



Daffodil
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CENSUS BD

A WEB APPLICATION FOR CENSUS SYSTEM IN BANGLADESH

Prepared by:

Md. Tanvir Zaman

ID: 152-35-1160

B.Sc. in Software Engineering

Daffodil International University

Supervised by:

Md. Hasan Sharif

Lecturer

Department of Software Engineering

Daffodil International University

Letter of Approval

APPROVAL

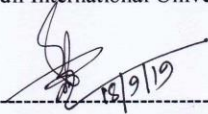
This **Project/Thesis** titled “**Census BD**”, submitted by **Md. Tanvir Zaman, 152-35-1160** to the Department of Software Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Software Engineering and approved as to its style and contents.

BOARD OF EXAMINERS

Dr. Touhid Bhuiyan
Professor and Head

Department of Software Engineering
Faculty of Science and Information Technology
Daffodil International University

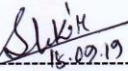
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Assistant Professor

Department of Software Engineering
Faculty of Science and Information Technology
Daffodil International University


Internal Examiner 1



Asif Khan Shakir
Lecturer

Department of Software Engineering
Faculty of Science and Information Technology
Daffodil International University

Internal Examiner 2



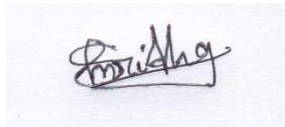
Dr. Md. Nasim Akhtar
Professor

Department of Computer Science and Engineering
Faculty of Electrical and Electronic Engineering
Dhaka University of Engineering & Technology, Gazipur

External Examiner

DECLARATION

I hereby declare that, this project has been done by me under the supervision of **Md. Hasan Sharif, Lecturer, Department of Software Engineering, Daffodil International University**. I also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.



Md. Tanvir Zaman

ID: 152-35-1160

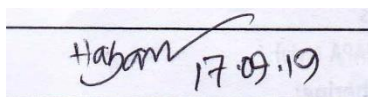
Batch: 17th

Department of Software Engineering

Faculty of Science & Information Technology

Daffodil International University

Certified by:



Md. Hasan Sharif

Lecturer

Department of Software Engineering

Faculty of Science & Information Technology

Daffodil International University

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From the past 4 years till today, I have learned from the very basic of software engineering to the advance terms of software engineering along with many more things of computer science from this department. I have tried to apply all my software engineering knowledge in this project and I have tried to give my level best to complete this project successfully.

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Chapter 1
Introduction

1.1: Project Overview:

We all are the people of technological era. Now a days, we can't think our life without technology. From morning to night, we almost always depend on technology directly or partially.

But, till now many working systems are running manually. Census process in Bangladesh is one of them. This system is still now depended on pen and paper process. In this era of technology, it is not expected and acceptable. And this process is very lengthy and also there is the possibility of data losing as it is a pen and paper process. Beside this, it is very hard to find old data from the archive. And it is hard to maintain the data too.

So, I came up with this idea of "Census BD" where the whole process can be done automatically. Then the system will no longer be time consuming and there will be no security issue. Finding old data will be easier and the maintenance will be easier.

1.2: Project Purpose

The main aim of developing the census BD web project is to allow easier coordination of activities from the beginning of the census process up to the end of the process. Till now a day, the whole process of census is done manually with pen and paper. This process is not a convenient one and there is also the risk of losing data. By this project, I want to automate the whole process, allowing the Ministry of Planning to monitor the population statistics online. It is meant also to facilitate the management of population via the web for enhanced management and efficiency.

1.2.1: Project Background

I felt that, doing census process manually is a problem for our country. So, I wanted to make a web based automated system where the whole census system from to report generation and maintenance 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 Goals

The main goal of this project is to make a web-based application for census management in Bangladesh. This is by automating the whole census process, allowing Bangladesh Bureau of Statistics to monitor the population statistics online.

1.3: Stakeholders

There are three stakeholders in my system “Census BD”. And they are:

- Enumerator
- Admin
- General citizen

Enumerator: Enumerator is a primary stakeholder of this system. The enumerators will complete the survey by completing the questionnaires in the census form. After successfully completing the census form, the enumerator will submit the form to the system for further checking. Enumerator can modify the form before submitting if needed.

Admin: Admin is also a primary stakeholder of this system. Admin will assign an enumerator his/her working area. If an enumerator submits a form, admin will check it carefully and then approve/reject the submitted form. Admin can also modify a form if needed.

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

1.5: Project Schedule:

To complete a project successfully, a proper project schedule is needed to be ready at first. It tells which work needs to be done with time frame. It also helps to deliver a project on time. Here is my project schedule:

1.5.1: Gantt Chart

Gantt chart is a production control tool. To develop a software, Gantt chart is a mostly used thing. It reminds us to complete a task within a certain period of time. Below is the Gantt chart of my project:

| Activities | | M1 H1 | M1 H2 | M2 H1 | M2 H2 | M3 H1 | M3 H2 | M4 H1 | M4 H2 | M5 H1 | M5 H2 | M6 H1 | M6 H2 | M7 H1 | M7 H2 |
|----------------|------------------------------|----------|----------|----------|------------|----------|----------|----------|----------|----------|----------|-------------|----------|----------|----------|
| Planning | Ideas | █ | | | | | | | | | | | | | |
| | Problem definition | █ | █ | | | | | | | | | | | | |
| | Proposal planning | | █ | █ | | | | | | | | | | | |
| Requirements | Requirement specification | | | █ | █ | | | | | | | | | | |
| | Requirement analysis | | | | | █ | █ | | | | | | | | |
| QA-1 | Quality assurance | | | | | | █ | █ | | | | | | | |
| System design | Sketching | | | | | | | █ | █ | | | | | | |
| | Design specification | | | | | | | █ | █ | | | | | | |
| | Database design | | | | | | | █ | █ | | | | | | |
| Implementation | Guide Module (Web) | | | | | | | █ | █ | | | | █ | █ | |
| | Admin Module (Web) | | | | | | | | █ | █ | | | █ | █ | |
| | Traveler Module (Mobile app) | | | | | | | █ | █ | | | | █ | █ | |
| QA-2 | Test cases | | | | | | | █ | █ | | | | | | |
| Testing | Unit testing | | | | | | | █ | | █ | █ | | | █ | |
| | Black box testing | | | | | | | | █ | █ | █ | | | █ | |
| Delivery | Software release | | | | | | | | | | | | | | █ |
| Scheduled Time | | █ | | | | | | | | | | | | | |
| Buffered Time | | | | | | | | | █ | █ | | | | █ | |
| M | Month | H1 | | | First Half | | | | H2 | | | Second Half | | | |

Fig 1.1: Gantt Chart

1.5.2: Release Plan or Milestone

| Activities | Duration in Half Month (15 days) | Total Month |
|------------------------------|---|--------------------|
| 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 |
| Design specification | Month-4 Half-1, Month-4 Half-2 | 1 |
| Database design | Month-4 Half-2 | .5 |
| Guide Module (Web) | Month-4 Half-2, Month-5 Half-1, Month-6 Half-2, | 1.5 |
| Admin Module (Web) | Month-5 Half-1, Month-5 Half-2, Month-6 Half-2, | 1.5 |
| Traveler Module (Mobile app) | Month-4 Half-2, Month-5 Half-1, Month-5 Half-2, Month-6 Half-2, | 2 |
| Test cases | Month-4 Half-2, Month-5 Half-1, | 1 |
| Unit testing | Month-4 Half-2, Month-5 Half-2, Month-6 Half-1, Month-7 Half-1 | 2 |
| Black box testing | Month-5 Half-1, Month-5 Half-2, Month-6 Half-1, Month-7 Half-1 | 2 |
| Software release | Month-7 Half-2 | .5 |

Chapter 2

Software Requirement Specification

2.1: Functional Requirements

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

2.1.1: Admin Registration

| | | | |
|---------------------|---|-----------------|------|
| FR-1 | Admin Registration | | |
| Description | Admin 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 admin facilities. | | |
| Stakeholders | Admin | Priority | High |

2.1.2: Admin Login

| | | | |
|---------------------|---|-----------------|------|
| FR-2 | Admin Login | | |
| Description | After successful registration, Admin will login to the system using email and 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 can login to the system using email and 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 house to house 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 build the system model. For my project, I need to focus on some point such as:

- Types of entity of 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 my system, I 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 this system, speed and performance will 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 term dependability is measured on four items. 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 | <ul style="list-style-type: none"> • Our system must be available all day long, every day in a week • The system must be updated regularly • System must be malware free | | |
| Stakeholders | N/A | Priority | Medium |

2.4.2: Robustness or Fault-Tolerance Requirements

| | | | |
|---------------------|---|-----------------|------|
| RFT-1 | The system handles all user access without system errors | | |
| Description | Hundreds of users may hit our application system at a time. All their requests must be handled without any fault. | | |
| Stakeholders | N/A | Priority | High |

2.5: Maintainability and Supportability 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 | System helps to update user profile |
| Description | It is very important to update user profile. |
| Stakeholders | Admin |

2.5.2: Supportability Requirements

Supportability requirements may have related to some extends, such as:

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

This application meets all the above requirements related to supportability.

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. Software security requirements should be its functional requirement. Software security enforces security of an application system. Functionality related to software security can either be directly tested or observed. Some security related requirements are given below:

- Signing in an enumerator and admin
- Get access according to logged in user
- Complete census survey without having any issue
- Signing out an enumerator and admin
- Handling encrypted passwords

While accessing to the system, each and every module must provide a central authentication mechanism. There is also a process to prevent entering into the system by ensuring hashed password for the unauthenticated users.

2.6.1: Access Requirements

For accessing to our application system, there remains some authentication and authorization techniques. And every module of our system will provide it. Now I will provide an explanation below.

| | |
|---------------------|---|
| AR-1 | Application provides security mechanism. |
| Description | Every module is designed in such a way that it only gives access to the authorized and authenticated users. |
| Stakeholders | Admin, Enumerator |

2.6.2: Integrity Requirements

Integrity requirements refers to a security system which ensures an expectation of data quality. It also ensures that all data of the system would never be exposed to the malicious modification or accidental destruction. For that reason, we will store our user passwords as encrypted format which is impossible to decrypt. It is also called hashed password.

2.6.3: Privacy Requirements

It is very important to ensure privacy of the system users. Privacy requirements enhances to protect stakeholder's privacy. In this way, all data or a partial part of data are going to be disclosed according to system's privacy policy. To ensure privacy, the central database should be protected by the anonymous. Users are permitted to get access to those data which are being associated by them which can be ensured by the user log in system.

2.7: Usability and Human-Interaction Requirements

The main target of developing any system is to make the system user friendly and easy to usable 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: Personalization and Internationalization Requirements

In this project there is no personalization and internationalization requirements. This version of this project will only be used in Bangladesh.

2.7.3: Understandability and Politeness Requirements

The system I'm 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 be 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: Accessibility Requirements

There are no such accessibility requirements regarding this system.

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 house to house 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

Traffic police and all other user must know which input fields are required and which are not. For that reason, we will use labels for all input fields. Input fields might be text type, radio, checkbox, spinner etc.

| | | | |
|---------------------|--|-----------------|--------|
| AR-1 | Labels of mandatory fields must be identified. | | |
| Description | The mandatory field's label must be identified and all input fields must have placeholder to make it easier for the users. | | |
| Stakeholders | Enumerators | Priority | Medium |

2.8.2: Style Requirements

| | | | |
|---------------------|--|-----------------|--------|
| SR-1 | The appearance must be controllable using stylesheet file. | | |
| Description | For android application stylesheet files are xml. So, all stylesheet must be controllable by the xml file. | | |
| Stakeholders | Software developer. | Priority | Medium |

2.9: Operational and Environmental Requirements

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

There no such expected physical requirements for my system.

2.9.2: Requirements for Interfacing with Adjacent Systems

There are no requirements for interfacing with adjacent system for my system.

2.9.3: Release Requirements

There are no specific release requirements for this system.

2.10: Legal Requirements

Legal requirements usually refer to the terms and conditions or privacy policy of any organizations. The terms and condition of application is that, no third-party software or person are allowed to involve to use our information for their commercial purpose.

2.10.1: Compliance Requirements

There are no specific compliance requirements for this system.

2.10.2: Standards Requirements

There are no specific standards requirements for this system.

Chapter 3

Requirement Analysis

3.1: Use case diagram

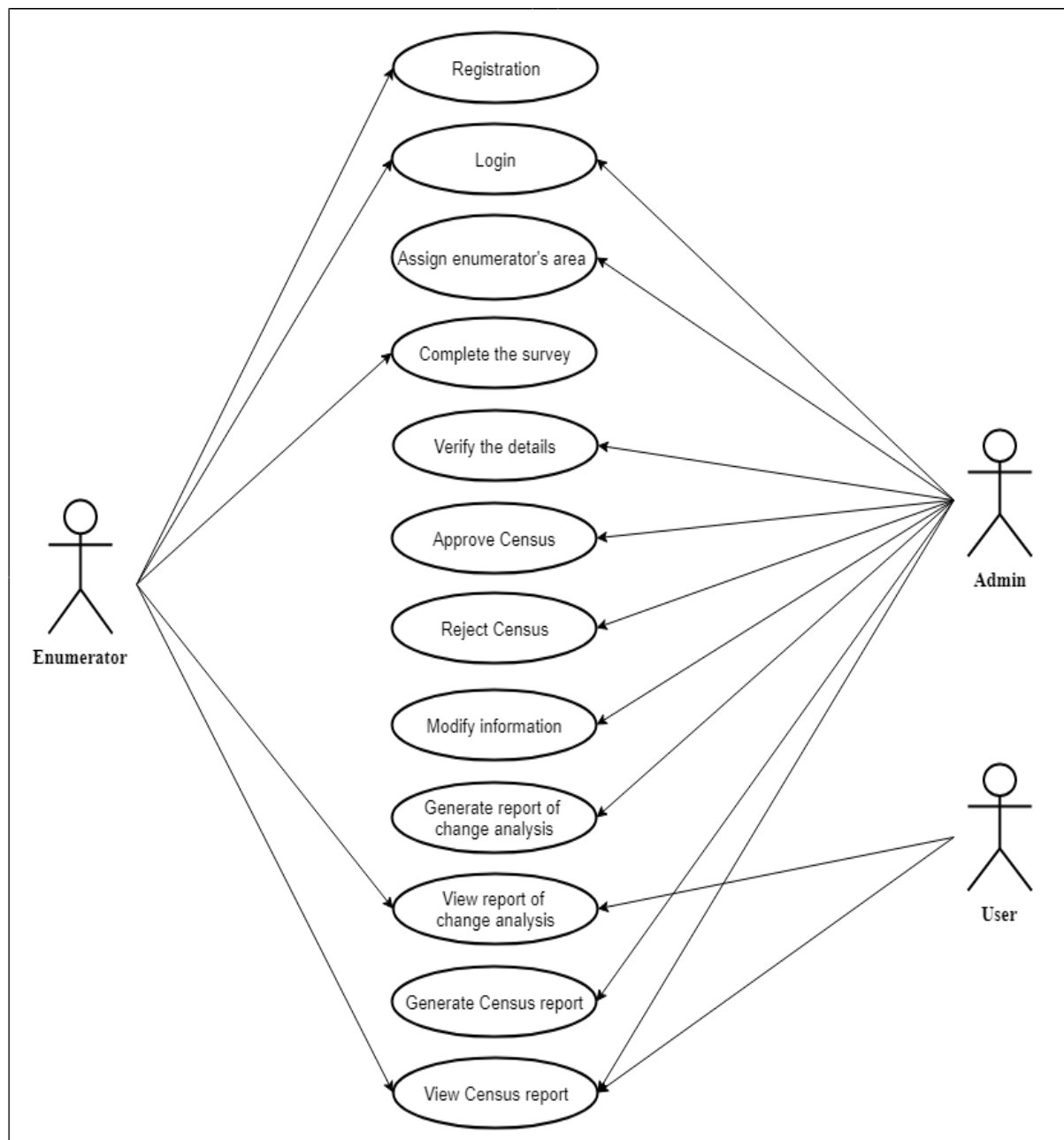


Figure 3.1: Use case diagram for 'Census BD'

3.1.1: Registration

| | | |
|--|--|---|
| Use Case Title | Registration | |
| Goal | <ul style="list-style-type: none"> Admin and Enumerator must be registered into the system. | |
| Preconditions | <ul style="list-style-type: none"> 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 | |
| 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 | <ul style="list-style-type: none"> Admin and Enumerator must be logged into the system. | |
| Preconditions | <ul style="list-style-type: none"> 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 Main Success Scenario | Step | Action |
| | 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 | <ul style="list-style-type: none"> • Enumerator will complete the survey | |
| Preconditions | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> Admin will verify the details of submitted form | |
| Preconditions | <ul style="list-style-type: none"> 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 |
| Quality Requirements | Step | Requirements |
| | | N/A |

3.1.5: Approve Census

| | | |
|--|--|--------------------------------------|
| Use Case Title | Approve Census | |
| Goal | <ul style="list-style-type: none"> Admin will approve the census form | |
| Preconditions | <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> Admin will reject the census form | |
| Preconditions | <ul style="list-style-type: none"> 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 Main Success Scenario | Step | Action |
| | 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 | <ul style="list-style-type: none"> • Admin can modify the census information • Enumerator can modify the information before submission | |
| Preconditions | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> Admin will generate a final census report | |
| Preconditions | <ul style="list-style-type: none"> 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 |
| Quality Requirements | Step | Requirements |
| | | N/A |

3.1.9: View Census Report

| | | |
|--|--|-----------------------------|
| Use Case Title | View Census Report | |
| Goal | <ul style="list-style-type: none"> Everyone can view the final census report | |
| Preconditions | <ul style="list-style-type: none"> 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 |
| | | N/A |

3.2: Activity Diagram

I have prepared some activity diagram for my project. These activity diagrams are properly referring the flow of the individual conditions of my project.

3.2.1 Registration

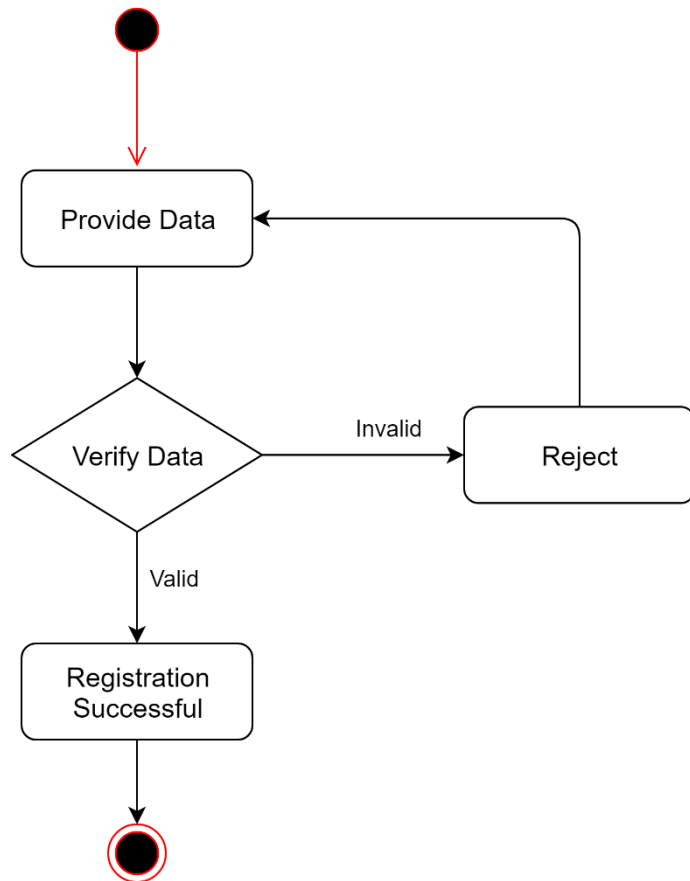


Figure 3.2.1: Activity diagram for “Registration”

3.2.2: Login

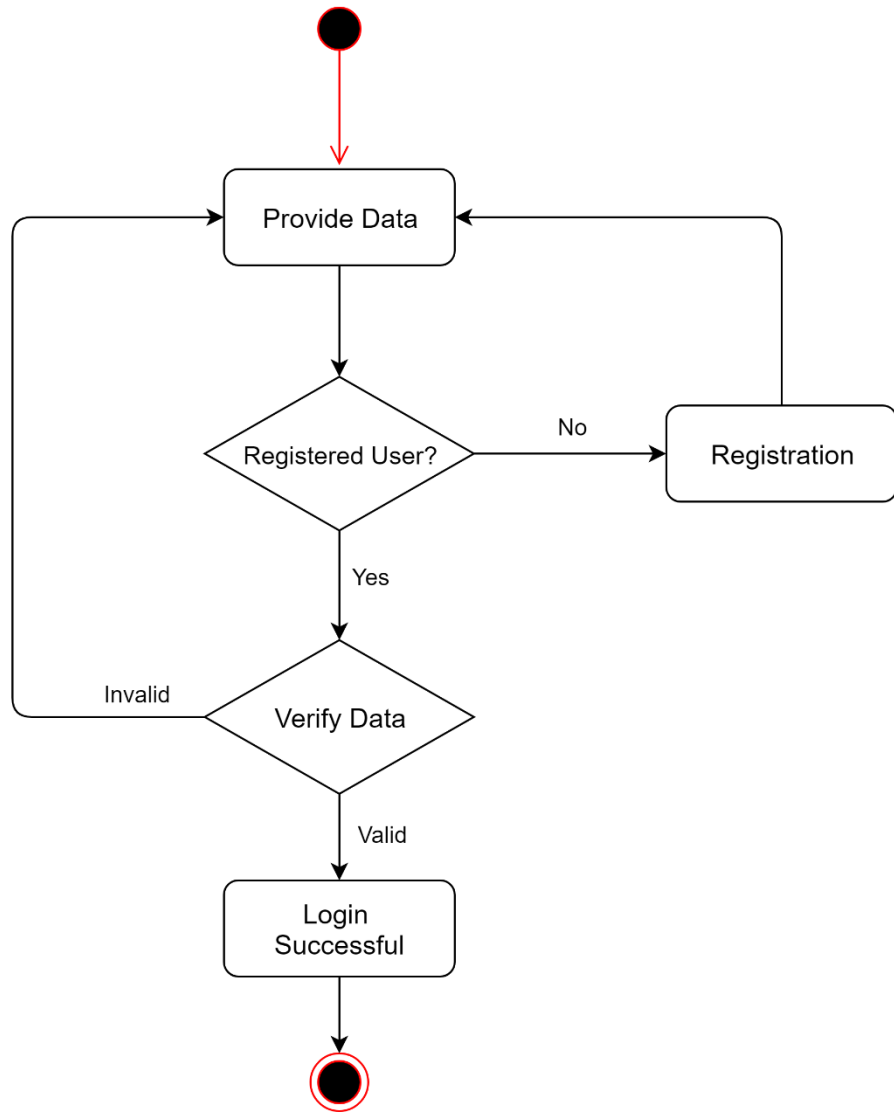


Figure 3.2.2: Activity diagram for “Login”

3.2.3: Complete the survey

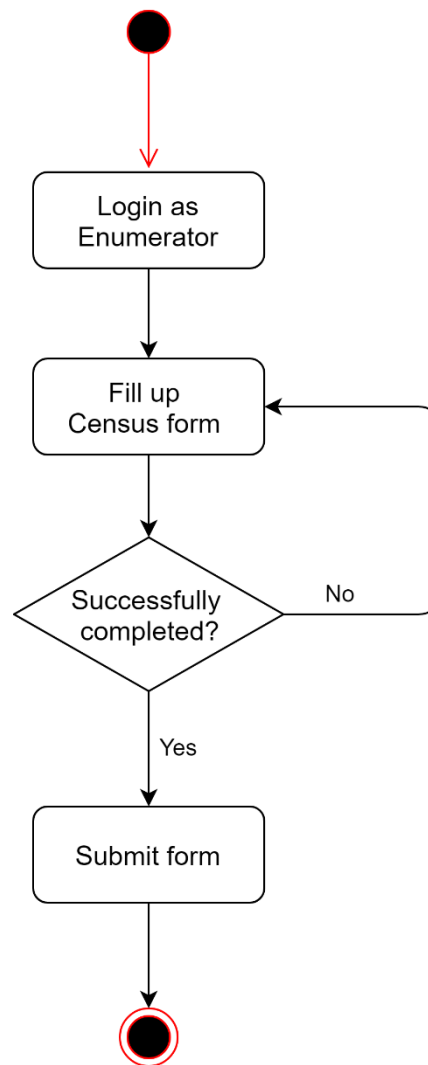


Figure 3.2.3: Activity diagram for “Complete the survey”

3.2.4: Verify the details

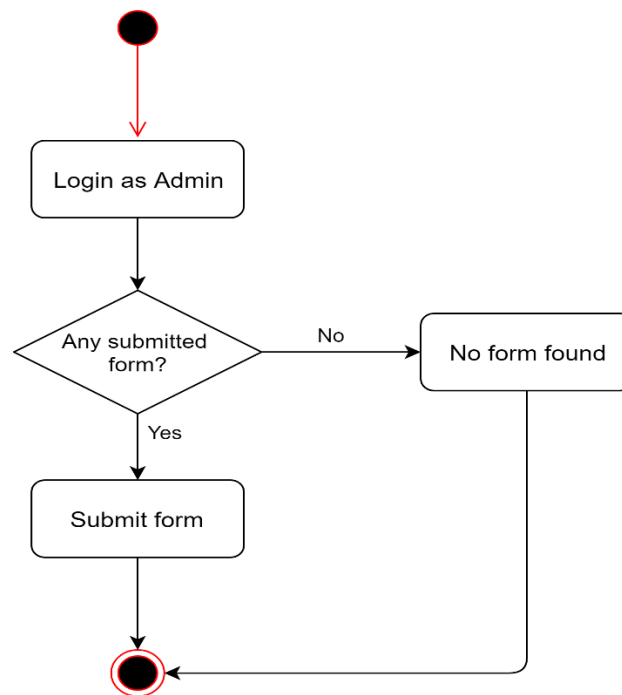


Figure 3.2.4: Activity diagram for “Verify the details”

3.2.5: Approve/Reject Census form:

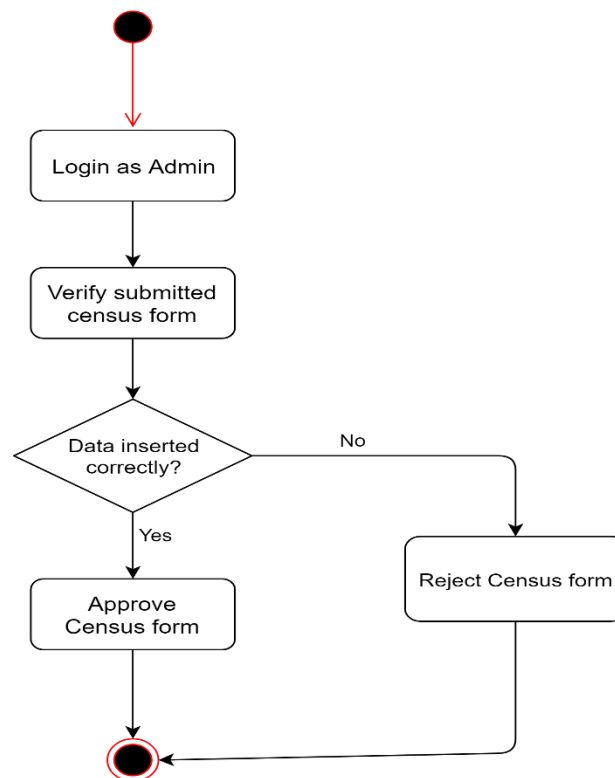


Figure 3.2.5: Activity diagram for “Approve/Reject Census form”

3.2.6: Modify Information

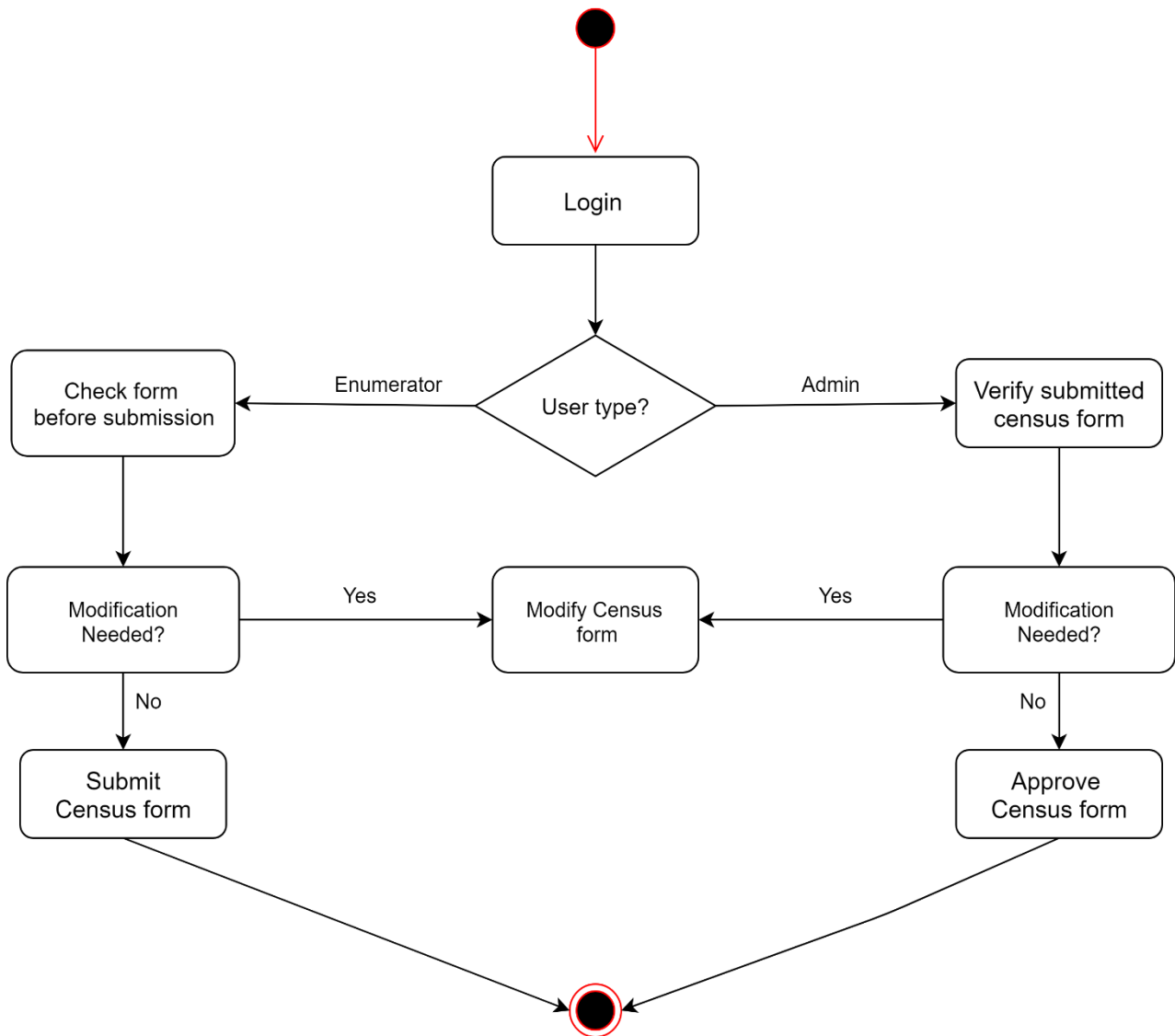


Figure 3.2.6: Activity diagram for “Modify Information”

3.2.7: Generate Census report

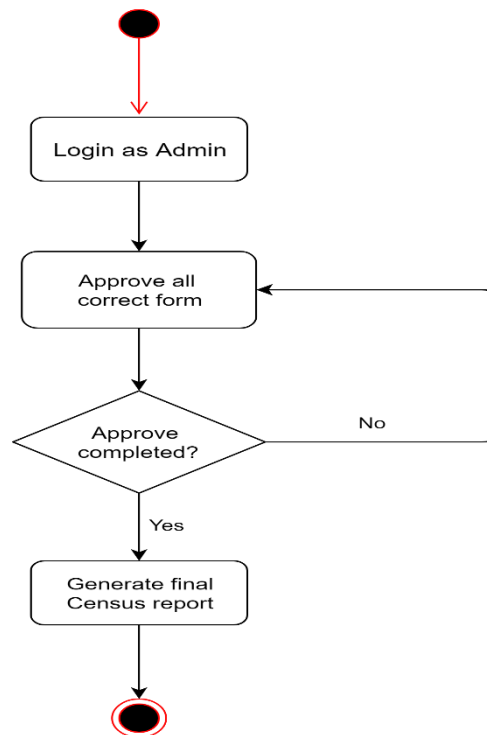


Figure 3.2.7: Activity diagram for “Generate Census report”

3.2.8: View Census report

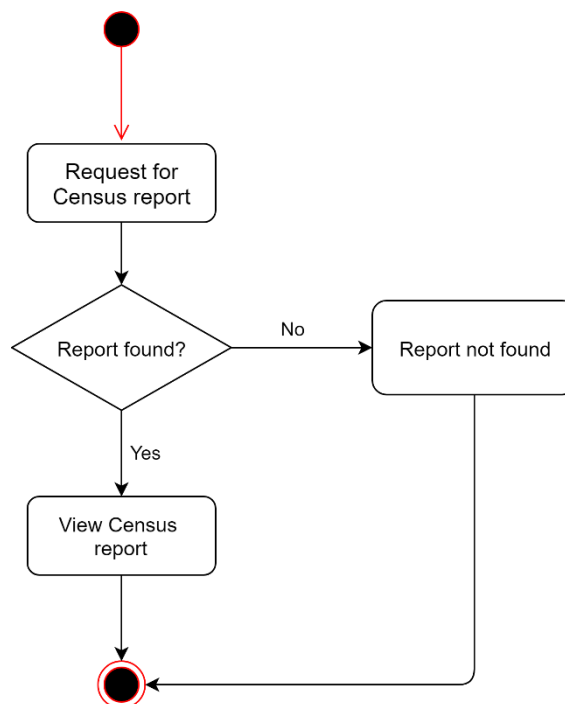


Figure 3.2.8: Activity diagram for “View Census report”

3.3 Sequence Diagram

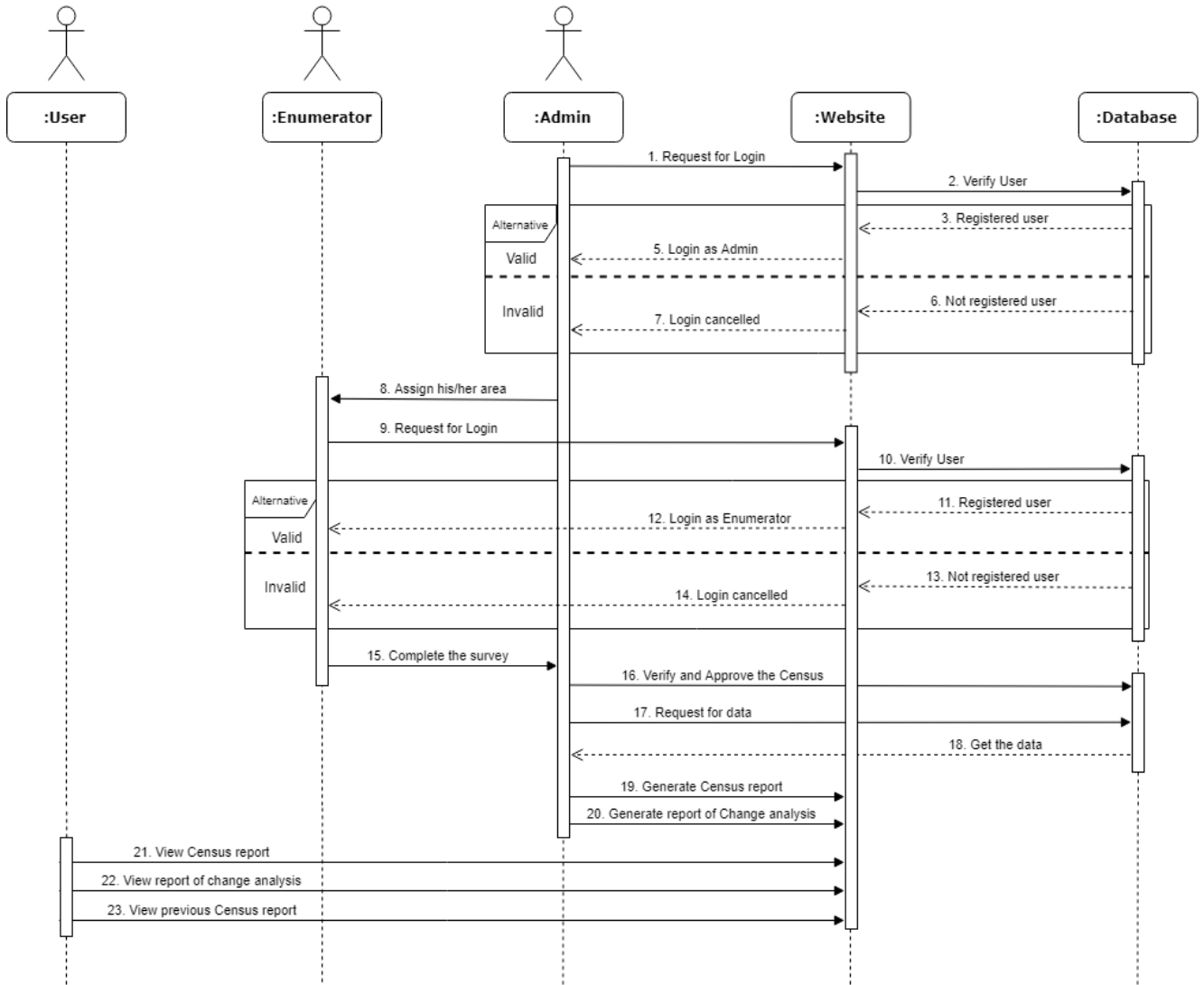


Figure 3.3: Sequence diagram for “Census BD”

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 thin 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: Database Design Diagram

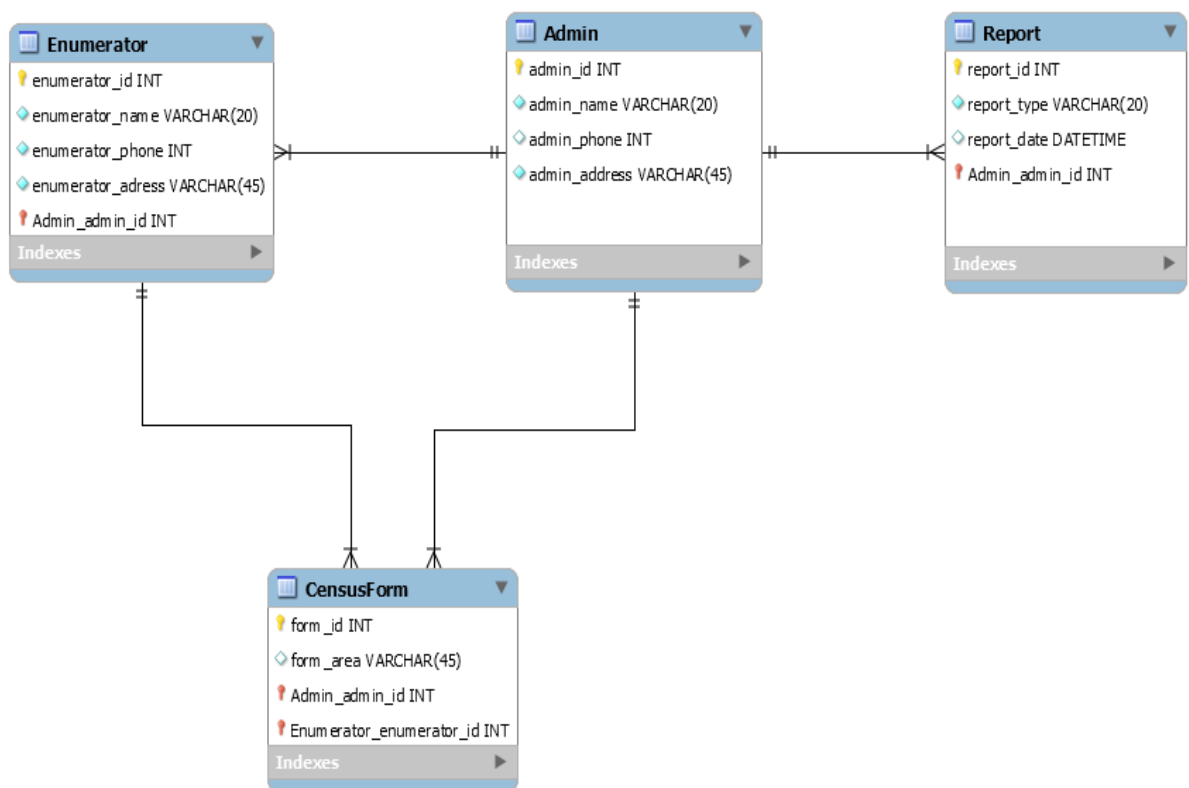


Figure 4.2.1: Database Design Diagram for "Census BD"

Chapter 6
User Manual

6.1: Registration

REGISTRATION HERE

×


Full Name :

Email Address :

Password :

6.2: Login

Login Panel



User Name

Password

6.3: Admin panel

Bangladesh Bureau of Statistics Asif Mridha

Home

Census

Enumerator

CensusApprove

Graph

Dashboard

Form Census Census Pending Census Approved Census Remove

Report Graph Enumerator Users Settings

6.4: Admin profile

Bangladesh Bureau of Statistics Asif Mridha


Home

Census

Enumerator

CensusApprove

Graph



[Picture Edit](#)

Personal Profile

Name : Asif Mridha
Email Address : nas@gmail.com
Profile Slogan : Think Positive, Do Something Different
Profile Message : Asif Mridha is a punctual, responsibility, trusted, self-dependent & motivated person. who is able to new challenging work environment quickly, friendly communication and co-operation each other and very careful for the transaction. Finally, I try to do, what I say. I am seeking a trusted, responsibility, competitive and challenging environment, Where I can fully use my knowledge skills for the success of the organization.

[Profile Edit](#)

6.5: Admin profile update

Update Information ✕

Full Name :

Email Address :

Profile Slogan :

Profile Message :

Asif Mridha is a punctual, responsible, trusted, self-dependent & motivated person who is able to new challenging work environment quickly, friendly communication and co-operation each other and very careful for the transaction. Finally, I try to do, what I say. I am seeking a trusted, responsibility, competitive and challenging environment, where I can fully use my knowledge skills for the success of the organization.

Update

Close

6.6: Approved Census

Bangladesh Bureau of Statistics
Asif Mridha

- Home
- Census
- Enumerator
- Census Approve
- Graph

#

Pending
 Approved
 Remove

← →

+ Add Census Form

| No | Household Address | Members | Current | Abroad | Details |
|----|-------------------------------|---------|---------|--------|--|
| 1 | Sukabad, dhanmondi, dhaka... | 3 | | | Details Status |
| 2 | sukrabad, dhanmondi, dhaka... | 3 | 3 | | Details Status |
| 3 | 5/4, sukrabad, Rangpur-165... | 4 | 7 | 1 | Details Status |
| 4 | 4/5 sukrabad, Dhanmondi, D... | 2 | 1 | | Details Status |
| 5 | 5/3 Noor Villa,Sukrabad, D... | 6 | 3 | 3 | Details Status |
| 6 | Sukrabad, Dhanmondi, Dhaka... | 2 | 4 | 3 | Details Status |
| 7 | Sukrabad, Dhanmondi, Dhaka... | 2 | 4 | 3 | Details Status |

Showing 8 Entries

6.7: Pending Census

Bangladesh Bureau of Statistics Asif Mridha

Home | Census | Enumerator | Census Approve | Graph

⚠ Pending | ✅ Approved | ❌ Remove

Census Pending + Add Census Form

| No | Household Address | Members | Current | Abroad | Details |
|----|-------------------------------|---------|---------|--------|--|
| 1 | 23/4, elephen rood, damrai... | 10 | 4 | 3 | Details Status |
| 2 | Sukrabad, Dhanmondi, Dhaka... | 4 | 2 | 3 | Details Status |
| 3 | Fulbari, Monohardi, Norsin... | 6 | 1 | 4 | Details Status |

Showing 3 Entries

6.8: Rejected Census

Bangladesh Bureau of Statistics Asif Mridha

Home | Census | Enumerator | Census Approve | Graph

⚠ Pending | ✅ Approved | ❌ Remove

Census Remove + Add Census Form

| No | Household Address | Members | Current | Abroad | Details |
|----|-------------------------------|---------|---------|--------|--|
| 1 | 23/1, rampur, chittagong | 10 | 2 | | Details Status |
| 2 | 5/3, subahanbag, Dhanmondi... | 3 | 2 | 2 | Details Status |

Showing 2 Entries

6.9: Census Form

Bangladesh Bureau of Statistics Acif Mridha

Bangladesh Bureau of Statistics Sample Census 1 of 11

Module 1: Identification and Household Summary

Household Address : **Year :**

| | | | | | |
|--|---|---------------|---|-----------------|---|
| Members usually living in the HH : | <input type="text" value="Choose Total"/> | Male : | <input type="text" value="Male Total"/> | Female : | <input type="text" value="Female Total"/> |
| Members usually living in the HH but currently absent : | <input type="text" value="Choose Total"/> | Male : | <input type="text" value="Male Total"/> | Female : | <input type="text" value="Female Total"/> |
| Members usually living in the HH now living abroad : | <input type="text" value="Choose Total"/> | Male : | <input type="text" value="Male Total"/> | Female : | <input type="text" value="Female Total"/> |
| Visitors : | <input type="text" value="Choose Total"/> | Male : | <input type="text" value="Male Total"/> | Female : | <input type="text" value="Female Total"/> |
| Members of the HH that returned from abroad in the 5 past years : | <input type="text" value="Choose Total"/> | Male : | <input type="text" value="Male Total"/> | Female : | <input type="text" value="Female Total"/> |

[Next →](#)

[Home](#)[Census](#)[Enumerator](#)[CensusApprove](#)[Graph](#)

Chapter 7
Conclusion

7.1: Project Summary

I have started to develop this project from January. From the very starting of development of this project, it demands hard working, patients, persistency to meet the requirements of stakeholders. After that I have proposed the design. And then started to work.

Database plays a vital role for any application software. And so, this is why, I have designed the database diagram having tables with proper relationship. After that, I have prepared the user interface and take their approval to continue to the next part. It is to be said that, the interface of my application is very simple and easy to understand. After completing that, I have started to write the core functionality of the project.

Developing project is not end of all tasks actually. There are some other important tasks to perform. And that is testing. It is also known as quality assurance also. Almost at every software company there are a quality assurance team. Their main responsibility is to find the loop holes or vulnerability of software. If there any bug remains before handover to the stakeholders, there is a change to ruin the whole project. So, testing plan is very important. And after developing the project, I have assured the quality of this project.

7.2: Limitations:

During developing 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.

7.3: Obstacles and Achievements

I believe that if there are not any obstacles to develop a project, then there doesn't have any challenges. Because we know, challenge give us the opportunity to prove ourselves. Obstacles, challenges and achievements are like a path to the success.

Before starting this project, I didn't know the actual flow of software development life cycle. By developing this project, I have learnt to know how to have a row requirement from clients. After that I have learnt system analysis, database design and many things. My supervisor helps me a lot from the very beginning of the development of this project.

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.

7.4 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.

