SOFTWARE DESIGN SPECIFICATION..

SMART DUSTBIN SYSTEM

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Table Of Content

The Software Design Specification

1. Introduction

The Software Design Document is a document to provide documentation which will be used to
aid in software development by providing the details for how the software should be built.
Within the Software Design Document are narrative and graphical documentation of the
software design for the project including use case models, sequence diagrams, collaboration
models, object behavior models, and other supporting requirement information.

1.1 Purpose of this document

This document will define the design of our web application on occupancy dustbin management system. It contains specific information about the expected input, output, components, and functions. The interaction between the components to meet the desired requirements are outlined in detailed figures at the end of the document.

1.2 Scope of the development project

We describe what features are in the scope of the application and what are not in the scope of the application to be developed.

In Scope:

a. A GUI web Application for smart dustbin management system for managing the waste of CC3 building .

b. Admin can see the condition of all the dustbins using the ultrasonic sensor and the moisture sensor by taking a look at the database.

c. Admin can keep track of progress of van drivers using the number of complaints against any particular van driver.

Out of Scope:
a. Switching ON/OFF the electrical devices.

1.3 Definitions, acronyms, and abbreviations

Acronyms and Abbreviations:
1. “Occupancy Monitoring system” - app name.
Definitions:
1. Buildings - CC3 etc.
2. “Smart Dustbin System” – A web application for effective management of dustbin systems in the CC3 building .

1.4 References

1.4.1 R. S. Pressman, Software Engineering: A Practitioner's Approach, 5th Ed, McGraw-Hill, 2001.
1.4.2 IEEE SDS template

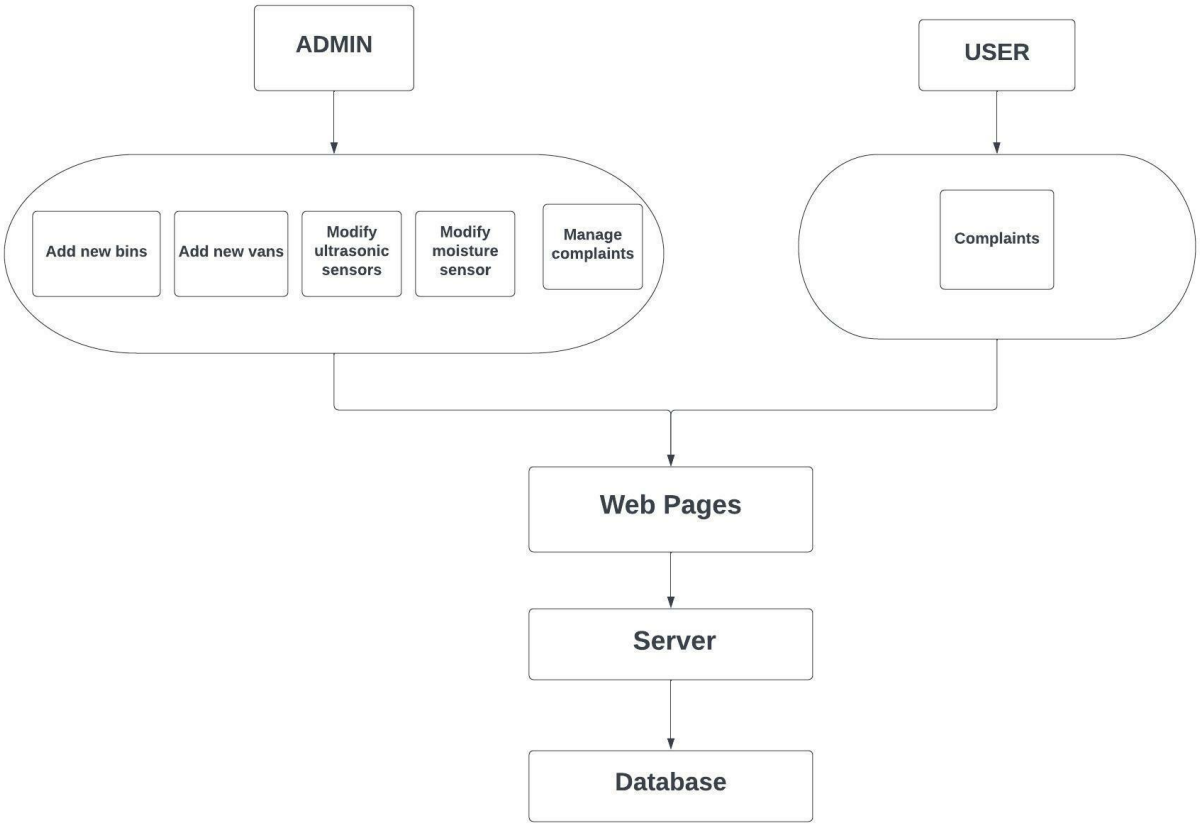
1.5 Overview of document

This SDS is divided into seven sections with various sub-sections. The sections of the Software
Design Document are
1. **Introduction**: describes about the document, purpose, scope of development project
definitions and abbreviations used in the document.
2. **Conceptual Architecture/Architecture Diagram:** describes the overview of components,
modules, structure and relationships and user interface issues.
3. **Logical Architecture:** describes Logical Architecture Description and Components.
4. **Execution Architecture:** defines the runtime environment, processes, deployment
view.
5. **Design Decisions and Trade-offs:** describes the decisions taken along with the reason as
to why they were chosen over other alternatives.

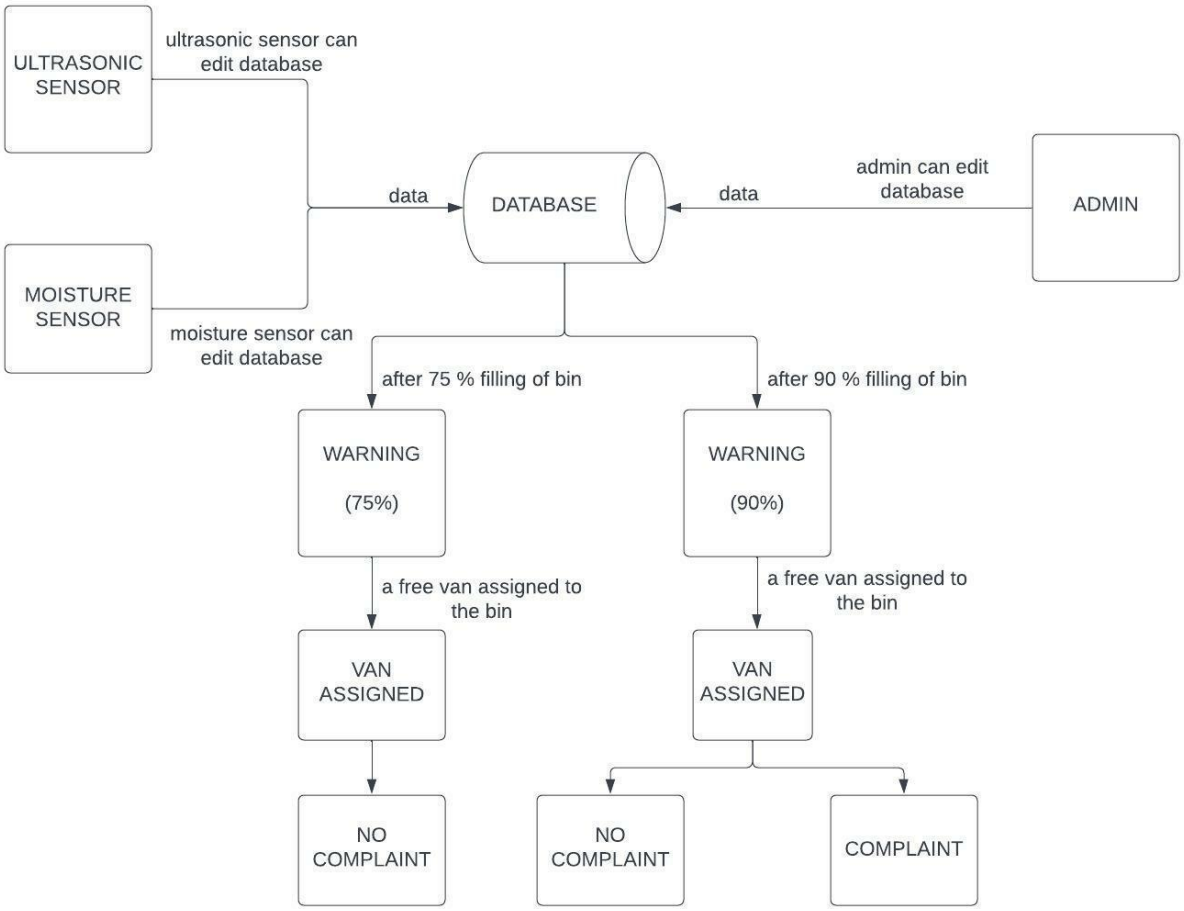
6. **Pseudocode for components:** describes pseudocode, as the name indicates.
7. **Appendices:** describes subsidiary matter if any

2. Conceptual Architecture/Architecture

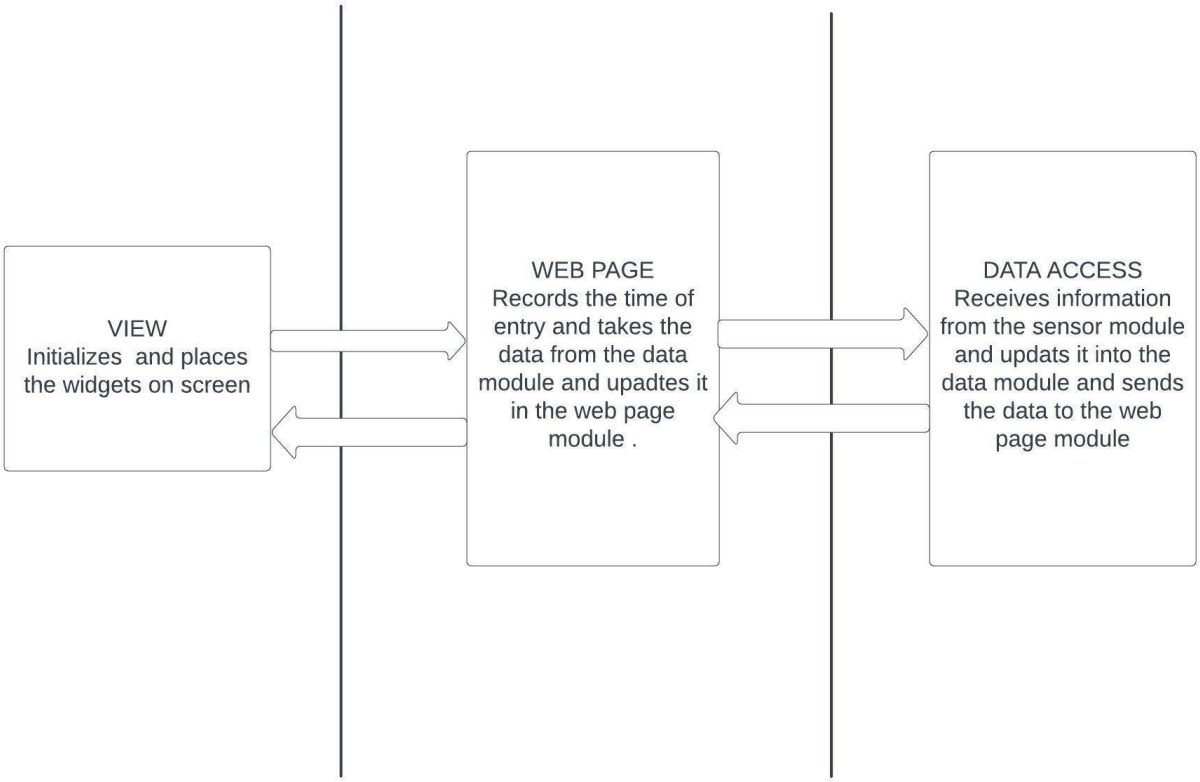
2.1.1 Architectural Diagram - 1



2.1.2 Architectural Diagram - 2



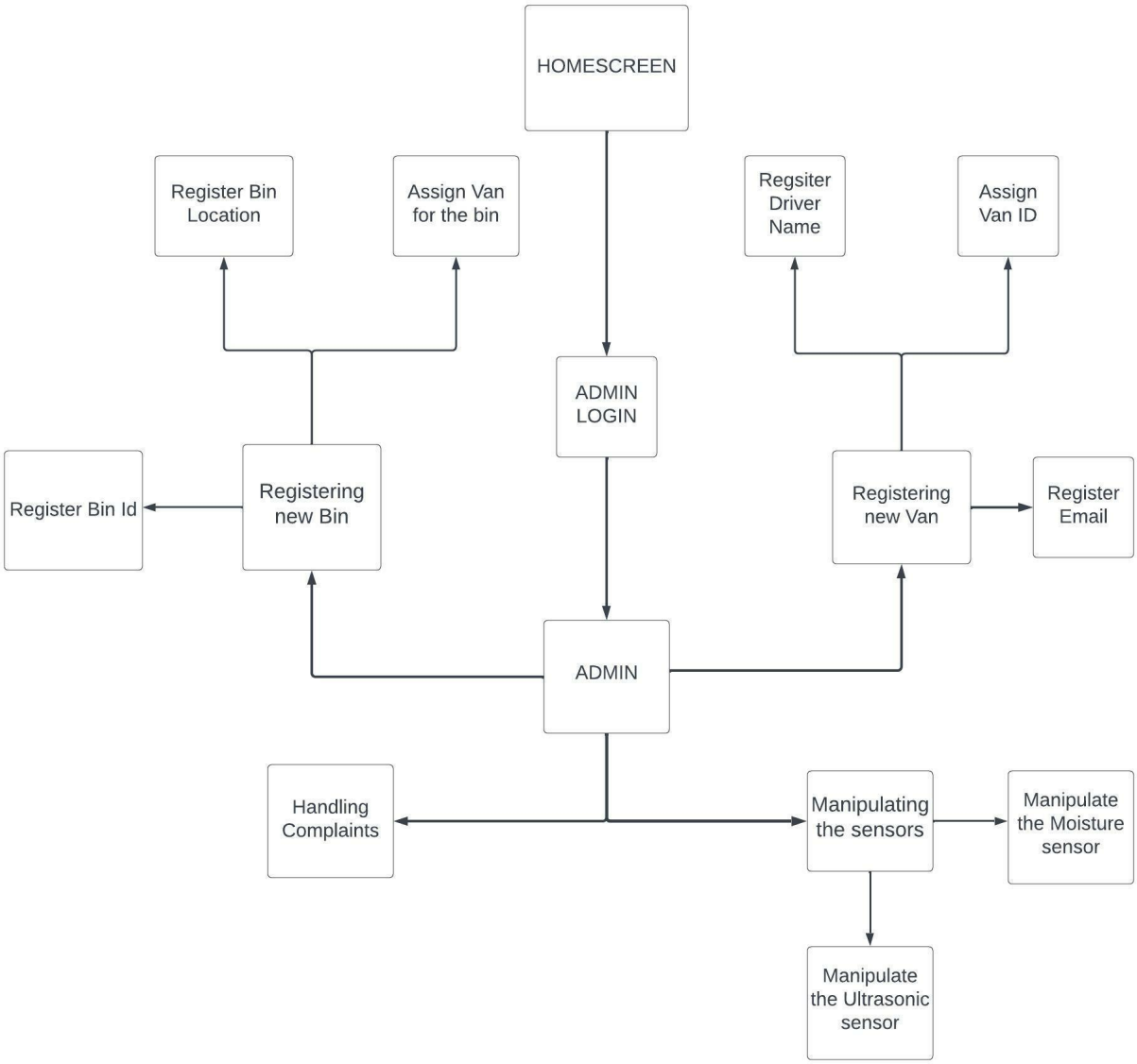
2.2 Overview of modules / components



NOTE:

The horizontal lines represent the separation of modules.

2.2.1 User's/Admin's Side



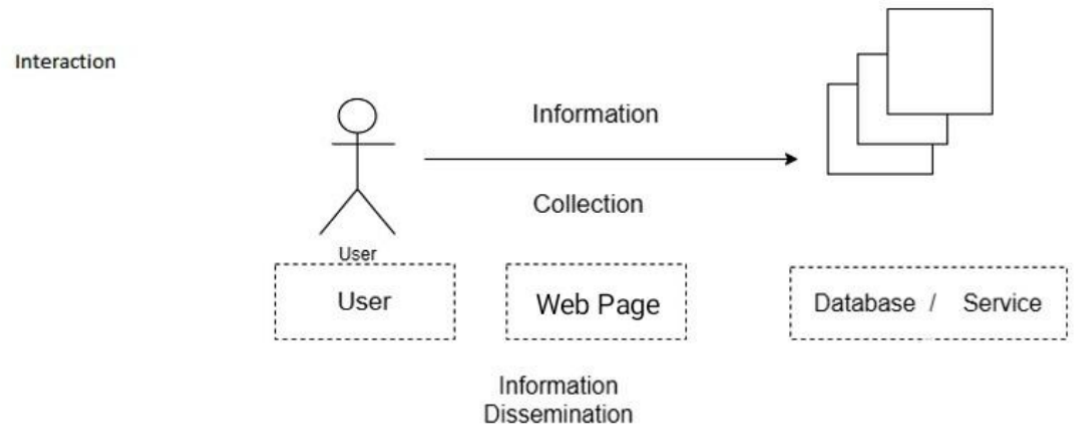
2.3 User interface issues

Smart Dustbin System-

Only the admin can do all the important changes in the database and manipulate the sensors. Admin will login in the application with the help of password . New dustbins will be registered in the system with their id, location , dimensions and one of the vans will be assigned to that dustbin . New vans with their name , van id and mail id will also be registered.

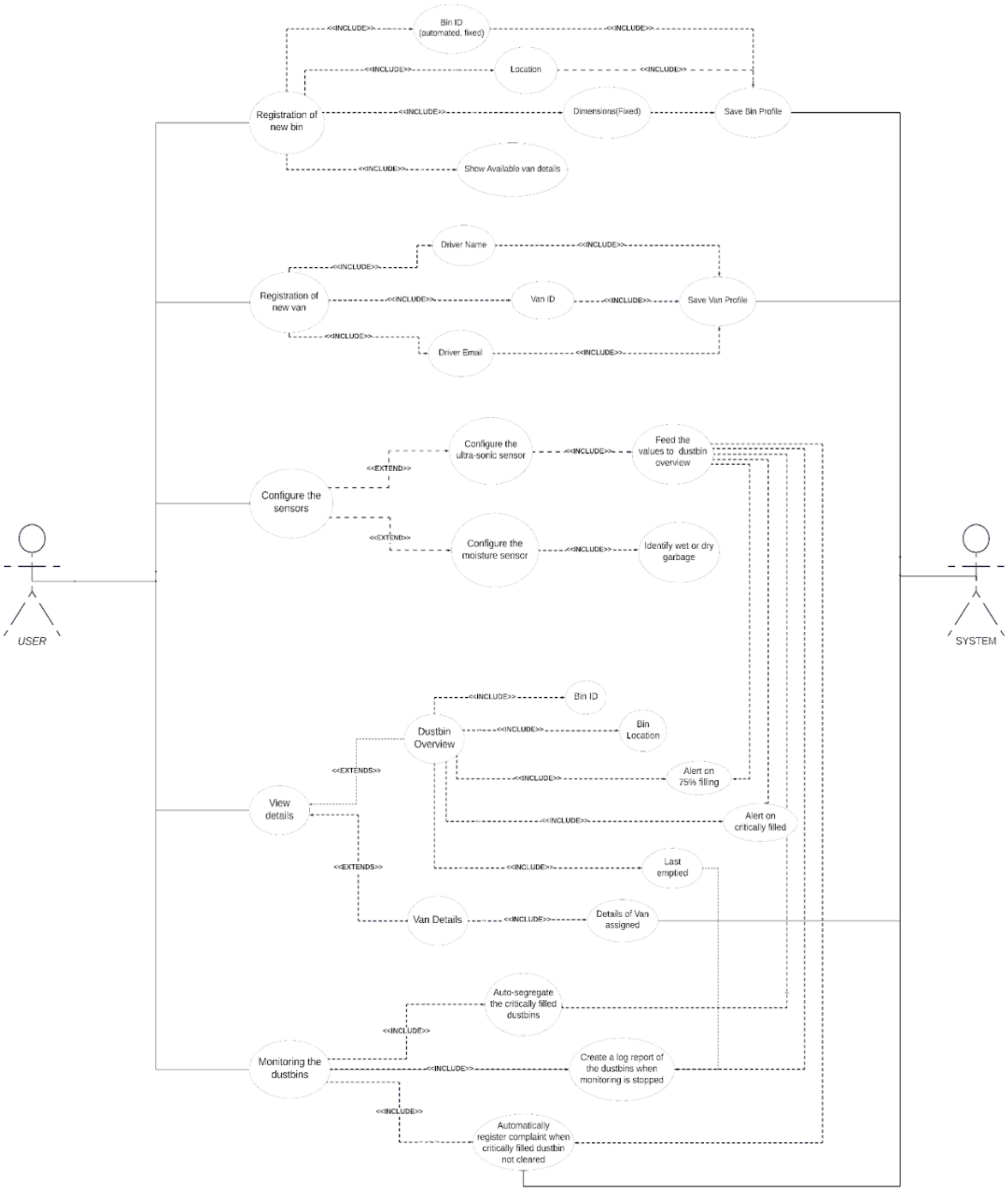
3. Logical Architecture

3.1 Data Flow Diagram:

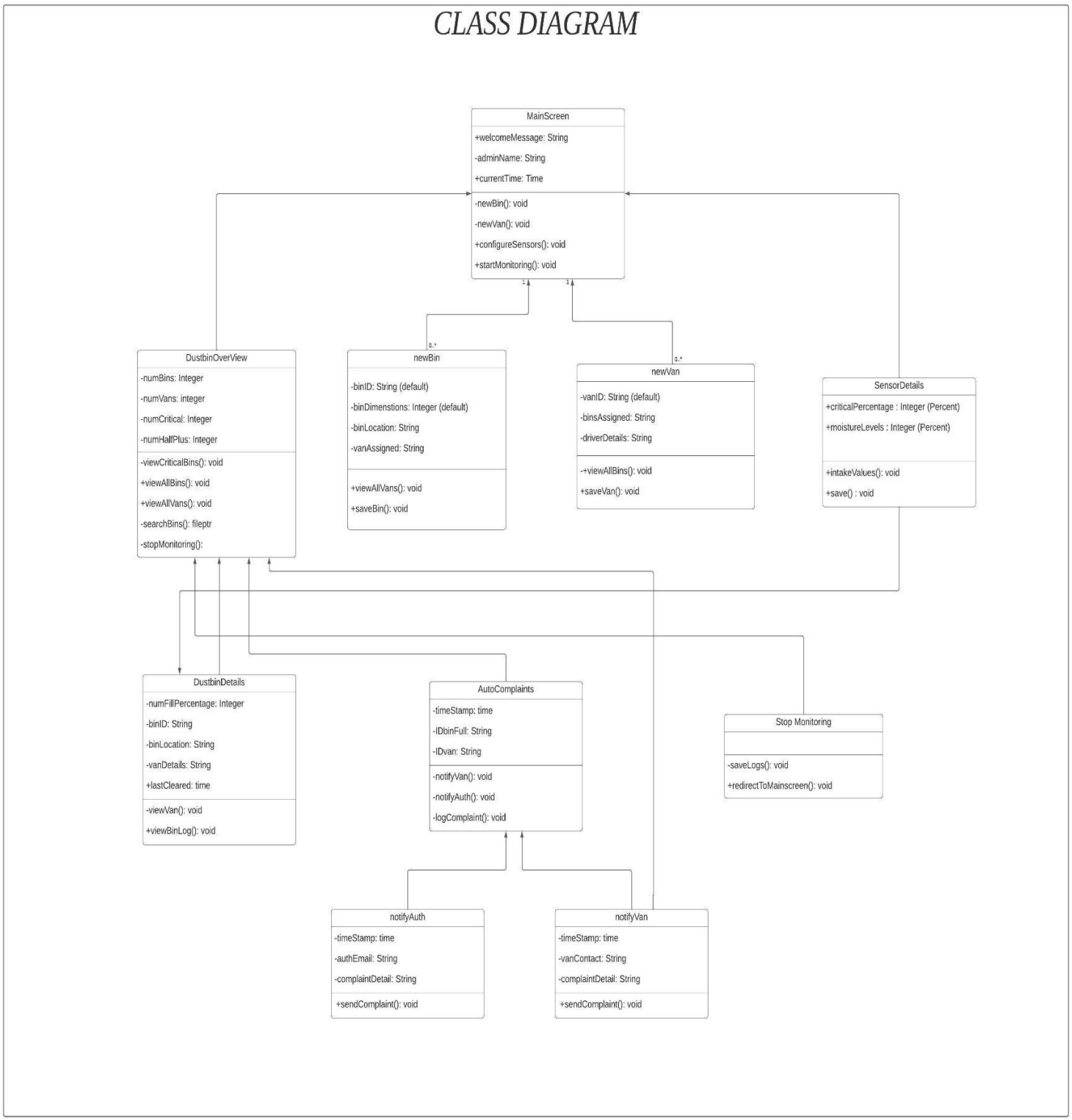


3.2 Use Case Diagram:

USE CASE DIAGRAM

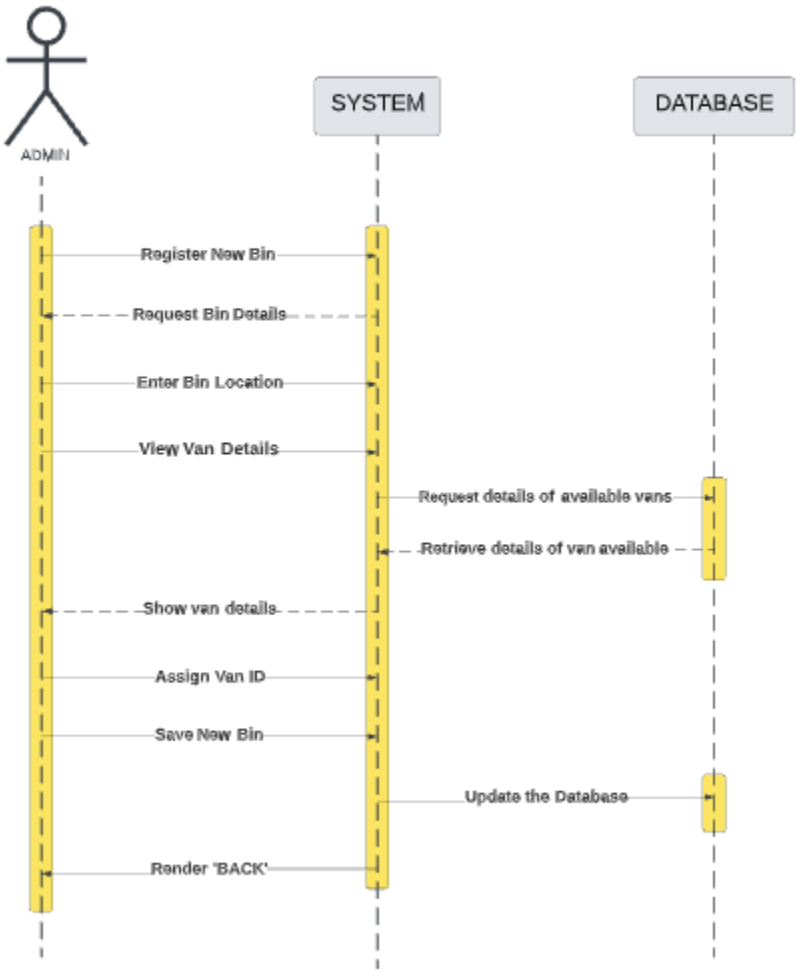


3.3 CLASS DIAGRAM

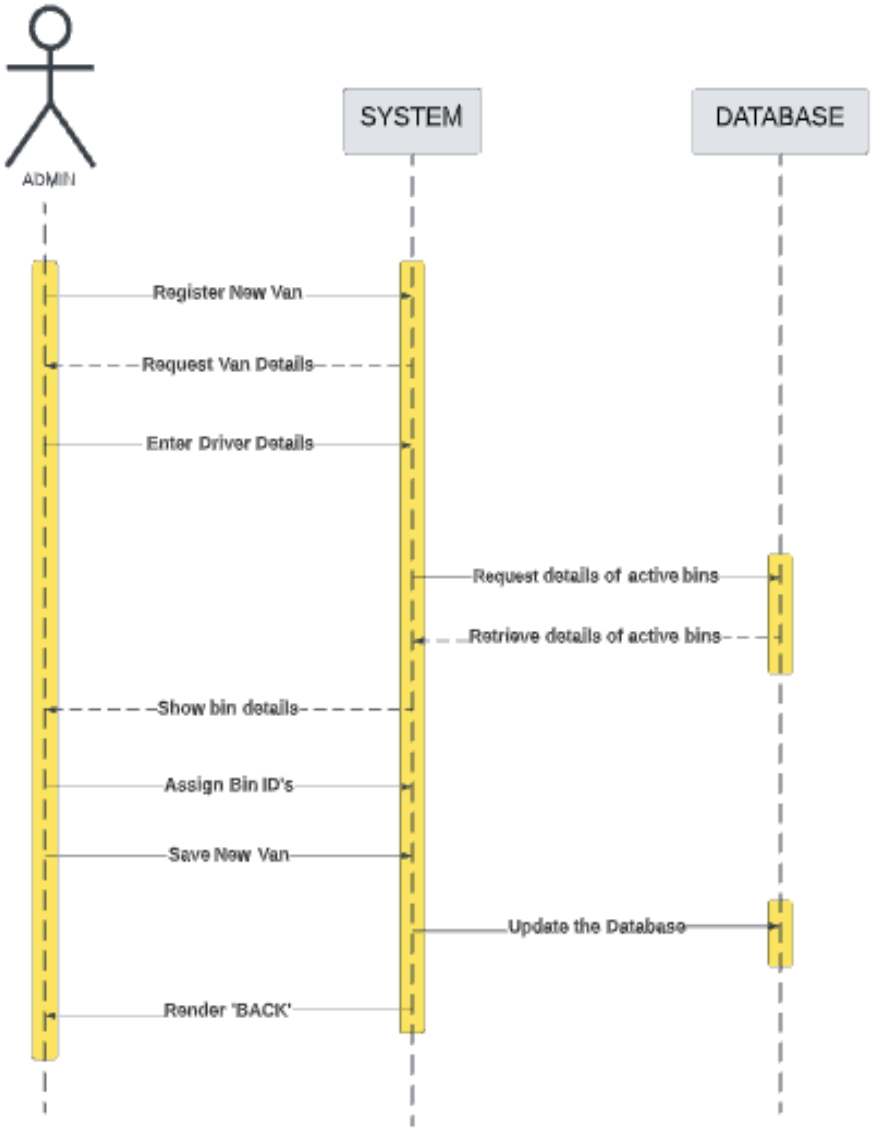


3.4 Sequence Diagram

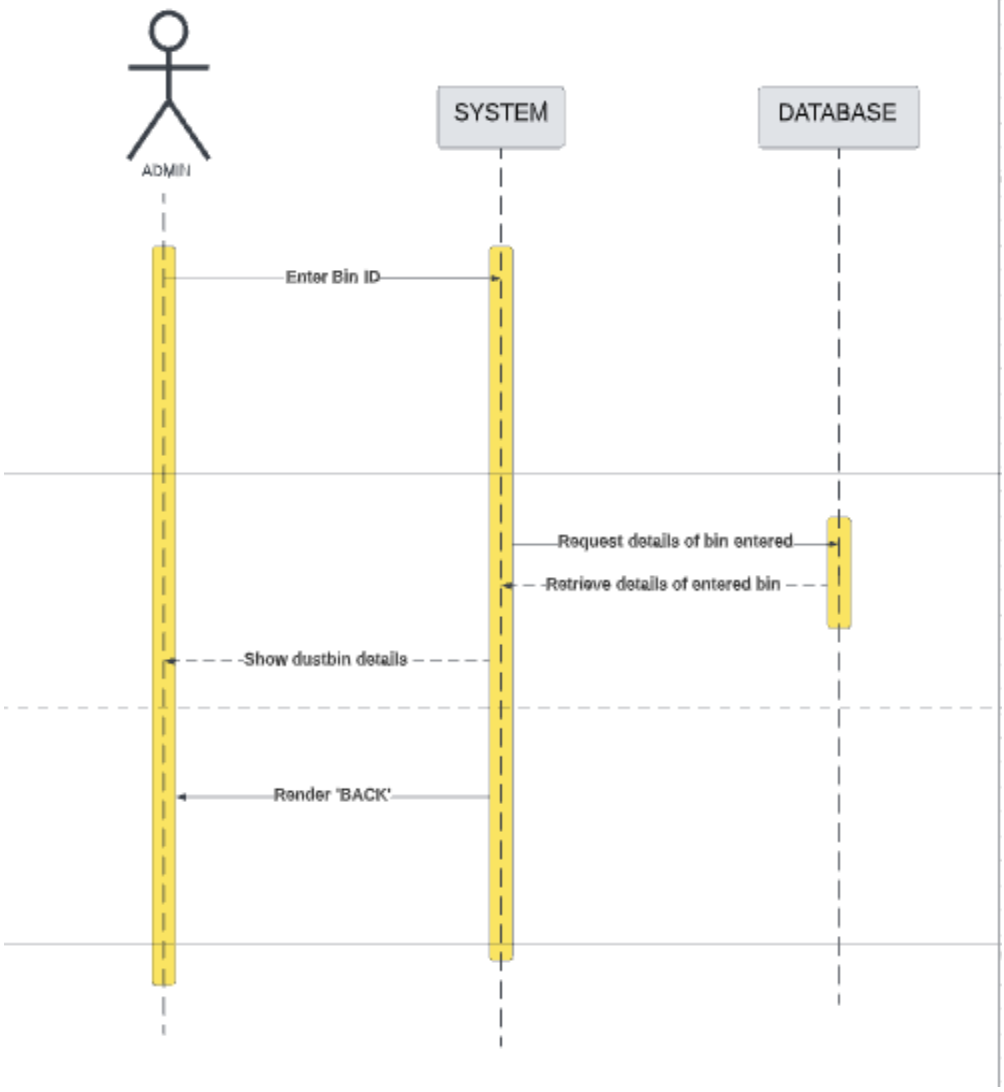
Sequence Diagram for Usecase 1 : ***Registration of a new bin***



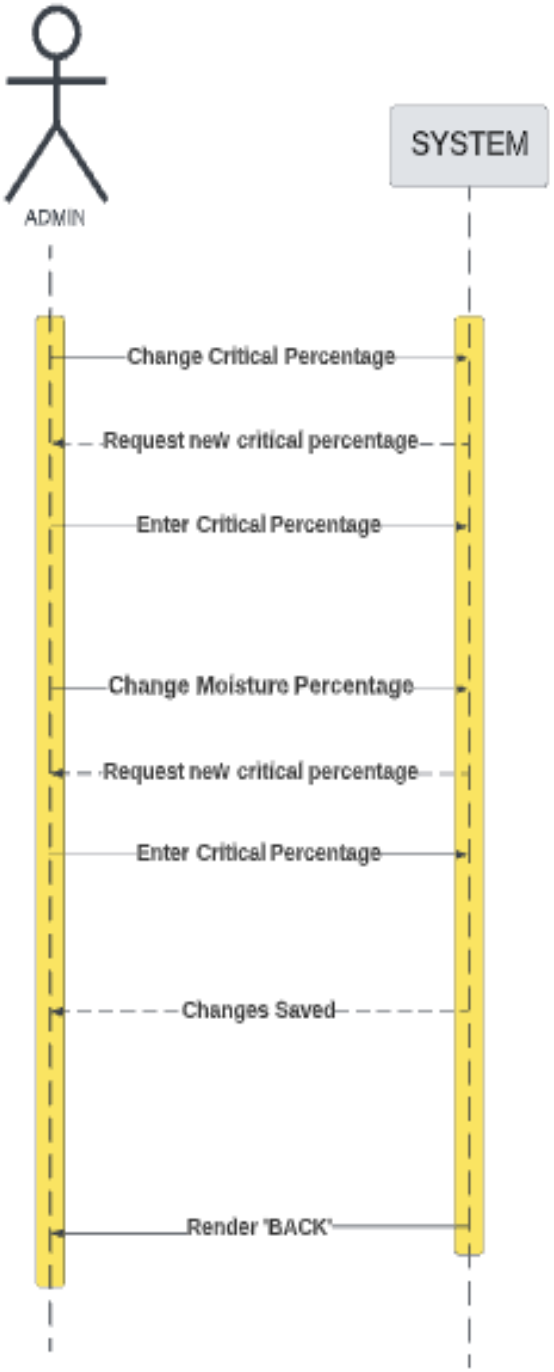
Sequence Diagram for Usecase 2 : ***Registration of a new Van***



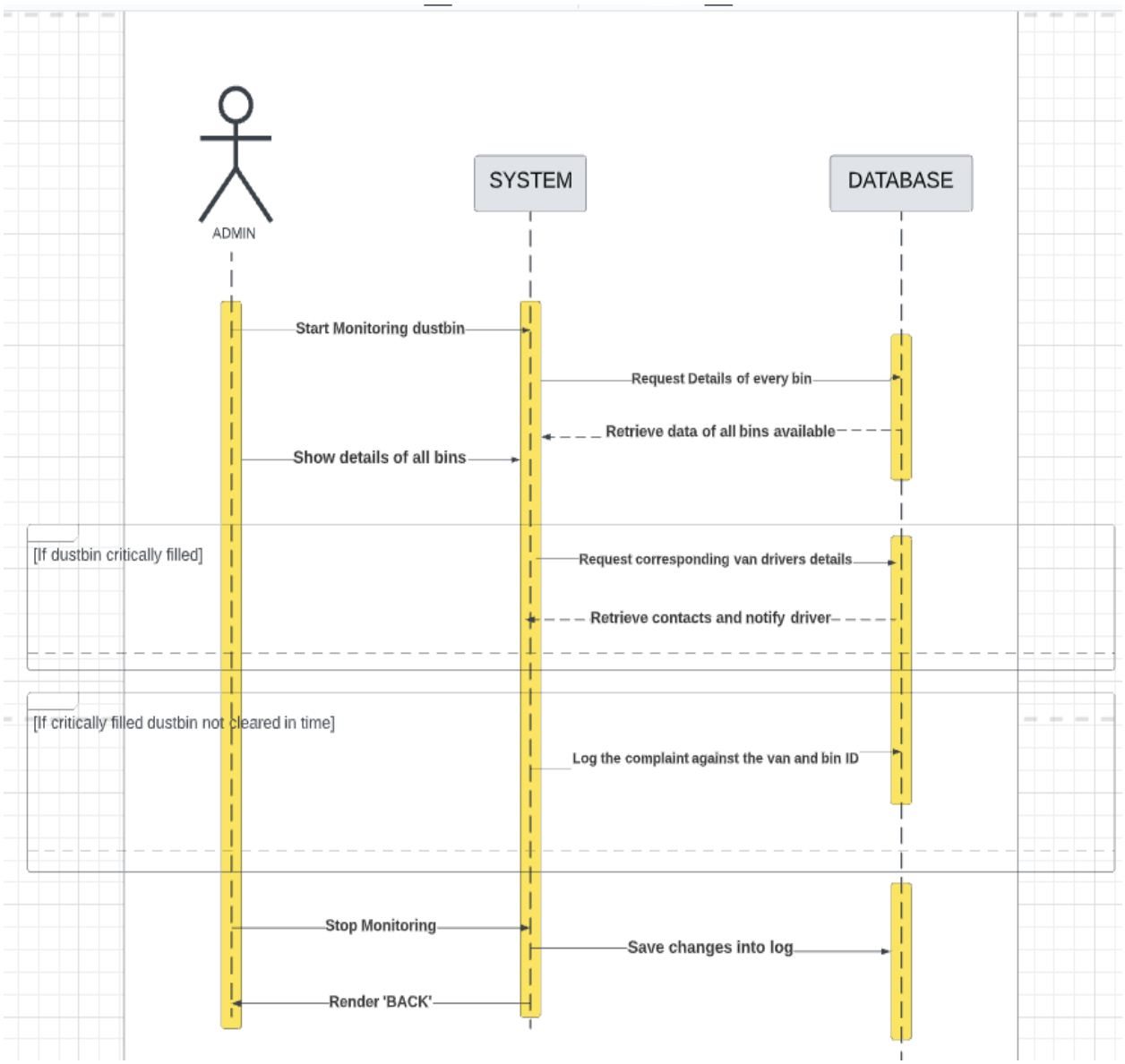
Sequence Diagram for Usecase 3 : ***View details of dustbin***



Sequence Diagram for Use Case 4 : ***Configure the sensors***

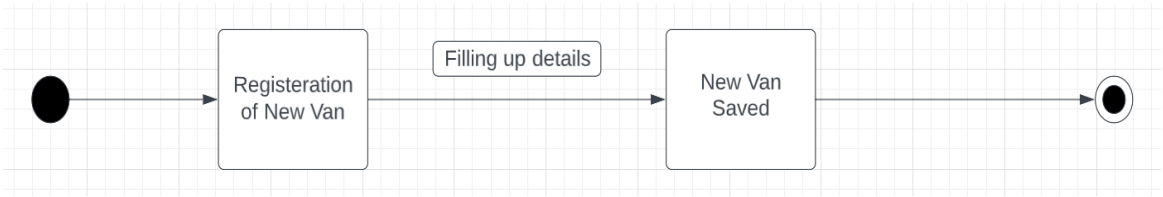


Sequence Diagram for Use Case 5 : ***Monitoring the sensors***

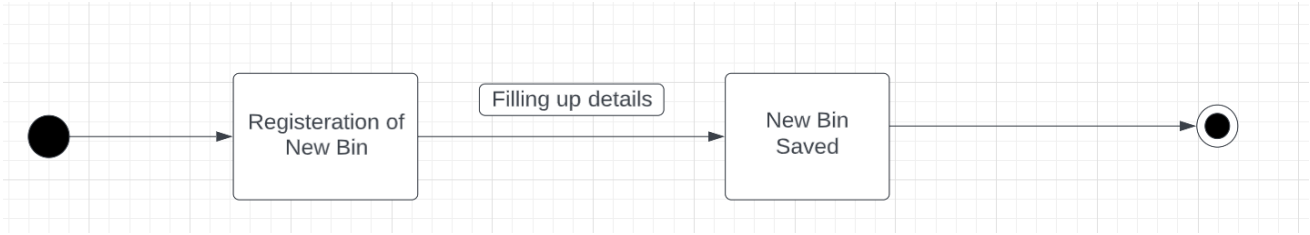


3.5 State Diagrams

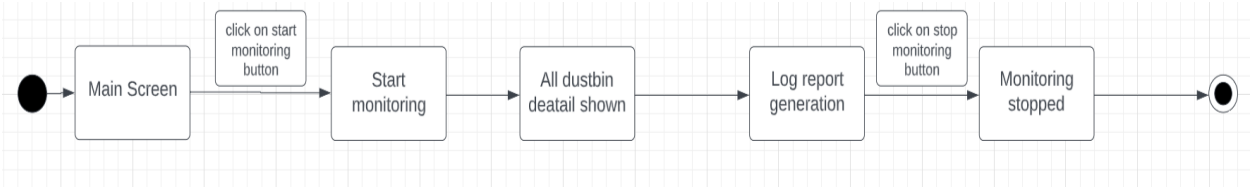
- **Registration of new van**



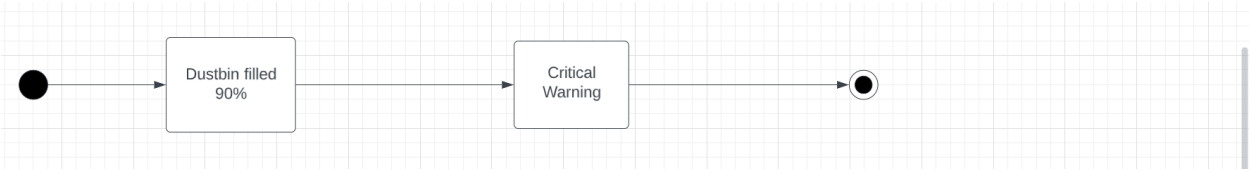
- **Registration of new Bin**



- **Monitoring**


Main Screen
click on start monitoring button
Start monitoring
All dustbin deatail shown
Log report generation
click on stop monitoring button
Monitoring stopped

- **Warning**


Dustbin filled 90%
Critical Warning