"বসবাস-বাতায়ন"

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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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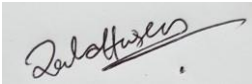
DHAKA, BANGLADESH

APPROVAL

This Project titled **"বসবাস-বাতায়ন"**, submitted by Amit Roy, ID No: 171-15-9197, Snigdha Roy, ID No: 171-15-9148, Jobayer Al Mahmud Ahad, ID No: 171-15-9061 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 27.01.2021.

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DECLARATION

We hereby declare that, this project has been done by us under the supervision of **Nusrat Jahan, Lecturer, 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 or diploma.

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ABSTRACT

"বসবাস-বাতায়ন" is the first online platform for the Bangladesh people where their living information are recorded. There is a security issues to live in an area. It is important to store house-owner and their tenant's information for security purpose. There is no online platform like our application which solve this problem. **"বসবাস-বাতায়ন"** is a solution for the citizen to send their problems and get the solution. This will helpful both of house-owner and the tenants to judge each other. This website application helps the police to control their area easily and they will not need to collect the information in physically. Our website is user friendly so that user will use this application with comfortable.

TABLE OF CONTENTS

CHAPTER 1

INTRODUCTION

1.1 Introduction

The developed countries of the world have brought their citizens under an online system. Its purpose is to provide security to every citizen. Attempts are being made in our country to bring citizens online but it has not been done properly yet. In our country, especially in the cities, landlords and tenants are registered, but not in rural areas. As a result, the security of the citizens is being jeopardized. For this we are going to create a system that can give every homeowner and tenant an online platform and provide them security. This allows the country's law enforcement to monitor the movements of owners and tenants**.**

1.2 Motivation

Police are often searched from house to house for criminal suspicion. As a result, the general public is harassed. But on the other hand, the criminals went to a safe place after hearing the news of the search. As a result, the search and police administration also failed. This situation was created with us in 2019.We always thought that we must do something which is helpful for society. Then we thought after that situation, If the administration conducts a search by targeting some people or their home, then it is possible to identify the culprits in a short time. As a result, we won't be harassed by the authority anymore. The most important part is that every area can be sorted out with renters and owners so that any pandemic situation like covid19, the administration can easily list the renters and record their movements.

1.3 Objective

Every development project is built up according to some objectives which help to solve some problems or issues. The main objective of our project is about collecting and monitoring tenant and house-owner.

- The tenant or owner registration form will be digitized.
- The concerned authority may at any time extract the information of the tenant or owner.
- You do not have to register again to change your home every time.
- Police will able to control their respective area.

1.4 Expected Outcomes

- No harassment for registration.
- Save time.
- Centralization all information of tenant or owner.
- Monitoring.
- Short time investigation.

1.5 Project management and finance

Every project needs a proper plan first. The first step is to select a project. Then plan how the project will be handled. We all come up with a plan for our project and. Three of our team members are divided into three tasks. One has created a project-framework, other has handled coding part of the project, and another one has created a project-report. But we helped each other to finish every single part. For this journey basically we didn't need huge financial help truly. When finished project will be running, there will be needed some financial cost for the server. Now we are using firebase server-system so that we can use 10GB storage free of cost.

1.6 Report Layout

1. In Chapter 1, we discussed about this project idea and why we want to build up this project. Here we also mentioned what is the motive of this project.

2. In Chapter 2, we discussed some related project like this project and the challenges what we faced. We also discussed why our project is better than others.

3. In Chapter 3, we discussed about Business Process Model to represent the structure of our project. Here we also mentioned the use case diagram of our project.

4. In Chapter 4, we discussed about the design specification of our project and the framework and tools we used.

5. In Chapter 5, we discussed about Implementation of Database and testing.

6. In Chapter 6, we discussed what is the impact on society through our project.

7. In Chapter 7, it is conclusion and here we discussed what is the future.

CHAPTER 2

BACKGROUND

2.1 Introduction

In this section, we will cover to discuss some related works which are already running. We will also discuss some of past projects feature and their limitations. We will also discuss why our project is better and efficient. Here we will figure out our challenges which we faced and also discuss how we overcame our problems.

2.2 Related works

There are some implementation projects is running for tenant and owner information. "VARATIA-FORM" is the most using project in this sector. There is also an android app named "CIMS" which is built up in 2019 but this system is not popular to everyone. There is no relationship among owner and tenant information. This app is not updated properly. So, I think our website is the best solution and solve most of the problem which is not solve in other application or project.

2.3 Comparative Analysis

In Dhaka city police collect the information of owner and tenant with this "VARATIAFORM". But this system is too much lengthy processes and it is not efficient way. Most of the time this form can be missed from police-station. As a result, many information's are missed out. For tenant side, they have to fill up every time when they shift one house to another which is the most annoying part for them. "CIMS" which is not popular to everyone. There is no relationship among owner and tenant information when they collect the data. This app is not updated properly. So, I think our website is the best solution and solve most of the problem which is not solved by other application or project. We have built our application according to our user's demand.

2.4 Scope of the problem

Our project mainly maintains and collects a lot of information from owner and tenant. Initially we are using firebase server which gives us 10GB storage free. So now there will be no problem occurred. But when we apply our project vastly, there are many information are gathered in our server and at that time 10GB can't cover up. That time we will need a server which may be costly.

2.5 Challenges

Making a project with the latest technology is our main goal. So, after planning our project we have to learn a lot of things which was not an easy task to us but hardworking of every team member, we are able to fight this problem and has built a web application with latest framework and database.

CHAPTER 3

REQUIREMENT SPECIFICATION

3.1 Business Process Modeling

Every project has a Business Process Model to represent the structure of business flow and it is helpful to finish the project on a right way. With the help of BPMN, we can easily finish our project.
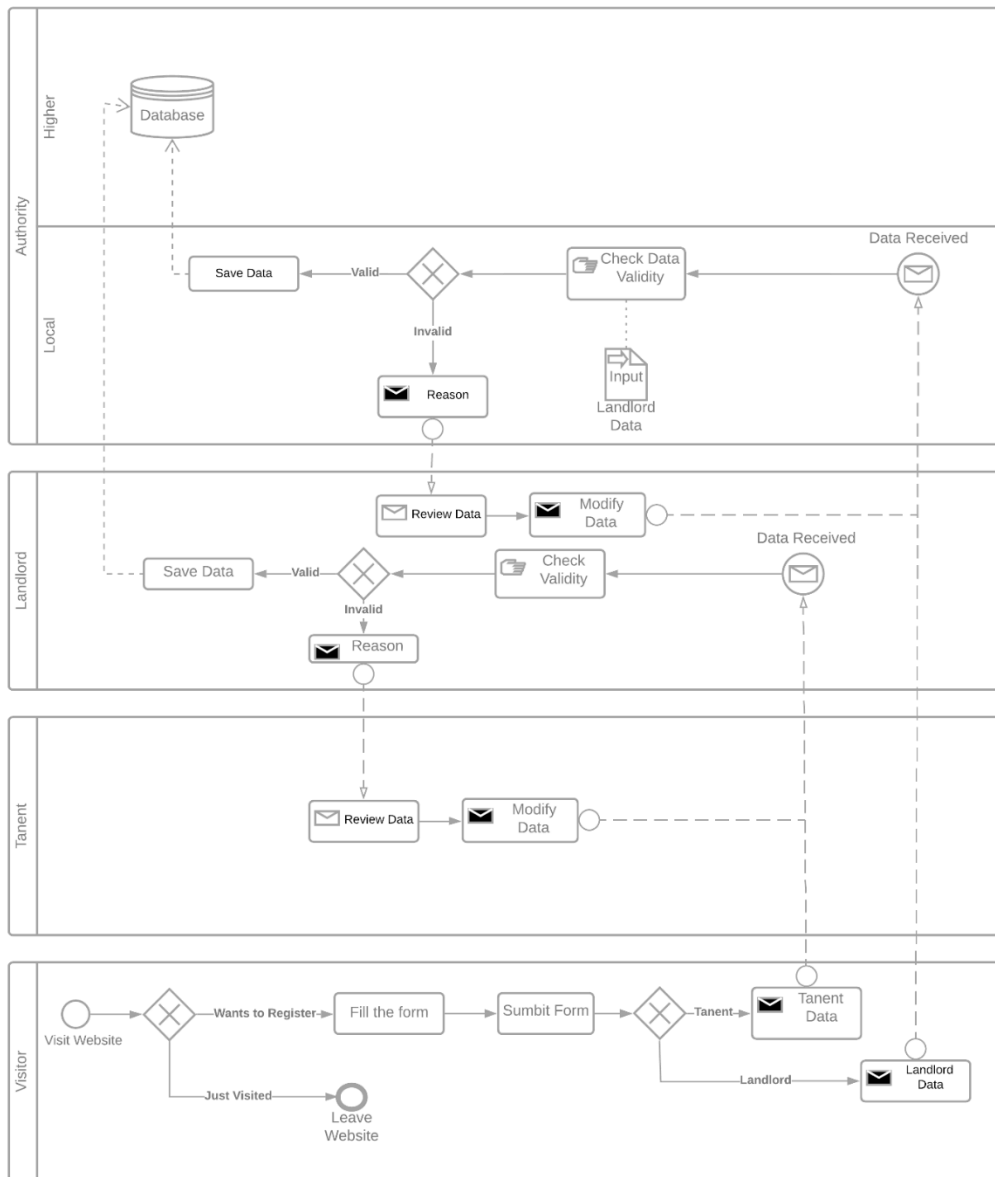

Fig: Business Process Model

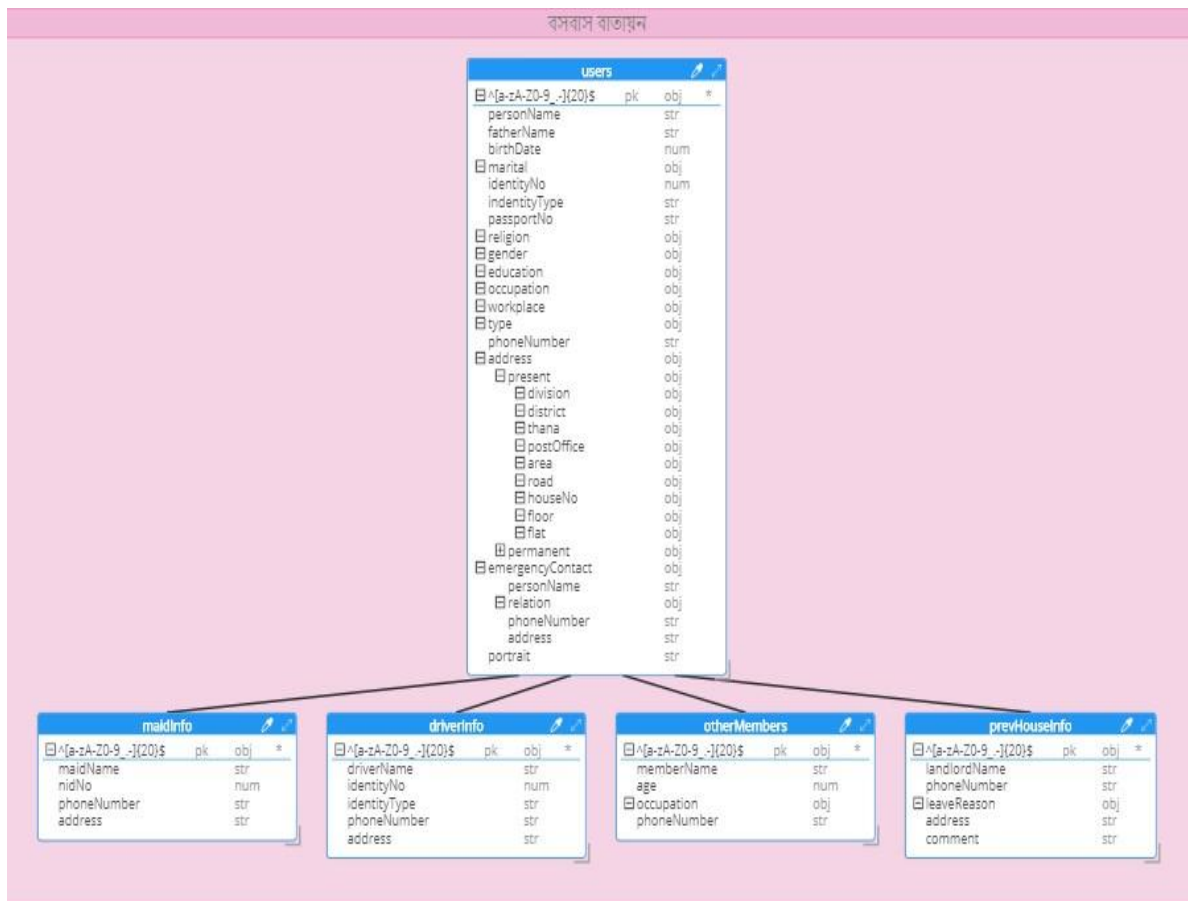## 3.2 Logical Data Model

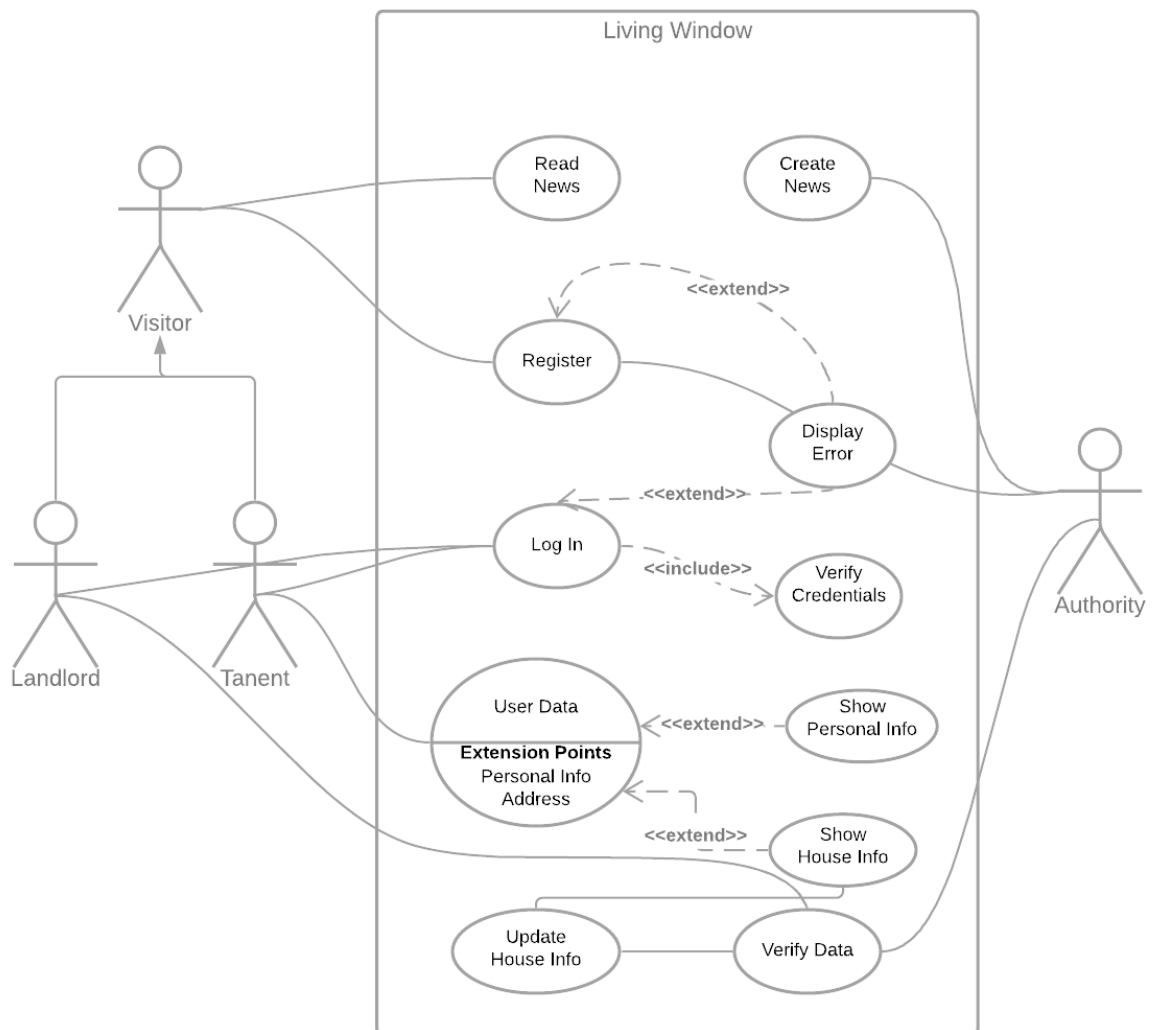Fig: Logical Data Model

3.3 Use-Case Diagram

Fig: Use-case Diagram

3.4 Design Requirement

<u>Figma</u>: Vector graphics editor and prototyping tool for initial design of the website.

<u>React</u>: JavaScript library for building user interfaces that we designed on Figma.

CHAPTER 4

DESIGN SPECIFICATION

4.1 Front-end Design

Framework: React.

React: React (also known as React.js or ReactJS) is an open-source, front end, JavaScript library for building user interfaces or UI components. It is maintained by Facebook and a community of individual developers and companies.

UI library: Material-UI, React Select

Material-UI: Most popular React components for faster and easier web development. React Select: A flexible and beautiful Select Input control for ReactJS with multiselect, autocomplete, async and creatable support.

Form Validation: React Hook Form, Yup

React Hook Form: Performant, flexible and extensible forms with easy-to-use validation.

Yup: Yup is a JavaScript schema builder for value parsing and validation. Define a schema, transform a value to match, validate the shape of an existing value, or both.

App Management: Redux, Redux Thunk, React Router DOM

Redux: Redux is an open-source JavaScript library for managing application state. Redux Thunk: Redux Thunk middleware allows you to write action creators that return a function instead of an action.

React Router DOM: It is a collection of navigational components that compose declaratively with your application.

4.2 Back-end Design

Authentication: Firebase Authentication

Firebase-Authentication integrates tightly with other Firebase services, and it leverages industry standards like OAuth 2.0 and OpenID Connect, so it can be easily integrated with your custom backend.

DBMS: Cloud Fire store, Firebase Realtime Database

Firebase Realtime Database is a cloud-hosted database. Data is stored as JSON and synchronized in real-time to every connected client.

Cloud Fire-store is a flexible, scalable database for mobile, web, and server development from Firebase and Google Cloud.

Storage: Cloud Storage

Cloud Storage for Firebase is a powerful, simple, and cost-effective object storage service built for Google scale.

Hosting: Firebase Hosting

Firebase Hosting provides fast and secure hosting for your web app, static and dynamic content, and micro services.

4.3 Implementation Requirements

- Node JS environment
- Firebase Project
- Firebase Configuration

CHAPTER 5

IMPLEMENTATION AND TESTING

5.1 Implementation of Database

- In the Firebase console, click Add project, then follow the on-screen instructions to create a Firebase project.
- Navigate to the Cloud Firestore section of the Firebase console & set Cloud Firestore Security Rules
- Set up our development environment by placing API Key, auth domain, project Id into our App.

5.2 Implementation of Front-end Design

- Install NodeJS into our system.
- run the command: "npx create-react-app living-window" to make our react project.
- run "npm i clsx firebase date-fns react-router-dom react-icons @material-ui/core @material-ui/icons @material-ui/picker @material-ui/lab react-select redux redux-thunk react-responsive-carousel uuid @hookform/resolvers yup @dateio/date-fns" to install dependencies into our project.
- run "npm start" to start our react app into our system.

CHAPTER 6

IMPACT ON SOCIETY AND ETHICAL ASPECTS

6.1 Impact on society and Environment

When a project is built up, there is a reason behind it which impact on our society. This impact should be positive. Our **"বসবাস-বাতায়ন"** is built up to make easy life. It saves time and helpful both of users and admin. Our main focus to give security to our users. This project is helpful for our citizen. We hope that it will create a positive impact to our society.

6.2 Ethical Aspects

Our project must respect the user's security and privacy. It will work for everyone and there will no risk to use this website application. We ensure our users that every information and data are stored safe.

6.3 Sustainability Plan

We have a large plan for this project. We have not built this project for our academic conditions. We have built this project to serve our country by helping people. We have a plan to present our project to the IT department of Police. We also want to present our project to our ICT department of Bangladesh.

CHAPTER 7

CONCLUSION AND FUTURE SCOPE

7.1 Discussion and Conclusion

"বসবাস-বাতায়ন" is a project which is important for our country. Everyday there is being created many problems between house-owner and their tenants. This website application helps to solve this problem. Police can also record their information and there will be no chance to miss any information. This application is the first online platform by which government can collect or find information of citizen. Any pandemic situation can be handled to research an area situation. So, we hope that this online platform can help our government and security sector.

7.2 Scope for Further Developments

There are many plans in our project in future. It is a development project and it is being continued. In future we may add some extra features which will be more user friendly for the users. Firstly, it will be used in city area and in future, we will add a feature where is shown the movement of population with bar chart and pie chart. In future we will also add family complain feature where the simple problem is solved by the security admin panel so that general people don't have to go police station to record complain.

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