OOM MINI PROJECT
REPORT

Smart Toilet Management System

SECTION B
GROUP NO. 17

<u>GROUP MEMBERS –</u>

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INSTRUCTIONS FOR EXECUTING AND SPECIFIC REQUIREMENTS

- To run the project extract the ZIP **(PROJECT.zip)** file shared.

- Open folder named **'dist'** . **(/ToiletManagement/dist)**

- All the codes of classes are present in the **'src' (/ToiletManagement/src)** folder of the project folder itself.

Note: If 'database' folder **is missing** in the **'dist'** folder. Run the jar file first then close it .This will create a 'database' folder in the **'dist'** folder along with some readme files . Then replace the 'database' folder in **'dist'** folder **(/ToiletManagement/dist)** with the 'database' folder from root folder of the project **(/ToiletManagement/database)**

ABOVE IS NOT NECESSARY BUT FOR BETTER USAGE OF THE PROJECT PLEASE COMPLY .

- Run the jar file named **'ToiletManagement.jar'** in the **'dist'** folder of the project folder.

- While Registration please enter **'A VALID EMAIL ID'**. (All fields are mandatory)
  Click on the **right arrow** to continue .
 **Wait for some time for the processing of the Mail .** (You will be notified)

  Verify with the **Verification Code** provided in the **Mail.**
  A Unique ID will be provided in the **Mail** by the administration for your login after **SUCCESSFUL REGISTRATION.**

- For **schema generation and table**, there is **no** need for execution of any type of scripts.
  - Because We have added that in the code itself, in **'src'** folder **(DatabaseHandler.java)**
  - **So that it creates an embedded database if there is no database**.
  - It also created a table in the database also if there is no table.
  - The names of database is **'database'** and the tables present are:
    - LOGIN
    - MAINTENANCE
    - TOILET
    - THRESHOLD
    - TL01 ….. TL24
    - TL01M …… TL24M

GUIDE TO USING THE SMART TOILET MANAGEMENT SYSTEM

Explained using the screenshots of the project.
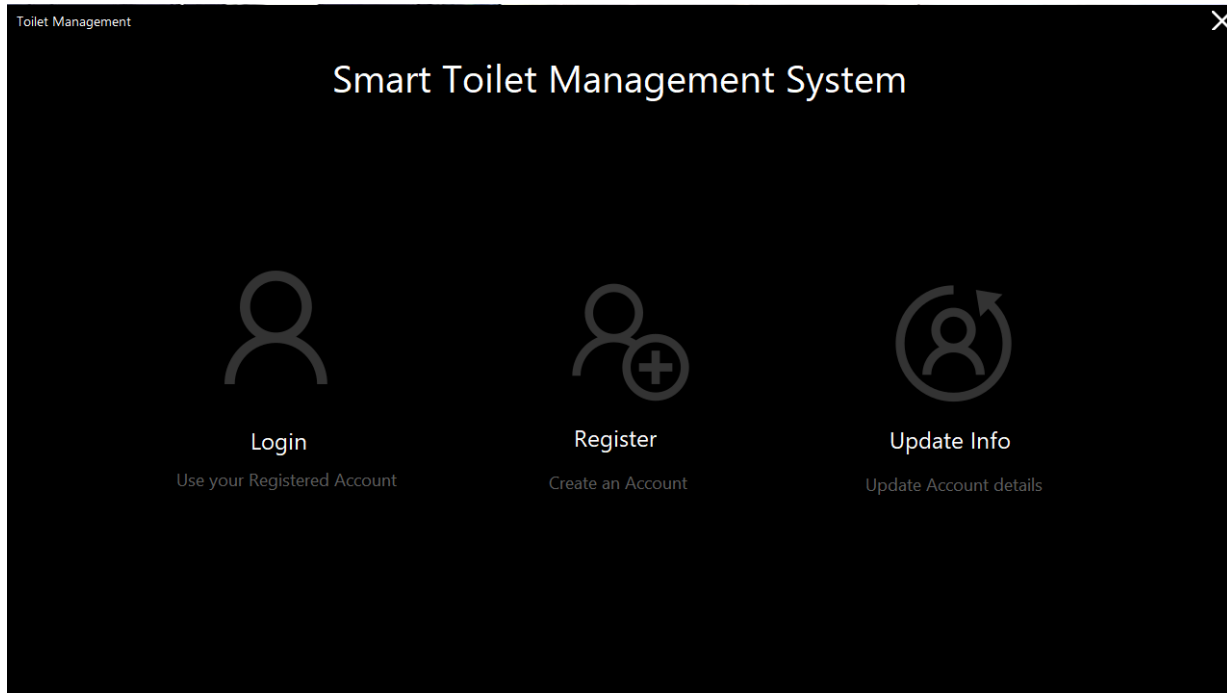
⊄ The register button on the MAIN PAGE redirects you to the REGISTRATION PAGE.
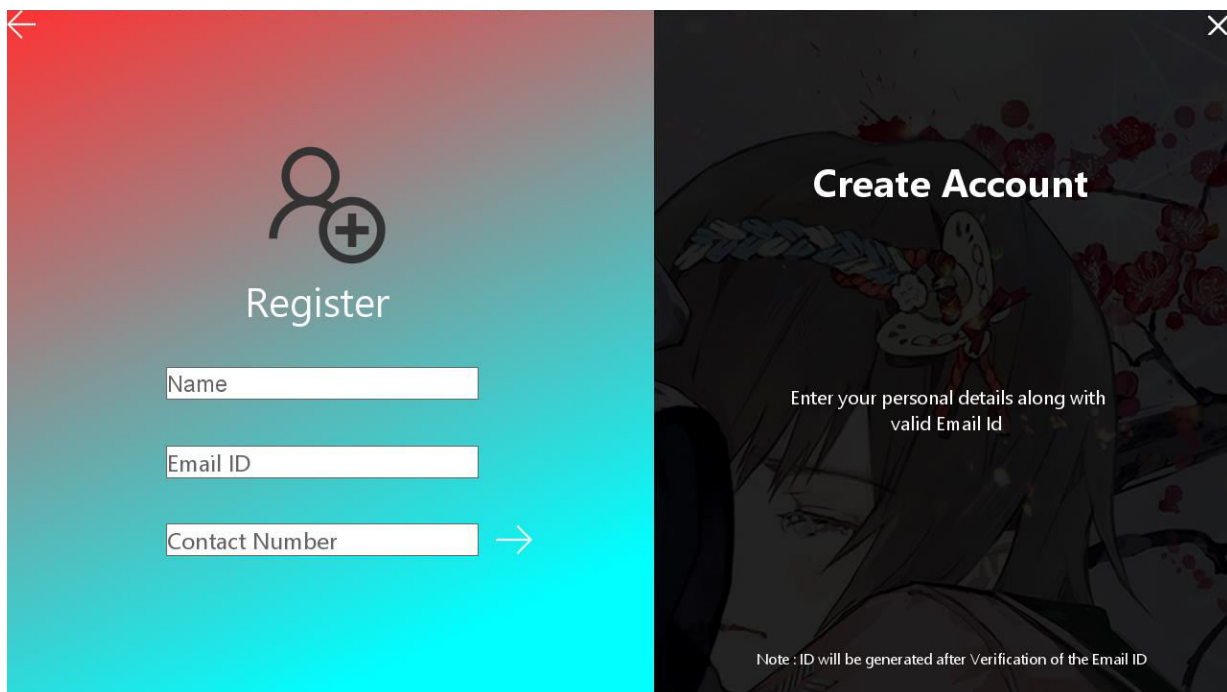
⊄ In the REGISTRATION PAGE after entering your details and submitting, it will send a confirmation code which you will need to register . Following this you will also receive an email regarding successful registration.

- ∉ While registration please enter 'A VALID EMAIL ID', you can't register with the same email id for more than one time.
- ∉ After Registartion you will be redirect to LOGIN PAGE
  Enter the **UNIQUE ID** provided in the Trailing **MAIL**

- ∉ After logging in Successfully you will be redirected to the **CLEANING SYSTEM** PAGE.

This page shows you the log for **each respective toilet at top** along with the **current NTU and MQ2 values in a table below**. Toilet codes having red color show that they need cleaning i.e the sensor values are above **THRESHOLD** and green colored depicts the NTU and MQ2 values are below **THRESHOLD**.

≠ Click on the **MENU ICON** (three horizontal line) or hover over the LEFT **SIDE BAR** to open the side bar for navigation . You can go to any respective page at any time.
Top Left Displays the Current page you are on right now .
NOTE: If you go to **HOME / LOGIN** you will be marked Logged Out .
Click the **X** symbol for closing the application

≠ You can configure the threshold value of MQ2 and NTU values in **HygieneConfig** page.
Click on the **Help Icon** (top right) for Information on the **NTU and MQ2 Values**

∉ The **MaintenanceSystem** page is as follows.

Maintenance System						✕

Ground Floor   TL01   TL02   TL03   TL04
1st Floor   TL11   TL12   TL13   TL14
2nd Floor   TL21   TL22   TL23   TL24

REFRESH   NOTIFY

TL01	TRASH	TISSUE_PAPER	TOILET_PAPER	SOAP	TIME
1	90	80	158	51	7:8:18 18-11-2020
2	43	133	136	21	7:9:18 18-11-2020
3	92	133	203	21	7:10:18 18-11-2020 ...
4	98	82	87	50	7:11:18 18-11-2020 ...
5	83	190	224	49	7:12:18 18-11-2020 ...
6	88	186	49	33	7:13:18 18-11-2020 ...
7	89	192	37	13	7:14:18 18-11-2020 ...
8	65	178	221	59	7:15:18 18-11-2020 ...
9	65	37	94	11	5:47:43 20-11-2020 ...
10	77	172	143	16	5:48:43 20-11-2020 ...
11	99	53	71	69	5:49:6 20-11-2020

TOILET_NUMBER	TRASH	TISSUE_PAPER	TOILET_PAPER	SOAP	STATUS
TL23	94	93	82	20	NOT OK
TL22	100	89	45	32	NOT OK
TL14	34	6	71	75	NOT OK
TL04	99	9	5	35	NOT OK
TL24	34	51	26	60	OK
TL21	3	55	94	11	OK
TL13	67	13	71	41	OK
TL12	45	78	78	94	OK
TL11	67	23	42	89	OK
TL03	46	37	89	20	OK
TL02	21	23	38	76	OK
TL01	73	46	23	28	OK

This page contains information regarding the consumables like hand wash liquid dispenser , tissue towel quantity along with toilet paper quantity (Quantity in Grams) . It also contains the percentage of trash bin occupied . Toilet codes with red color denote either any of the consumables are empty / less or the trash bin is full / about to be filled .
Table at top denotes the values of every consumable and trash at particular time intervals while the bottom table contains current values of consumables and trash capacity.

NOTE: New data is entered in the tables after every **1 MINUTE** .
PLEASE WAIT FOR ATLEAST A MINUTE BEFORE REFRESHING THE PAGE .

- Personal Information can be Changed either from **MAIN PAGE** or **UPDATE INFO** PAGE
  REGISTERED ACCOUNT can be **DELETED** From **UPDATE INFO** PAGE **(**question icon**)**

NOTE:

ENTER EMAIL ID and ID THEN CLICK ON THE TICK TO FIRST CONFIRM AUR IDENTITY THEN USE THE BELOW FIELDS FOR UPDATING (CLICK ON THE RIGHT ARROW)

- ∉ For DELETION of Account Enter the ID and confirm . Account will be deleted and you Will be directed to the MAIN PAGE
- ∉ **All the Personal Details will be Diplayed and if user wants to edit any he can directly do that from the fields displaying the informations (click the right arrow for that) .**

DIAGRAMS

CLASS DIAGRAM

Cleaning Management system

-name:String
-id: Sttring

-login()
-register()
-updateinfo()

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HygieneConfiguration

-maxNTUvalue : double
-maxMQ2value : double

-setmaxMQ2value()
-setmaxNTUvalue()
-getmaxNTUvalue()
-getmaxMQ2value()

1

{ from sensors }

0*

Toilet

-NTUvalue: double
-MQ2value : double

-setMQ2value
-setNTUvalue
-checkClean(): bool

*

Staff

-name: String
-id: String
-email: String
-contactnumber: int

-verify()
-checkAccount()

Initiate

-dislpay()

FLOW CHART
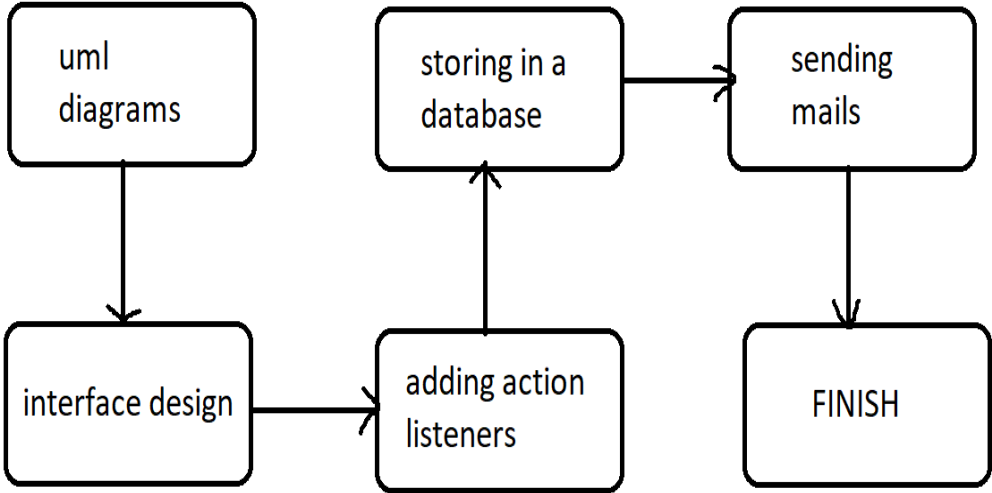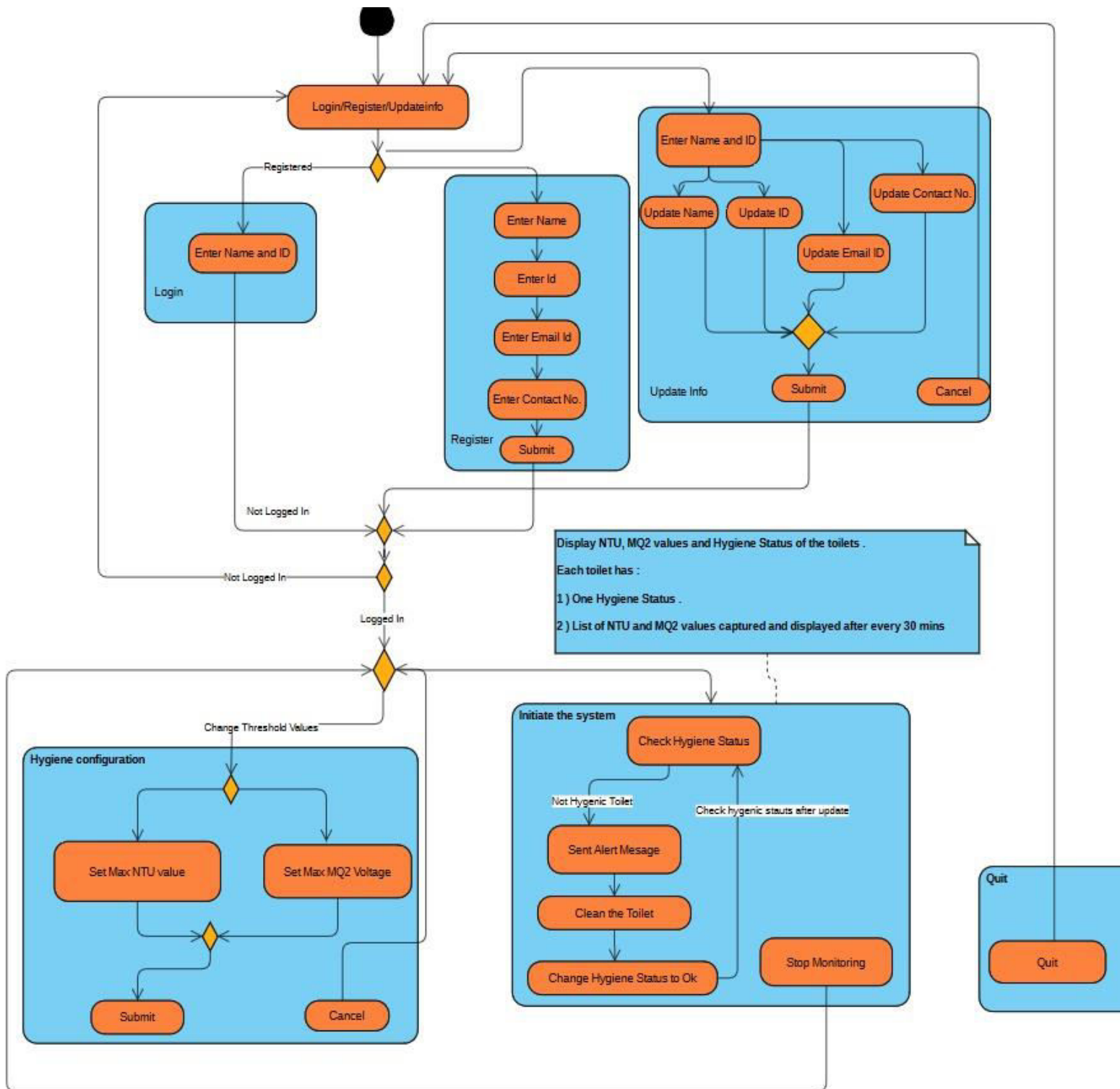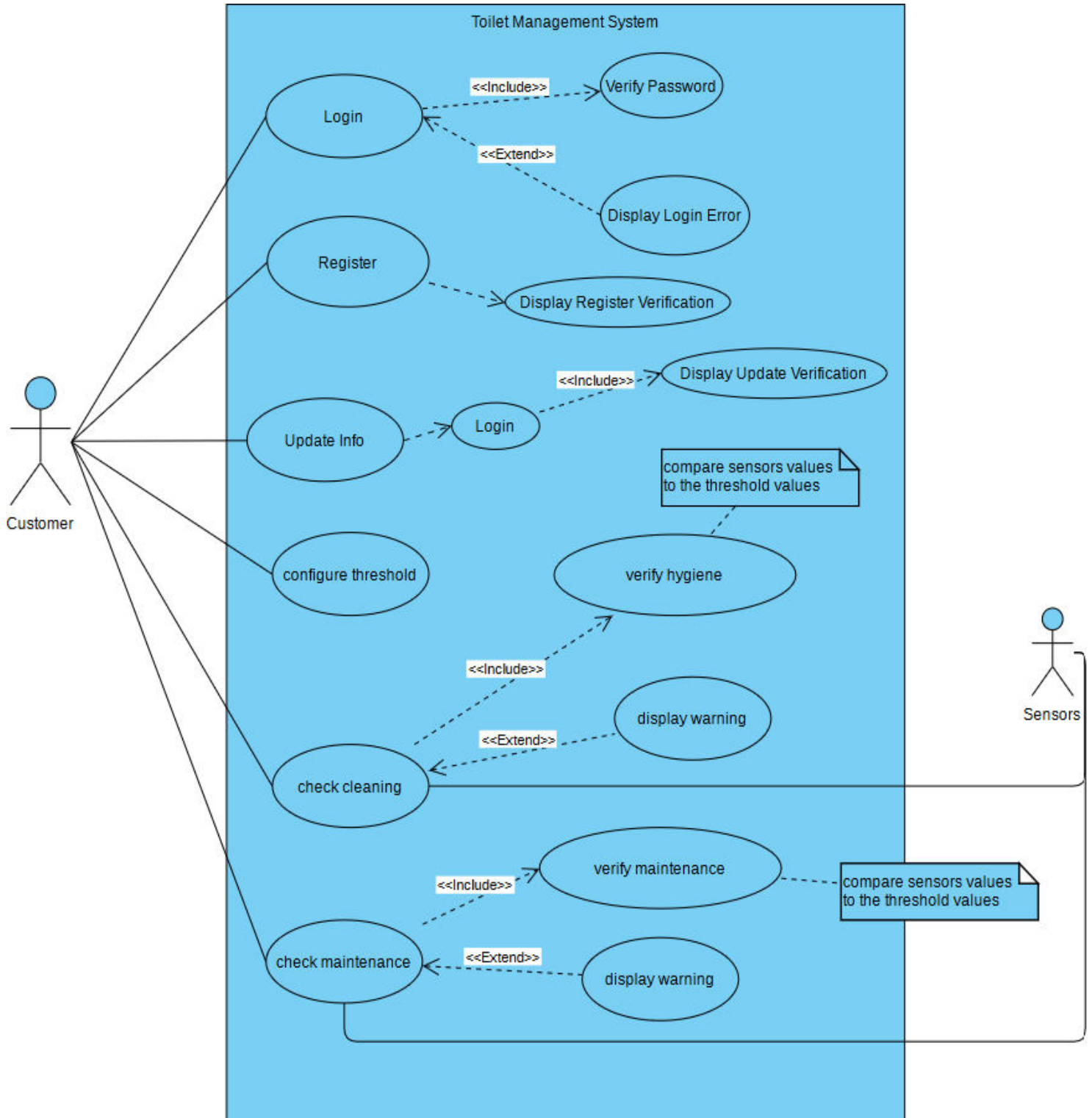

FLOW CHART FOR WORKING AND LEARNNG

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STATE DIAGRAM

USE CASE DIAGRAM

CRC DIAGRAMS

ATTRIBUTES	CLASS	RESPONSIBILITIES	COLLABORATORS
	Screen	loads UI of application	

ATTRIBUTES	CLASS	RESPONSIBILITIES	COLLABORATORS
	Logo	Confirms working of application by displaying loading bar	Mainpage

ATTRIBUTES	CLASS	RESPONSIBILITIES	COLLABORATORS
	Mainpage	redirects to login,register or update info interface of application	1. login 2. register 3. updateinfo

ATTRIBUTES	CLASS	RESPONSIBILITIES	COLLABORATORS
1. Username 2. Id / password	Login	1. logs in user and redirects him to cleaning system interface. 2. checks whether user credentials have correct datatype or not.	CleaningSystem

ATTRIBUTES	CLASS	RESPONSIBILITIES	COLLABORATORS
1. name 2. Id 3. email id 4. Contact no.	register	1. registers new user and stores his credentials into JDBC. 2. verifies credentials datatype entered are correct. 3. Redirects to login interface.	Login

ATTRIBUTES	CLASS	RESPONSIBILITIES	COLLABORATORS
1. Name 2. Id 3. email id 4. contact no.	updateinfo	1. Allows user to update his credentials. 2. verifies correct datatype for credentials. 3. redirects to mainpage after updation.	Mainpage

ATTRIBUTES	CLASS	RESPONSIBILITIES	COLLABORATORS
1. MQ2 value 2. NTU value	hygieneConfig	Allows to change configuration of MQ@ and NTU values.	1. Mainpage 2. Maintenance System 3. Cleaning System 4. Update info 5. Login

ATTRIBUTES	CLASS	RESPONSIBILITIES	COLLABORATORS
1. MQ2 value 2. NTU value	Cleaning System	1. Displays readings of MQ2, NTU sensors in restroom. 2. Notifies staff for values greater than threshold.	1. Mainpage 2. Maintenance System 3. hygieneConfig 4. Update info 5. Login

ATTRIBUTES	CLASS	RESPONSIBILITIES	COLLABORATORS
1. trash 2. tissue_paper 3. toilet_paper 4. soap	MaintenanceSystem	1. Displays amount of consumables remaining and percentage of trashbox filled. 2. Notifies staff for the consumables that need to be refilled.	1. Mainpage 2. Cleaning System 3. hygieneConfig 4. Update info 5. Login