has access to the system must provide a central authentication method. There is also a method in place to prevent unauthenticated users from joining the system by requiring hashed passwords.

2.6.1 Access Requirements

There are still certain authentication and authorization approaches that can be used to gain access to our application system. And it will be provided by each module of our system. Now we'll explain in more detail below.

AR-1	The application has a security feature.
Description	Every module is constructed in such a manner that it only allows access to authorized and authenticated users.
Stakeholders	Admin, Enumerator

2.6.2 Integrity Requirements

The term "integrity requirements" refers to a security system that guarantees data quality. It also ensures that all data of the system would never be exposed to the malicious modification or accidental destruction. As a result, we'll keep user passwords in an encrypted manner that can't be decrypted. It is also called hashed password.

2.6.3 Privacy Requirements

It is very important to ensure privacy of the system users. Stakeholder privacy is better protected as a result of the increased privacy regulations. As a result, all or a portion of the data will be released in accordance with the system's privacy policies. To preserve privacy, the central database should be password-protected. Users are granted access to the data with which they are related, as ensured by the user log in system.

2.7 Requirements for Usability and Human-Interaction

The primary goal of building any system is to make it user pleasant and simple to use for the end users.

2.7.1 Ease of Use Requirements

EUR-1	Application must be usable for the end users.
Description	This application is enough usable to the admin, enumerators and general citizens.
Stakeholders	Admin, Enumerators

2.7.2 Requirements for personalization and internationalization

There are no customizing or internationalization needs in this project. This project will only be utilized in Bangladesh in its current form.

2.7.3 Requirements for understandability and politeness

The system we are developing will be easily understandable to all the users. The system will always show the hints to use this application. And whether there is any error, the system will notify the user, and user will able to use the application properly. And we have so many diagrams and user manuals so that user can understand this system clearly.

2.7.4 Requirements for Accessibility

There are no such restrictions for this system's accessibility

2.7.5 Training Requirements

Training requirements means the training required for the user to use the system properly. After successfully launching the application, we will provide a training for the enumerators how to complete the survey without any mistake, how to fill up the form, how to go door to door and cooperate with the people. And we will arrange a training for the admin too,

how to check the submitted forms, which one is to approve, which one is to reject and how to maintain the whole system.

2.8 Look and Feel Requirements

It is said that, first impression is the last impression. So, it's very important to look the system very attractive and usable to the users. If the system looks very complex, the user will not feel comfortable to use this system. Look and feel requirement refers to those requirements needed to build a good graphical interface for the system.

2.8.1 Appearance Requirements

All user, include traffic police, must be aware of which input fields are required and which are not. As a result, we'll use labels for all of the input fields. Text, radio, checkbox, spinner, as well as other types of input fields are possible.

AR-1	Mandatory field labels must be identified.		
Description	To make it easier for users, the mandatory field's label must be identified, and all input fields must have placeholders.		
Stakeholders	Enumerators	Priority	Medium

2.8.2 Style Requirements

SR-1	The stylesheet file must be able to control the appearance.		
Description	The stylesheet files for Android applications are xml. As a result, the xml file		
	must be able to control all stylesheets.		
Stakeholders	Software developer.	Priority	Medium

2.9 Requirements for Operation and the Environment

Operational and environmental requirement refers to the competences, presentation capacities, procedure, measurements of efficiency, measurements of performance, measurements of sustainability etc.

2.9.1 Expected Physical Requirements

For our system, there are no such physical requirements.

2.9.2 Requirements for Interfacing with Adjacent Systems

For our system, there are no needs for interacting with other systems.

2.9.3 Release Requirements

For this system, there are no specific release requirements.

2.10 Legal Requirements

Legal requirements usually refer to an organization's terms and conditions or privacy policy. No third-party application or person is authorized to use our information for commercial purposes, according to the terms and conditions of the application.

2.10.1 Compliance Requirements

For this system, there are no special compliance requirements.

2.10.2 Standards Requirements

This system has no required specifications in terms of standards.

Chapter 3

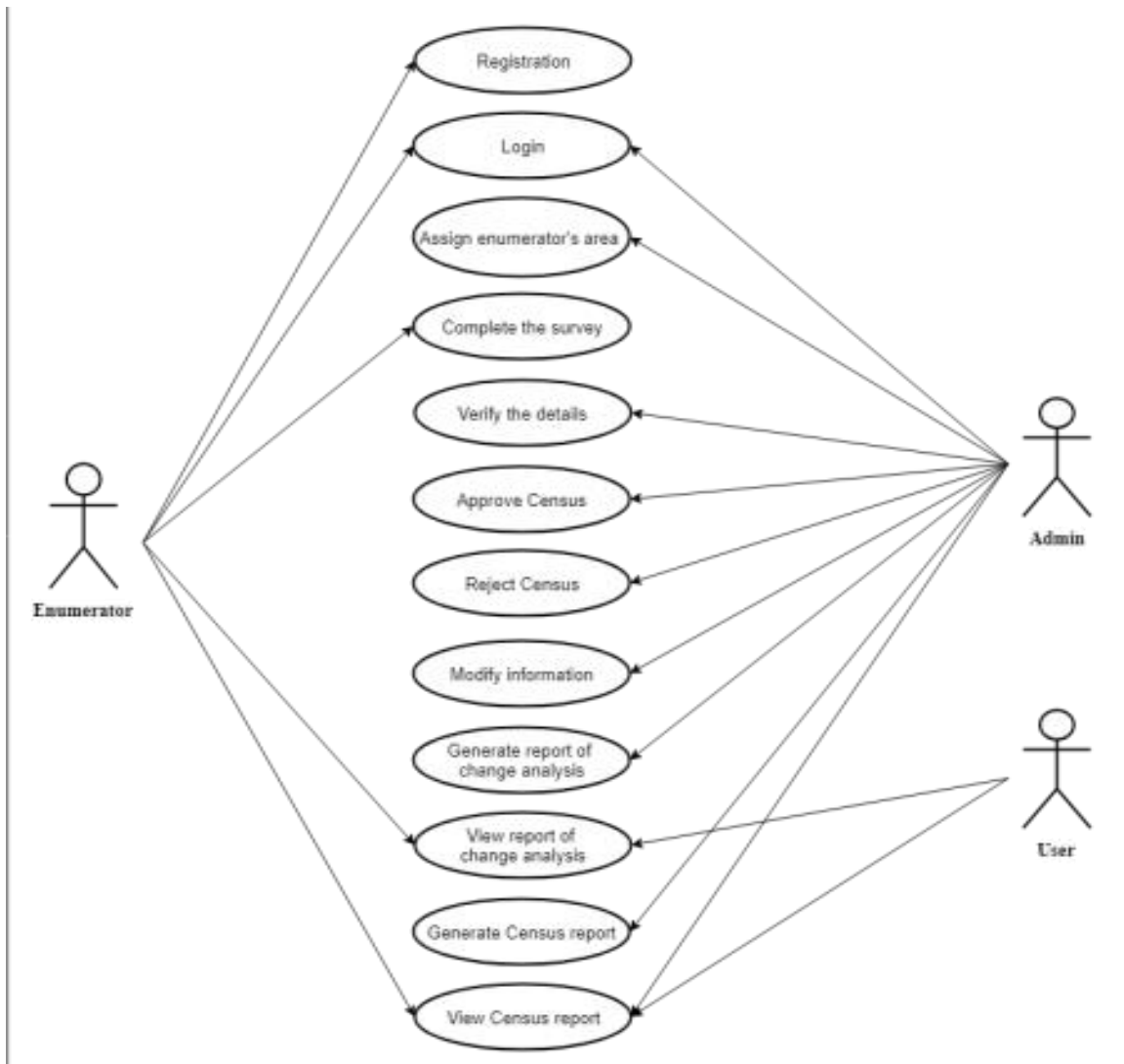# Requirement Analysis

3.1 Use case diagram

Figure 3.1: Use case diagram for 'Census'

3.1.1 Registration

Use Case Title	Registration	
Goal	• Admin and Enumerator must be registered into the system.	
Preconditions	• Registration data have to be genuine.	
Success End Condition	Registration done by an admin or enumerator.	
Failure End Condition	Registration can't do by an admin or enumerator.	
Primary Actors: Secondary Actors:	Admin, Enumerator System People	
Trigger	After click registration button, field will open.	
Description Main Success Scenario	Step	Action
	1	Registration data have to be genuine
	2	Admin and Enumerator both have to be registered
	3	Illegal data can't accept for registration
Alternative Flows	Step	Branching Action

	1a	Admin can't register
	2a	Illegal data can accept for registration
Quality Requirements	**Step**	**Requirements**
		N/A

3.1.2 Login

Use Case Title	**Login**	
Goal	• Admin and Enumerator must be logged into the system.	
Preconditions	• Without registration, login cannot possible.	
Success End Condition	Login done by an admin or enumerator.	
Failure End Condition	Login can't do by an admin or enumerator.	
Primary Actors: **Secondary Actors:**	Admin, Enumerator System	
Trigger	After click login button, system will open.	
Description	**Step**	**Action**

Main Success Scenario	1	After registration, second step will be login
	2	Every registered user can login
	3	Without registration, no user can login
Alternative Flows	**Step**	**Branching Action**
	1a	Admin can't login
	2a	Login failed even after registration
Quality Requirements	**Step**	**Requirements**
		N/A

3.1.3 Complete the survey

Use Case Title	Complete the survey
Goal	• Enumerator will complete the survey
Preconditions	• Enumerator must login to the system
Success End Condition	Survey completed by enumerator
Failure End Condition	Survey isn't completed by enumerator

Primary Actors: Secondary Actors:	Enumerator System	
Trigger	After completing the survey, enumerator will submit the form	
Description Main Success Scenario	Step	Action
	1	Enumerator complete the survey
	2	Enumerator submit the census form
	3	Enumerator modify the form
Alternative Flows	Step	Branching Action
	1a	Enumerator can't complete the survey
	2a	Enumerator can't submit the form
Quality Requirements	Step	Requirements
		N/A

3.1.4 Verify the details

Use Case Title	Verify the details	
Goal	• Admin will verify the details of submitted form	
Preconditions	• Admin must login to the system	
Success End Condition	Form verified by admin	
Failure End Condition	Form isn't verified by admin	
Primary Actors: Secondary Actors:	Admin System	
Trigger	Admin will click on a submitted form and the form will open for verification	
Description Main Success Scenario	**Step**	**Action**
	1	Admin open the census form
	2	Admin verify the details information
Alternative Flows	**Step**	**Branching Action**
	1a	Admin can't open the form
	2a	Form isn't showing

3.1.5 Approve Census

Use Case Title	Approve Census
Goal	• Admin will approve the census form
Preconditions	• Admin must login to the system
Success End Condition	Form approved by admin
Failure End Condition	Form isn't approved by admin
Primary Actors: Secondary Actors:	Admin System
Trigger	Admin will click on a submitted form and approve if the form is correct

Description Main Success Scenario	Step	Action
	1	Admin open the census form
	2	Admin verify the details information
	3	Admin approve the census form

Alternative Flows	Step	Branching Action

	1a	Admin can't open the form
	2a	Form isn't showing
Quality Requirements	**Step**	**Requirements**
		N/A

3.1.6 Reject Census

Use Case Title	Reject Census
Goal	Admin will reject the census form
Preconditions	Admin must login to the system
Success End Condition	Form rejected by admin
Failure End Condition	Form approved by admin
Primary Actors: **Secondary Actors:**	Admin System
Trigger	Admin will click on a submitted form and reject if the form isn't correct

Description	Step	Action

Main Success Scenario	1	Admin open the census form
	2	Admin verify the details information
	3	Admin reject the census form
Alternative Flows	Step	Branching Action
	1a	Admin can't open the form
	2a	Form isn't showing
Quality Requirements	Step	Requirements
		N/A

3.1.7 Modify information

Use Case Title	Modify information
Goal	Admin can modify the census information Enumerator can modify the information before submission
Preconditions	Admin and enumerator must login to the system
Success End Condition	Form modifies by admin or enumerator
Failure End Condition	Form isn't modified by admin or enumerator

Primary Actors: Secondary Actors:	Admin, Enumerator System	
Trigger	Admin will click the edit button and the for will appear for editing	
Description **Main Success** **Scenario**	**Step**	**Action**
	1	Admin or Enumerator open the census form
	2	Admin or Enumerator modify information
Alternative Flows	**Step**	**Branching Action**
	1a	Admin or Enumerator can't open the form
	2a	Form isn't editable
Quality Requirements	**Step**	**Requirements**
		N/A

3.1.8 Generate Census Report

Use Case Title	Generate Census Report	
Goal	Admin will generate a final census report	
Preconditions	Admin must login to the system	
Success End Condition	Census report generated by admin	
Failure End Condition	Census report isn't generated by admin	
Primary Actors: Secondary Actors:	Admin System	
Trigger	Admin will generate a final census report based on all census forms	
Description Main Success Scenario	**Step**	**Action**
	1	Admin approve all the correct forms
	2	Admin generate final Census report
Alternative Flows	**Step**	**Branching Action**
	1a	Admin can't open generate report
	2a	Form isn't showing

3.1.9 View Census Report

Use Case Title	View Census Report	
Goal	Everyone can view the final census report	
Preconditions	Final census report should be generated by admin	
Success End Condition	Census report is showing in the system	
Failure End Condition	Census report is missing in the system	
Primary Actors: Secondary Actors:	Admin, Enumerator, User System	
Trigger	A user clicks on the report button and final report is showing	
Description Main Success Scenario	Step	Action
	1	Admin generate final report
	2	Everyone can see the report
Alternative Flows	Step	Branching Action
	1a	Admin can't generate report
	2a	Report isn't showing
Quality Requirements	Step	Requirements

3.2 Activity Diagram

For our project, we've drawn several activity diagrams. These activity diagrams adequately describe the flow of my project's individual circumstances.

3.2.1 Registration
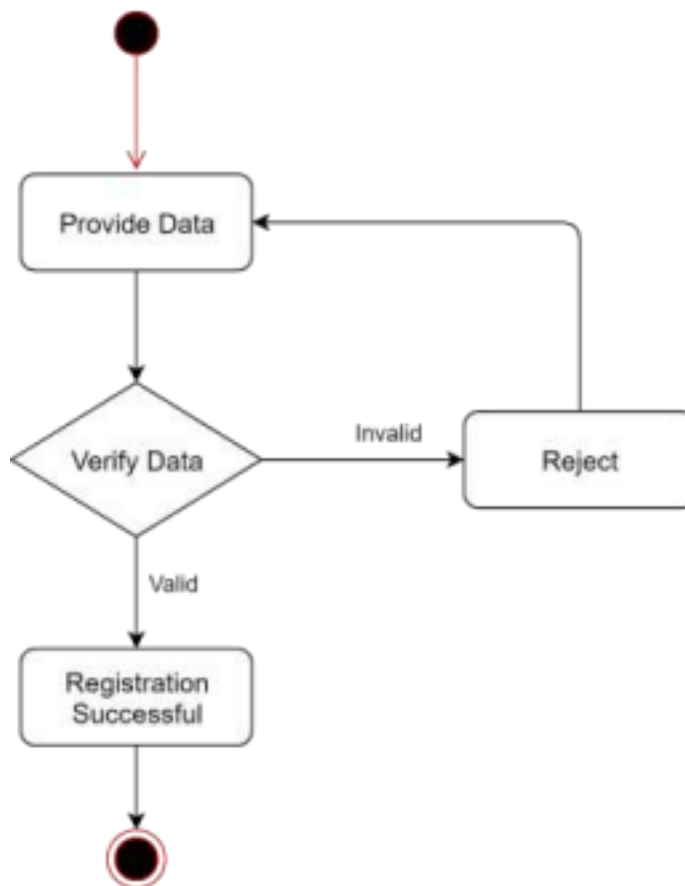
Figure 3.2.1: Activity diagram for "Registration"

3.2.2 Login
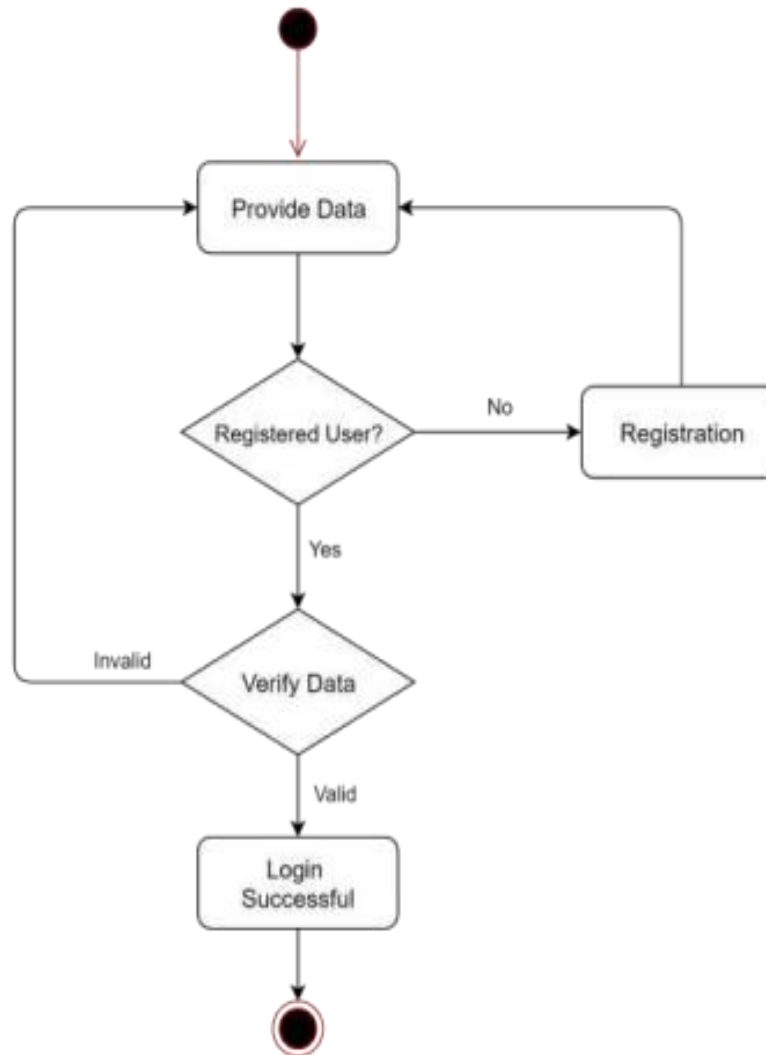
Figure 3.2.2: Activity diagram for "Login"

3.2.3 Complete the survey
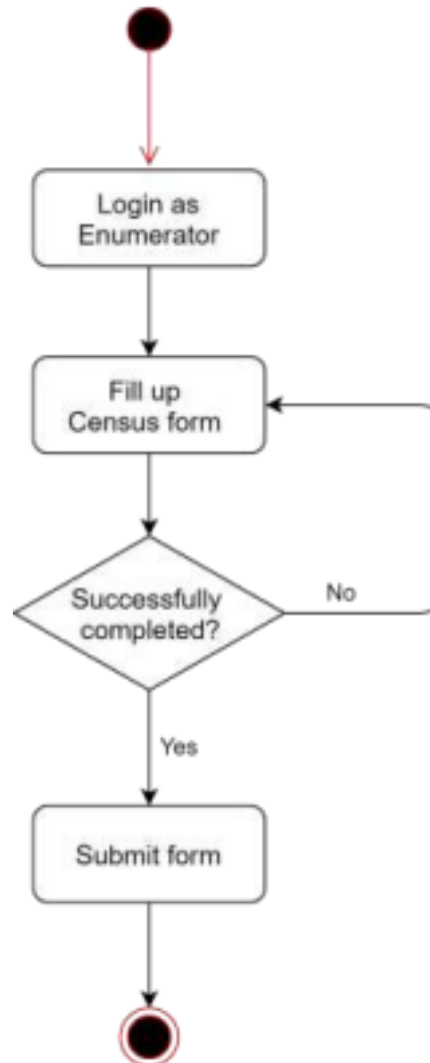
Figure 3.2.3 Activity diagram for "Complete the survey"

3.2.4 Verify the details
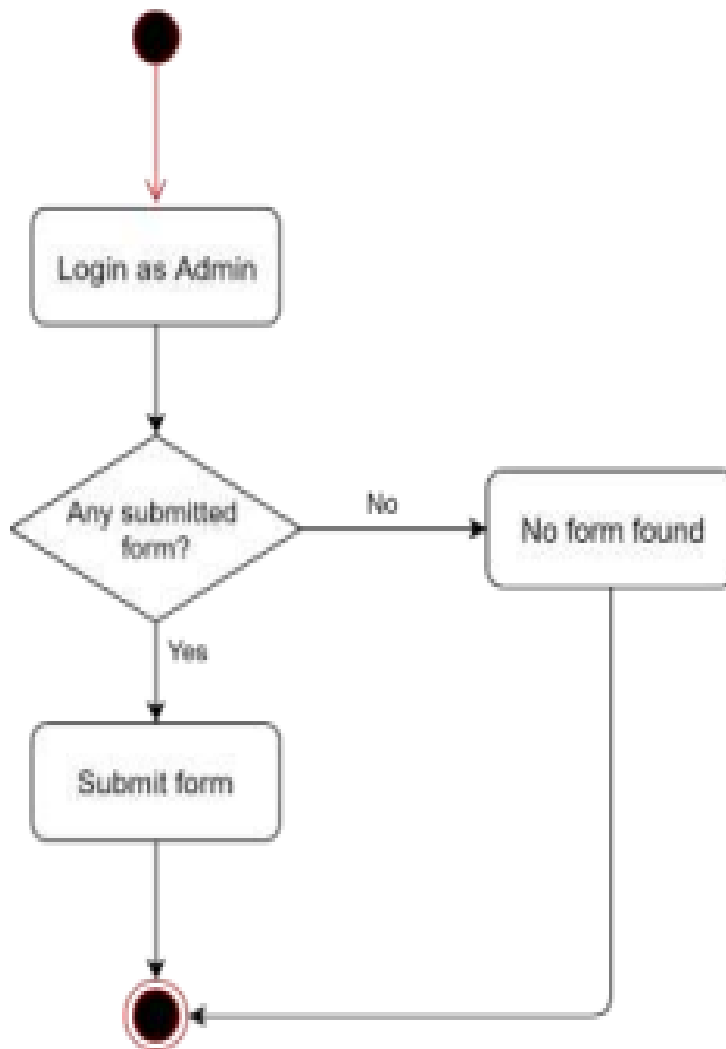
Figure 3.2.4: Activity diagram for "Verify the details"

3.2.5 Approve/Reject Census form
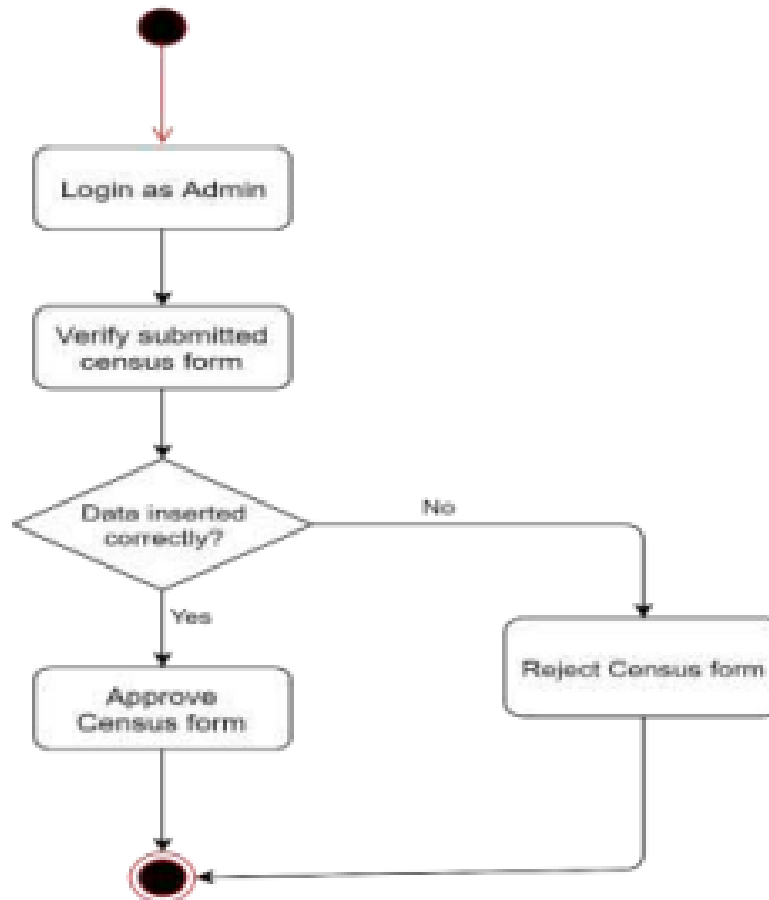
Figure 3.2.5: Activity diagram for "Approve/Reject Census form"

3.2.6 Modify Information
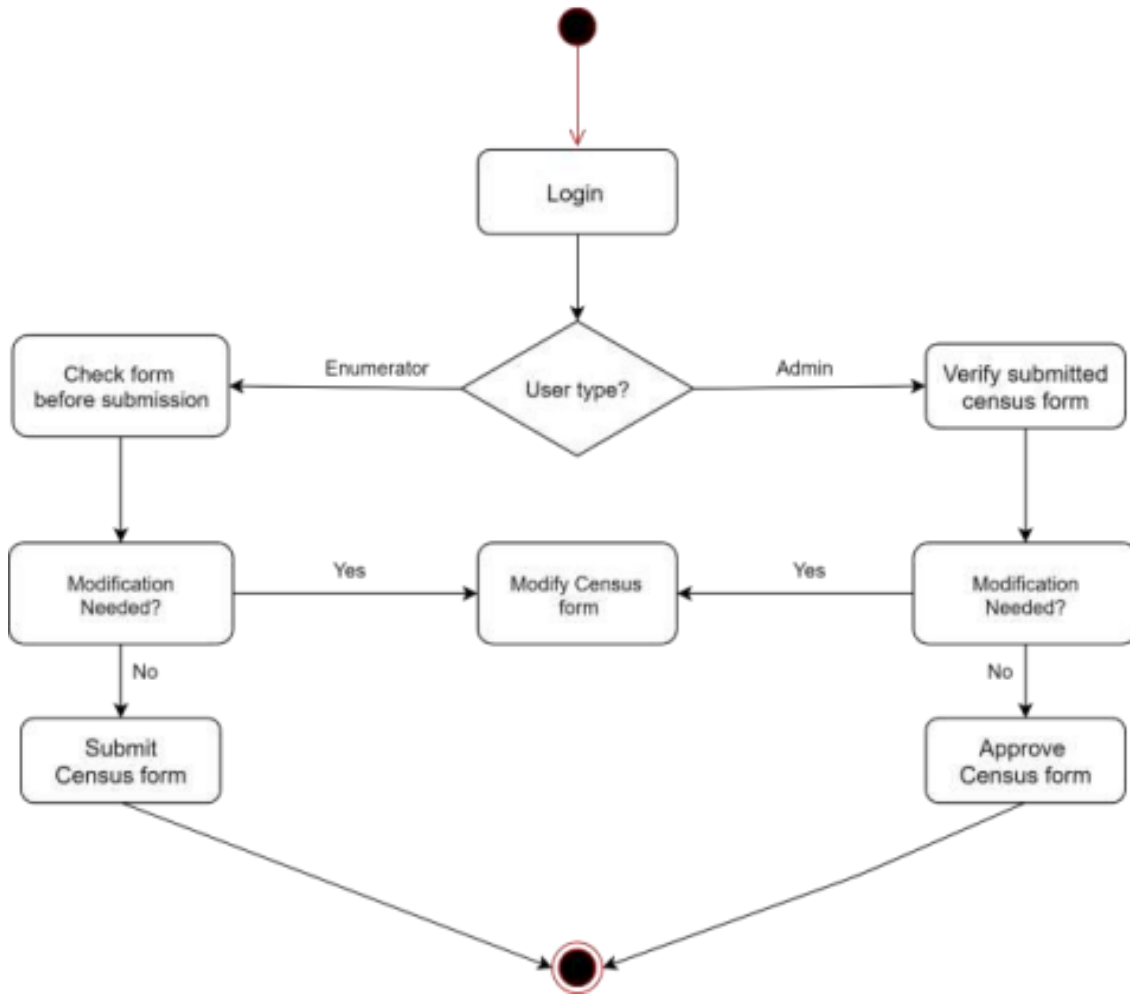
Figure   3.2.6: Activity diagram for "Modify Information"

3.2.7: Generate Census report
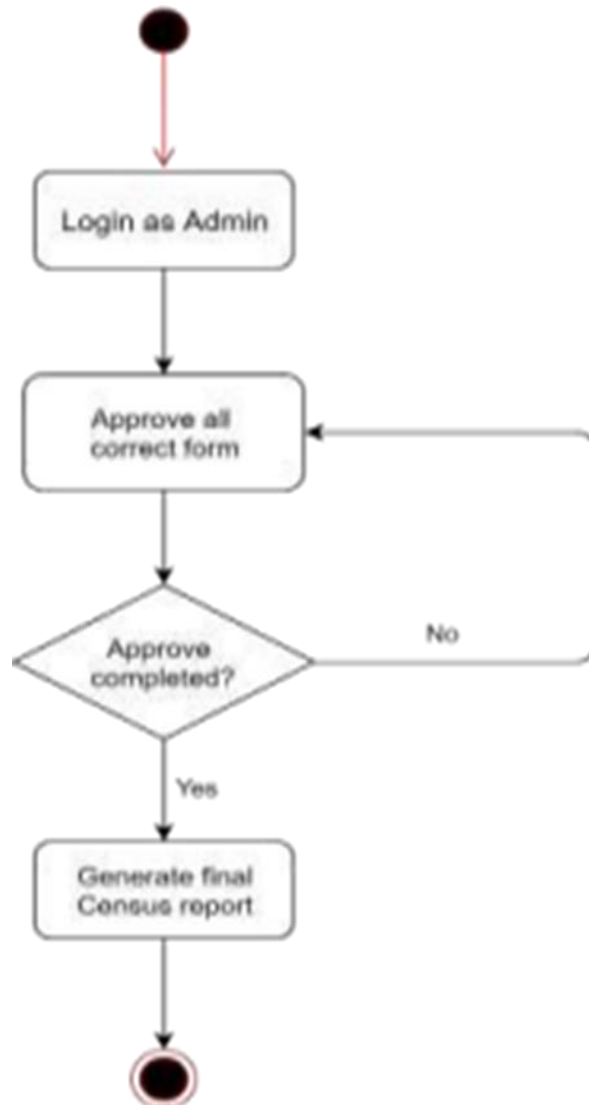
Figure 3.2.7: Activity diagram for "Generate Census report"

3.2.8 View Census report
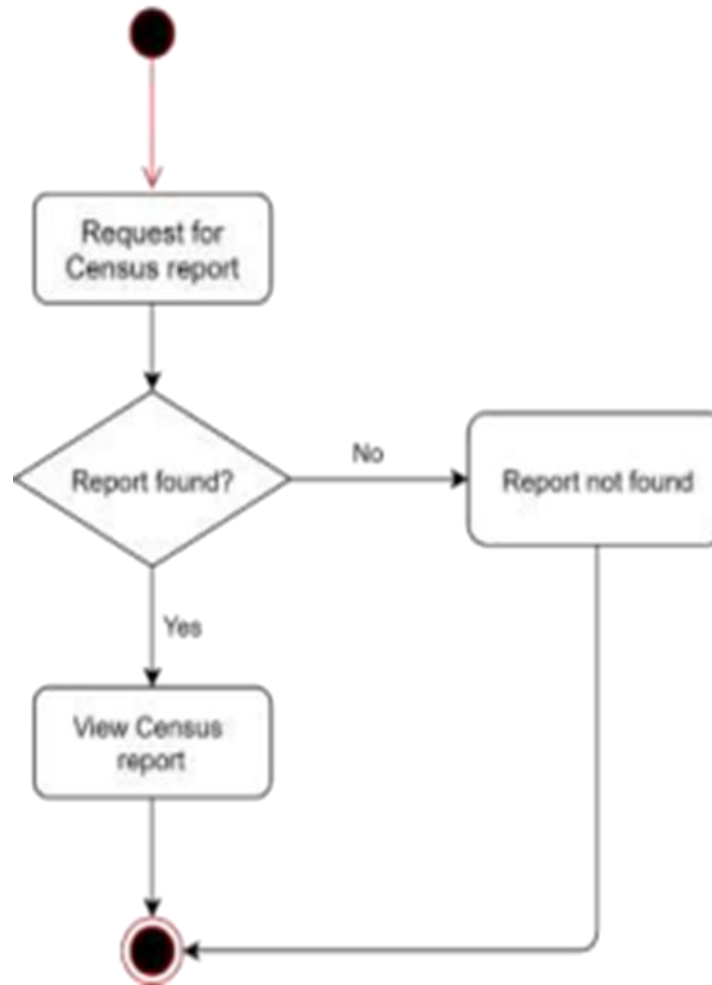
Figure 3.2.8: Activity diagram for "View Census report"

3.3 Sequence Diagram
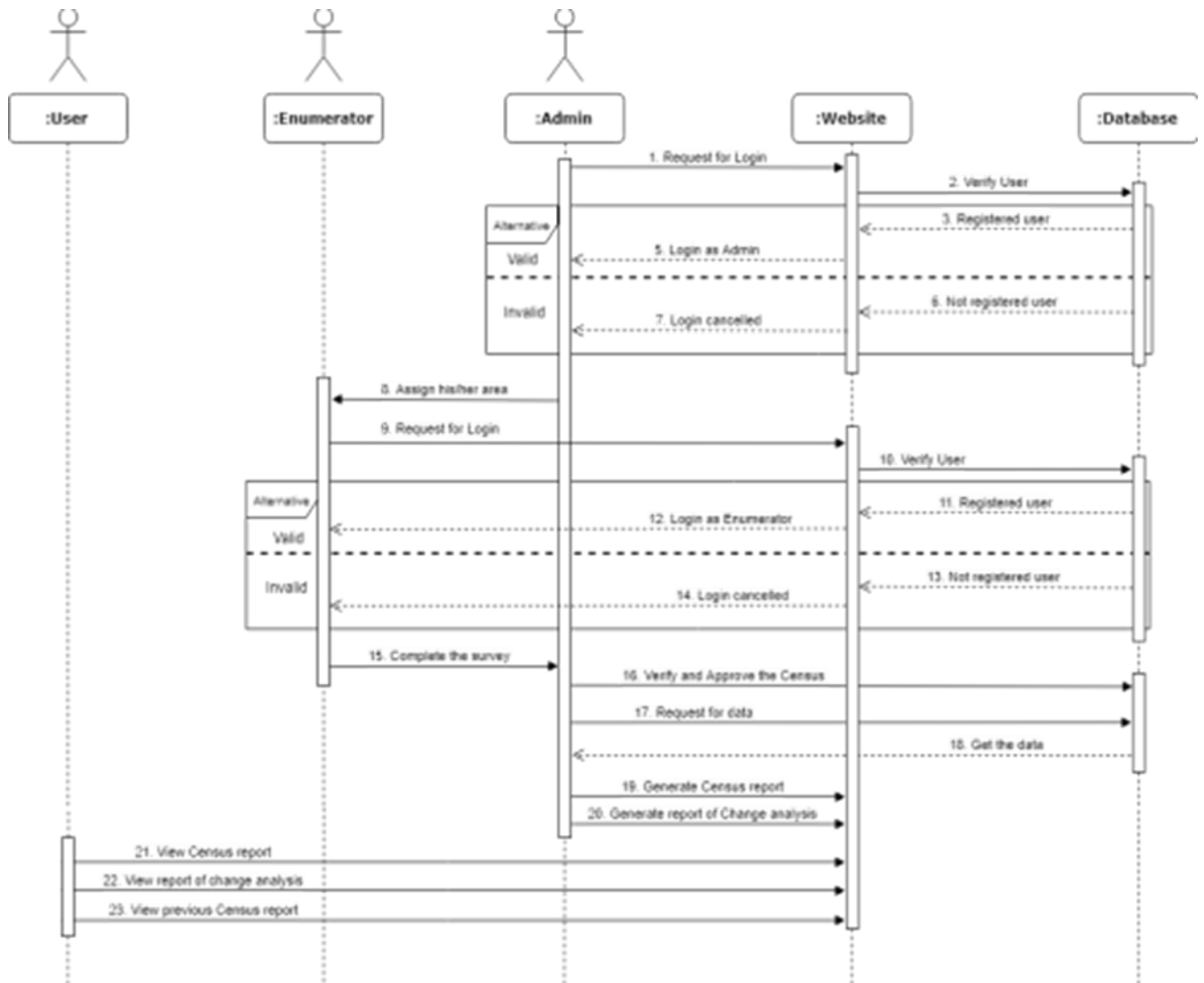
Figure 3.3: Sequence diagram for "Census BD"

Chapter 4

System Design Specification

4.1: Development tools and technology

Development tools can be programming tools, software development tool, debugging tool, etc. Software development tools are developed by experts and it's used to develop software. There are too many different types of development tools and technology can be found to make the process of software development very easy and smooth. We are going to use some tools and technology to build our system and that is below:

4.1.1: User Interface Technology

In software development, user interface refers to visual part of the software. User interface is designed into an information device and a person may interact with it. The ultimate goal of user interface is engaged the user into the system. A better user interface makes an application easy, efficient, and enjoyable. So, it's important to makes the UI better for better user engaged .

4.1.1.1: CSS

CSS is stands for "Cascading Style Sheets". CSS is a style sheet language that is described, how HTML elements will be displayed. You may think CSS with a human body, where human bone is HTML and when you add HTML and CSS together then it's become actual human body. Basically, there are three types of CSS developer used that are Inline CSS, Internal CSS, and External CSS. Using external CSS is good practice for a developer. Sometimes in a single portion inline CSS are used.

4.1.1.2: Bootstrap

Bootstrap is a free and open-source CSS framework. For responsive web site and web application design, it's a superb framework. It contains CSS and JavaScript-based design template. Bootstrap is browser friendly framework and it's supports almost every well-known browser. The responsive layout of devices with a variety of screen size can be getting into the bootstrap.

4.1.1.3: Programming Language

Programming language is an essential part of building any application. A programming language is a formal language. It's would be better to choose the programming language which is appropriate with your application. Choosing the right language can make the processing part smooth and give better performance. In our project, there are two part one is web another is mobile based. And for the web part, we use PHP for the back-end server side. PHP stands for "Hypertext Preprocessor". PHP is a general-purpose programming language originally designed for development. For the mobile part, we used Java in the back-end side. Java is also a general-purpose programming language that is class-based. Both of them are open source language.

4.1.2: Implemented tools and platform

Beside the choosing programming language there is also need to select some tools for developing software. You have to analyzing which tools and platform is appropriate with your system because there are so many tools and technology into the planate. So, finding the best tools that are good fit with your system is a task.

4.1.2.1: Code Editor

A code editor or any IDE is must for developed any application system. A source-code editor is a text editor program that is designed specifically for editing source code. Editor is a fundamental programming tool. For my project I'm going to use the code editor that is called "Sublime Text". Sublime text is a cross-platform source code editor and it can

be used for free. It has some grate feature such as multi-select editing, Auto completion, Syntax highlight, etc.
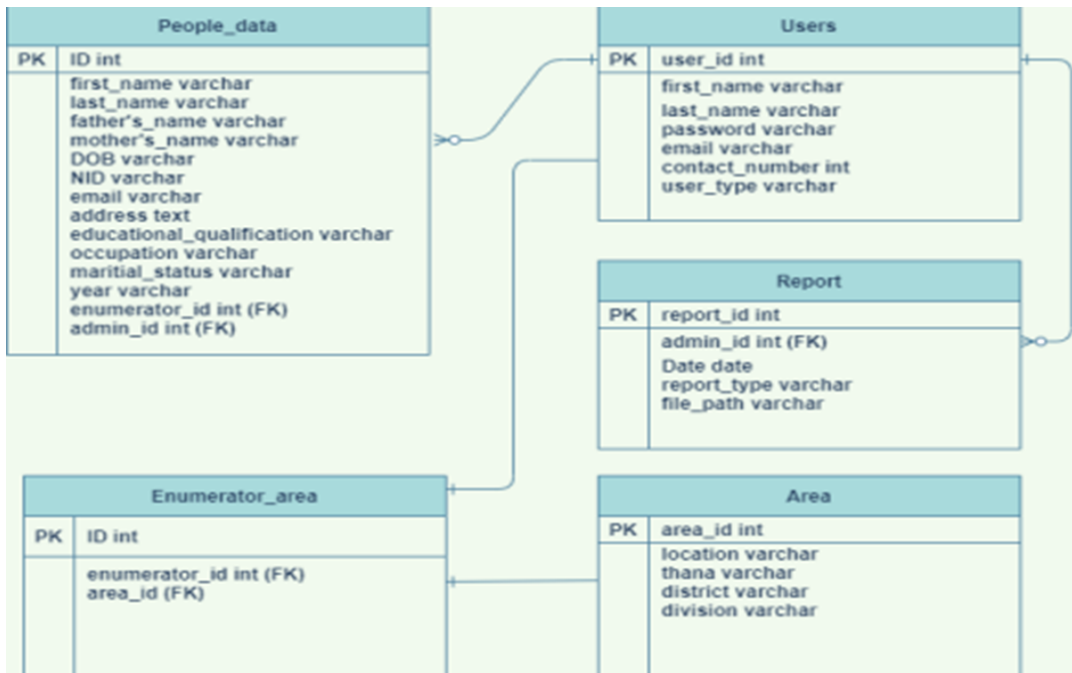
4.1.2.2: Web Server

A Web server is a program that uses Hypertext Transfer Protocol to serve the files that form Web pages to users. For our project we are used apache HTTP Server. It's free and open-source cross-platform web server software. Apache is developed and maintained by an open community of developers.
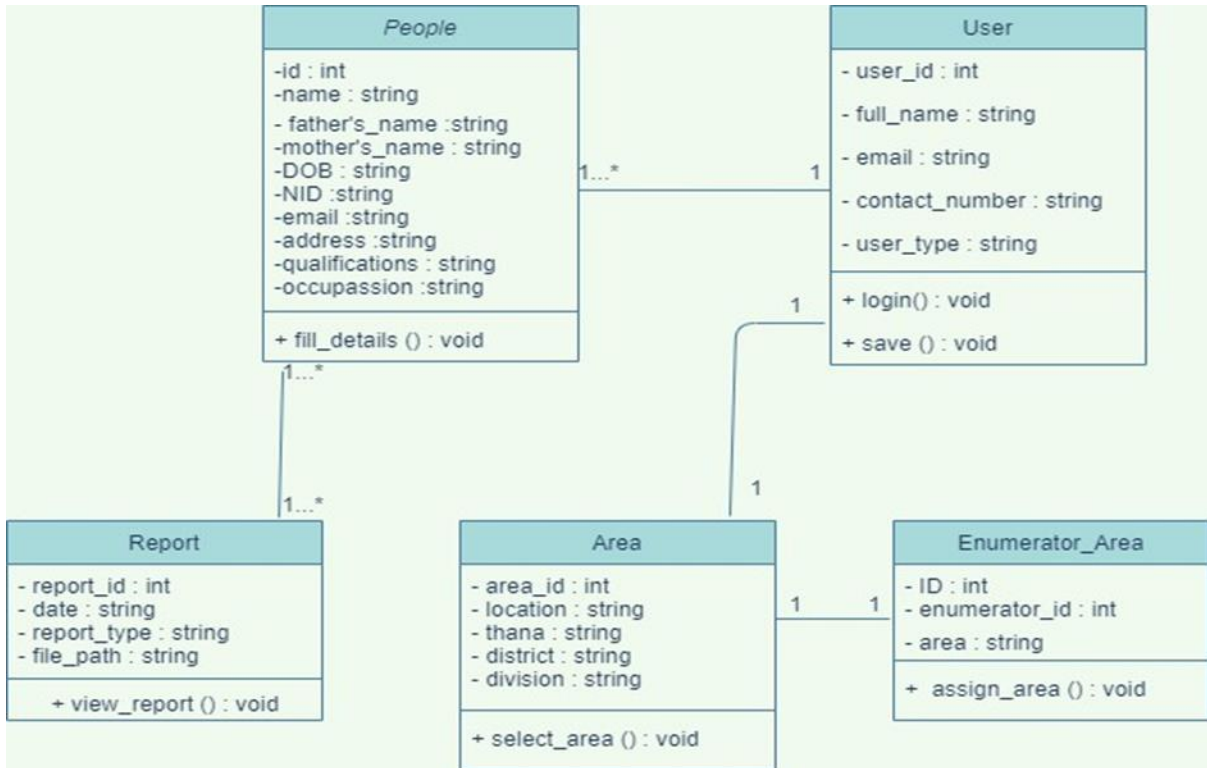
4.1.2.3: Database Server

Database server is referred to the back-end system of a database application using client/server architecture. We are decided to using Relational Database Management System. There are many Relation Database but we are choosing the MySQL Relation database. MySQL have some great feature. MySQL is free and open-source software. MySQL is used by many database-driven web applications.

4.2: Sequence Diagram

4.3: Class Diagram

People *(class)*
- -id : int
- -name : string
- - father's_name :string
- -mother's_name : string
- -DOB : string
- -NID :string
- -email :string
- -address :string
- -qualifications : string
- -occupassion :string
- + fill_details () : void

User
- - user_id : int
- - full_name : string
- - email : string
- - contact_number : string
- - user_type : string
- + login() : void
- + save () : void

1...* ———— 1

Report
- - report_id : int
- - date : string
- - report_type : string
- - file_path : string
- + view_report () : void

1...*
1...*

Area
- - area_id : int
- - location : string
- - thana : string
- - district : string
- - division : string
- + select_area () : void

Enumerator_Area
- - ID : int
- - enumerator_id : int
- - area : string
- + assign_area () : void

1 ———— 1

Chapter – 5

User Manual

5.1: Registration

5.2 : Login

5.3: Admin panel

5.4 Approved Census

5.5: Pending Census

5.6: Rejected Census

5.7: Census Form

CHAPTER 6

SUMMARY AND CONCLUSION

6.1: Project Summary

We started working on this project in January. To fulfill the expectations of stakeholders, this project has required hard effort, patience, and perseverance from the beginning. Following that, we offered a design. Then we got down to work.

Any application software relies heavily on databases. As a result, we created a database diagram with tables that have suitable relationships. Following that, we developed the user interface and obtained their approval before progressing on to the next step. It should be noted that our application's user interface is quite clear and simple. We then began writing the project's core functionality when that was completed.

Actually, completing a project is not the end of the process. There are a few more essential activities to complete. And that is what testing is all about. It's also referred to as quality control. Almost every piece of software

6.2: Limitations

During building this project, I've faced some limitations. Those are:

 • Only web version: I have only web version of my project. But there are also some other operating systems Android or iOS. But we have not developed our mobile applications for those versions.

• Enumerator tracking: Till now there is no tracking system for the enumerators that they are working properly or not.

6.3: Obstacles and Achievements

We think that if there are no hurdles in the way of a project's development, then there are no problems. Because we all know that challenges allow us to demonstrate our worth. Obstacles, difficulties, and accomplishments all serve as stepping stones to success.

We had no idea how the software development life cycle worked before we started this project. We learned how to get a row need from clients while working on this project.

Following that, I learned system analysis, database design, and a number of other skills. My supervisor has been really helpful to me since the beginning of this project's growth. There are some other obstacles and achievements also that I will describe below.

• Lack of Stakeholder's Engagement: There are different types of stakeholders in our application. And each stakeholder uses different functionality. And almost they are busy with their day to day activities. So, this is why, I didn't get all of them in proper time.

• Scope Change: Sometimes, some features need to be changed or modified. Then I need to follow reverse engineering process. And again, designed to meet the new requirements. It also made me frustrated sometimes.

6.4 Future Scope

I have learnt a lot throughout the whole development stage of this project. For making this project developed, I have also met some young entrepreneurs and enthusiasts also. I am very much thankful to all of them as their idea and discussion gave me some opportunities to make my product complete. It will help me to work with similar type project in future also.

APPENDIX

Appendix A: Related Issues

To complete this work, we faced some complicated issues. Our primary responsibility is to collect data and store it in the appropriate location. Also, to ensure that the entire process takes less time. When everything is time-sensitive, people are less likely to provide complete data, and we lose a lot of time as a consequence. Then we decided to build a census form that is totally digital by selecting an option based on data collection in order to fully fill out the census form. Then, after gathering the data, we establish a MySQL server to submit it. We also have other challenges, such as the requirements to sequence our collected data in order to apply the algorithm.

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