SYSC 3303 Final Report

Lab Section: B2

Group Number: 6

Team Members:

1) Karthikeyan Bhavani Shankar 101214895

2) Praveen Hari 101220010

3) Atharva Kasture 101164136

4) Tauheed Alamgir 101194927

5) Ibrahim Faisal 101209598

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Breakdown of responsibilities of each team member for each iteration:

Iteration 1:

1. Floor.java: Ibrahim and Tauheed
2. Scheduler.java: Karthikeyan
3. Elevator.java: Praveen
4. UML diagrams: Atharva
5. Readme: Whole group

Iteration 2:

1. Floor.java: Ibrahim and Tauheed
2. Scheduler.java: Karthikeyan
3. Elevator.java: Praveen
4. UML diagrams: Atharva
5. Readme: Whole group
6. State Machine: whole group

Iteration 3:

1. Floor.java: Ibrahim and Tauheed
2. Scheduler.java: Karthikeyan
3. Elevator.java: Praveen
4. UML diagrams: Atharva
5. Readme: Whole group

Iteration 4:

1. Floor.java: Ibrahim and Tauheed
2. Scheduler.java: Karthikeyan
3. Elevator.java: Praveen
4. UML diagrams: Atharva

5. Readme: Whole group

Iteration 5:

1.Test cases, formatting the code: Karthikeyan

2.UML class diagrams, timing diagrams: Atharva

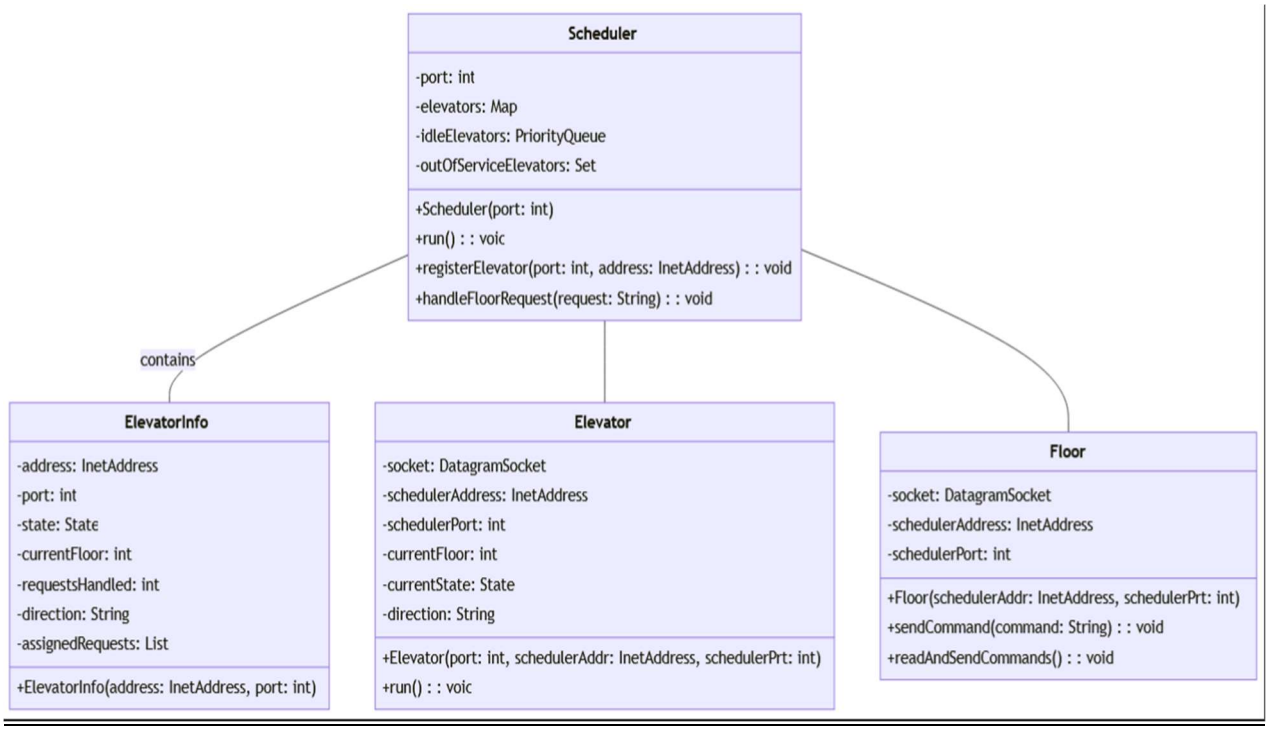
3.GUI for final presentation, test cases: Ibrahim

4.GUI for final presentation, formatting the code, sequence diagrams: Praveen.

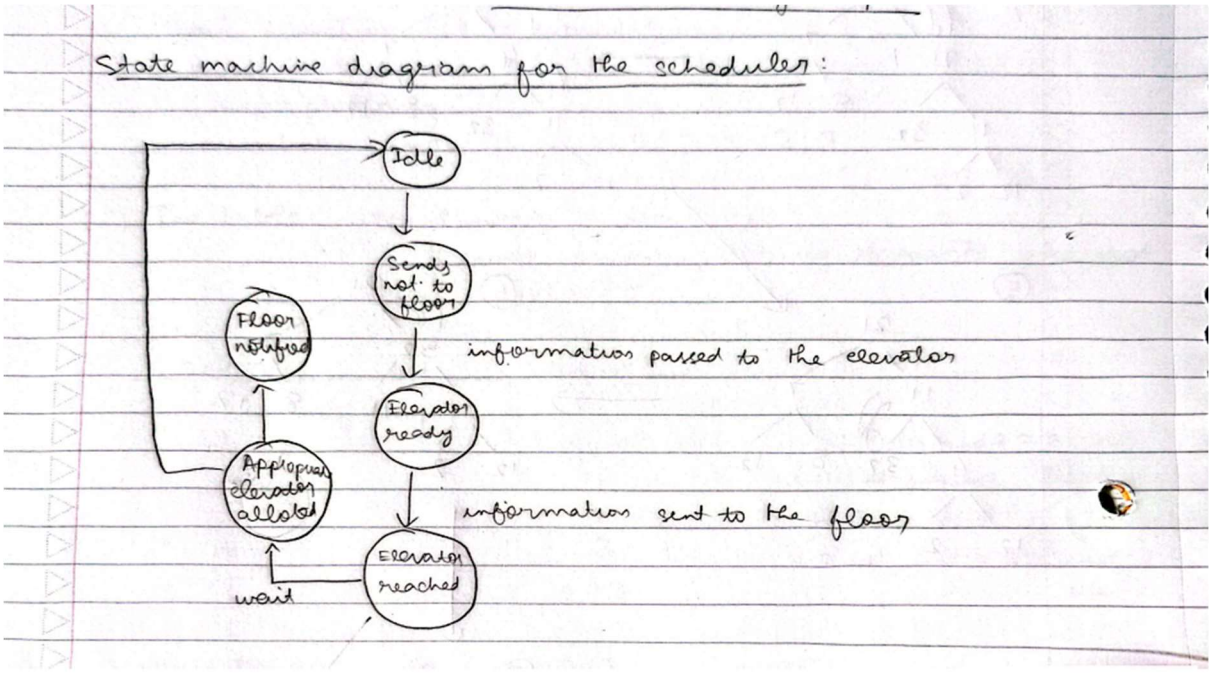
5.Final Report Formatting, state machine diagrams: Ibrahim

2.0 Diagrams:

2.1 UML Class Diagrams:

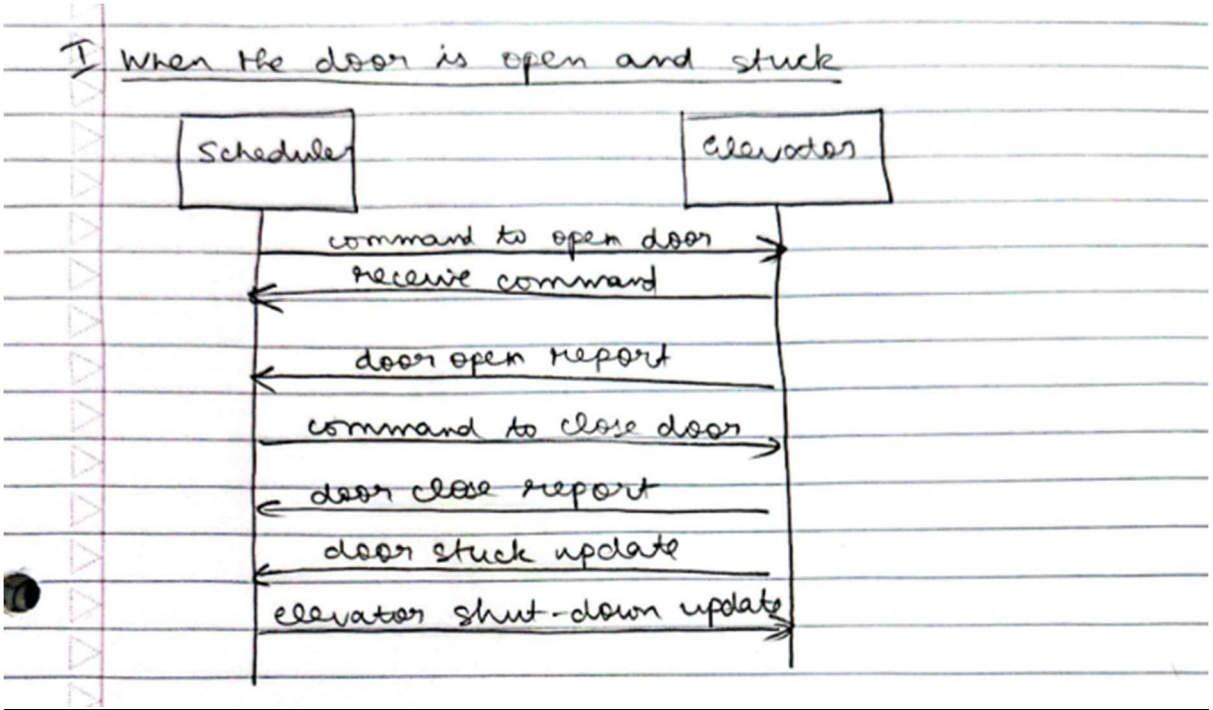


2.2 A State Machine diagram for the scheduler:

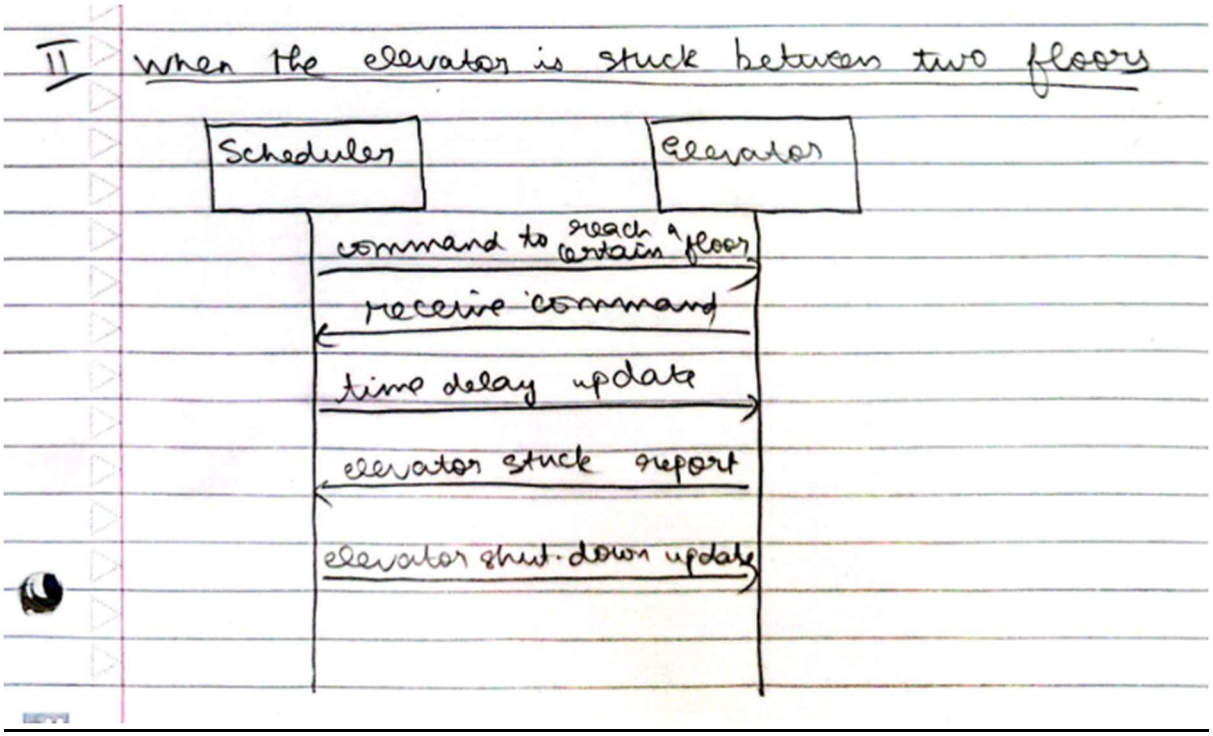


2.3 Sequence diagrams showing all the error scenarios:

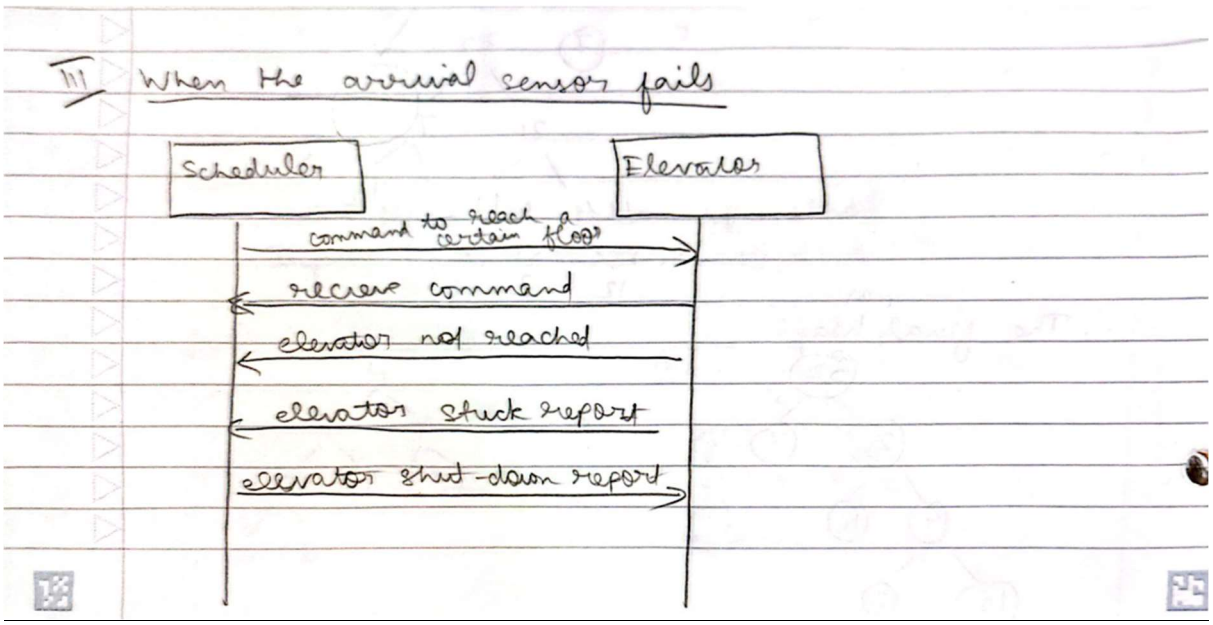
Scenario 1: When the door is stuck open and not closing:



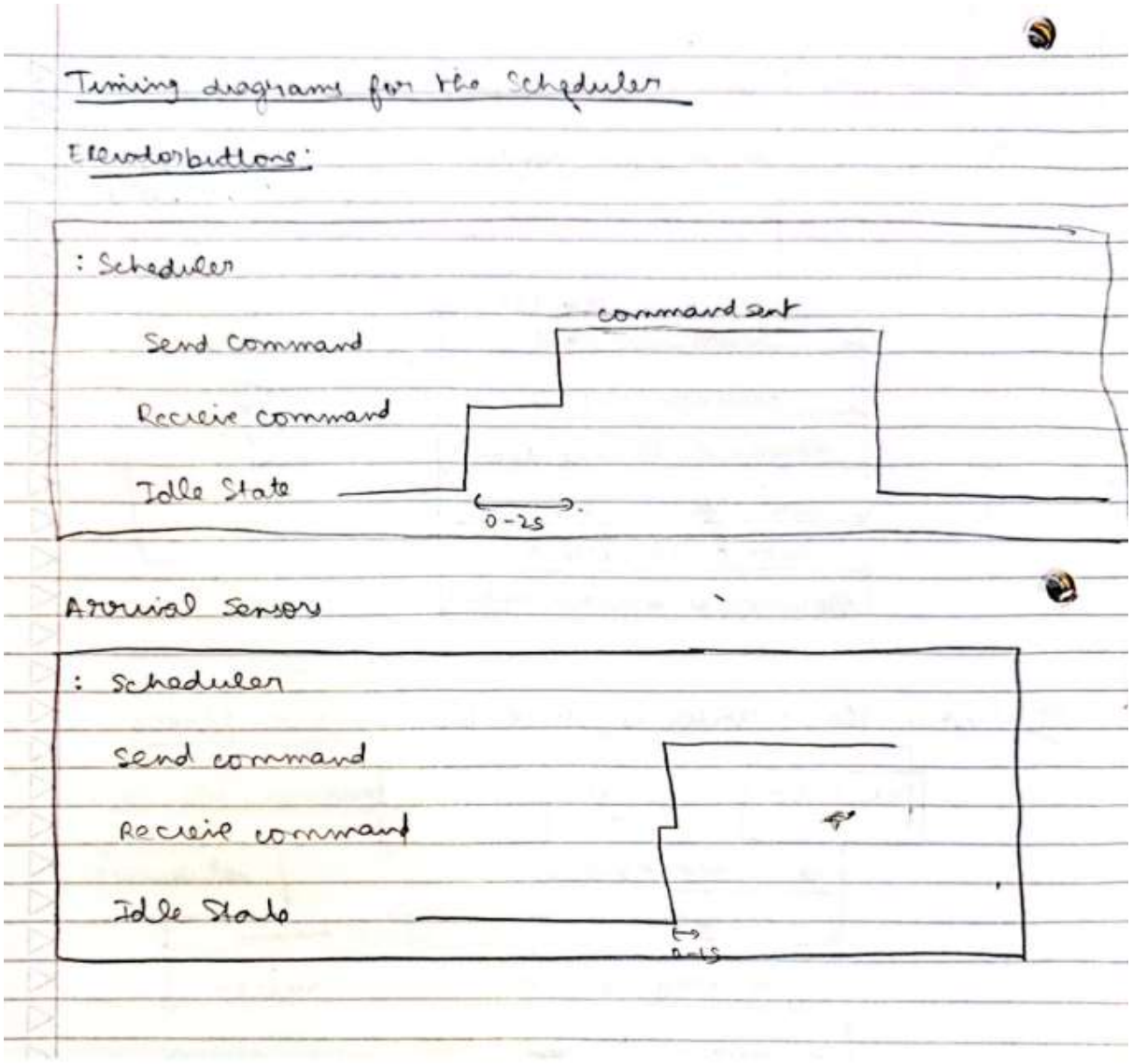
Scenario 2: When the elevator is stuck between two floors (For instance stuck between 3rd and 4th floor):



Scenario 3: When the arrival sensor fails:



2.4 Timing diagrams for the scheduler:



3.0 Detailed set up and test instructions:

Set-Up Instructions:

To run the GUI file, we first run the main as java application.

Run the elevator GUI file, and then run the floor file in **command prompt** (cmd).

For the floor java file, we enter **'java Floor localhost 6000'** in cmd to obtain the desired output.

In floor.java, make sure the file path is linked to the elevatorInput.csv file.

Test Instructions:

To run all the test cases for different components, we run their corresponding test cases.

For instance, to test the elevator java file, we run the **Test Elevator System** file. To test the Floor java file, we run the **Test Floor** file and to test the scheduler Java file, we run the **Test Scheduler file**.

4.0 Results from your measurements:

We calculated the measurements for the total number of recoverable faults and the hard faults including the no of requests.

No of faults	Recoverable faults	Hard faults
8	4	4
6	5	1
3	1	2

5.0 Reflection on your design:

We are pleased with the completion of the project, as it fulfills all the specified requirements effectively. The graphical user interface (GUI) plays a significant role in enhancing the user experience. While the project successfully met most of the functional requirements, we encountered challenges in implementing a comprehensive graphical user interface (GUI).

We recognize the importance of enhancing the GUI to reflect the system's state accurately and provide a more intuitive user experience. This includes implementing features such as displaying elevator positions, door states, and current floor indicators in real-time.

In conclusion, while we are satisfied with the project's completion and its adherence to the requirements, we recognize the opportunity to further enhance the system's efficiency through improvements in the scheduler's routing logic. By addressing this aspect, we can elevate the performance and effectiveness of the elevator control system, providing a more seamless and optimized user experience.