

Bela-Sheshe

(Elderly Assistance and Old Home Management System)

Group 2

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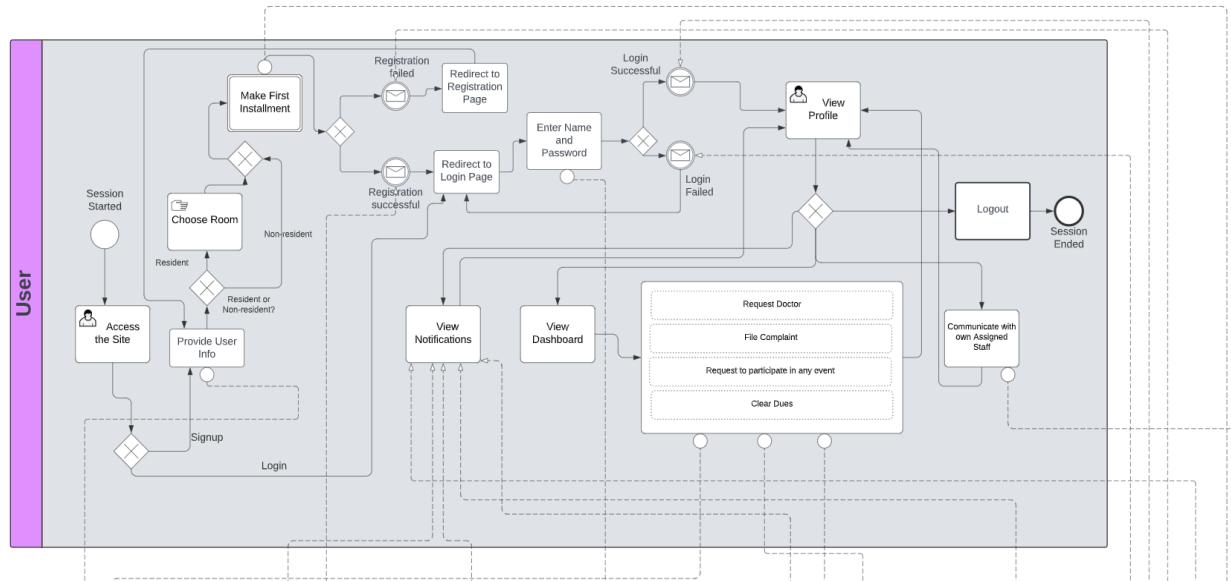
Motivation

- Effectively maintain and automate the multitude of tasks regarding the running of the institution.
- Create a suitable environment for the elderly and their family to properly monitor the daily routine, health and meals.
- Analyze data, manage staff and resources by the administration.
- Smoothly provide medical care and assistance along with the opportunity to engage in a community or ensure means of entertainment for the elderly.
- One of the primary motivations is to improve the quality of care provided to elderly individuals. Such a website can offer tools and resources to help caregivers better manage the health, well-being, and daily activities of elderly loved ones.
- Regular health monitoring is crucial for the elderly, especially those with chronic conditions. A website can track vital health metrics, medication schedules, and doctor's appointments, helping to manage health effectively.
- Ensuring that elderly individuals take their medications correctly is essential. An online system can offer medication reminders and even facilitate prescription refills.
- Loneliness and social isolation are common issues among the elderly. An elderly management system website can facilitate social engagement through features like social events, forums, or virtual events.
- Every elderly individual has unique needs and preferences. The website can allow for customization and personalization of care plans and services, ensuring a tailored approach.
- For healthcare providers, an elderly management system can aid in complying with regulations and ensuring accountability in care delivery.
- Many elderly individuals prefer to age in place, staying in their own homes rather than moving to assisted living facilities. An elderly management system website can assist in making this possible by providing tools for remote monitoring, health tracking, and assistance.

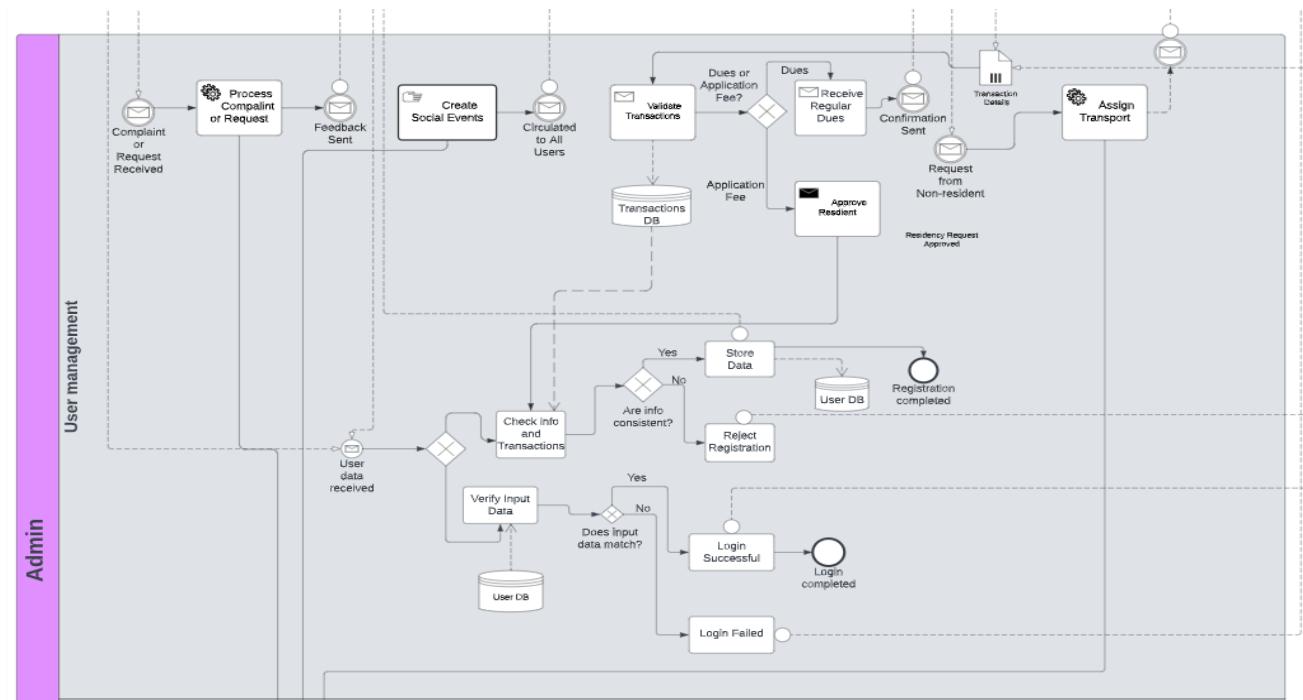
BPMN diagram

Our initial BPMN diagram was-

- **Pool Name:** User

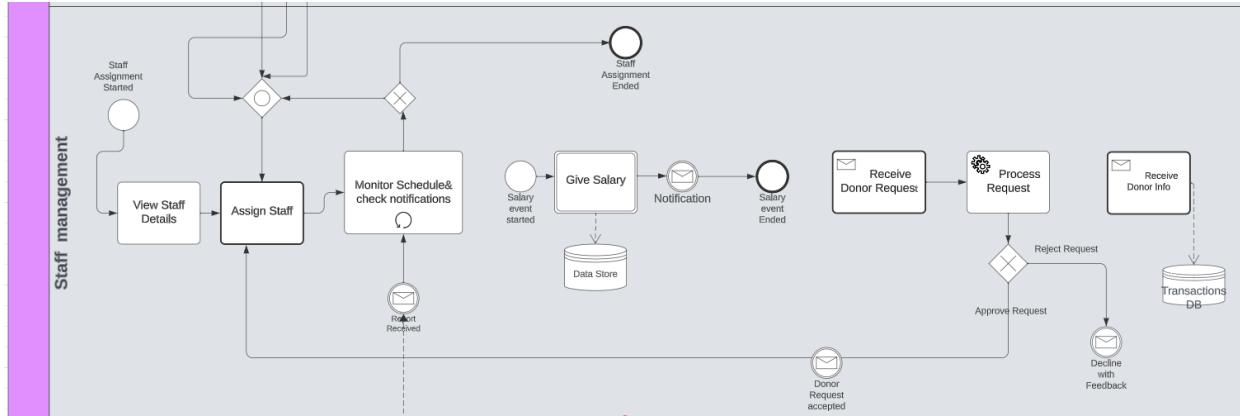


- **Pool Name:** Admin (User Management Lane)

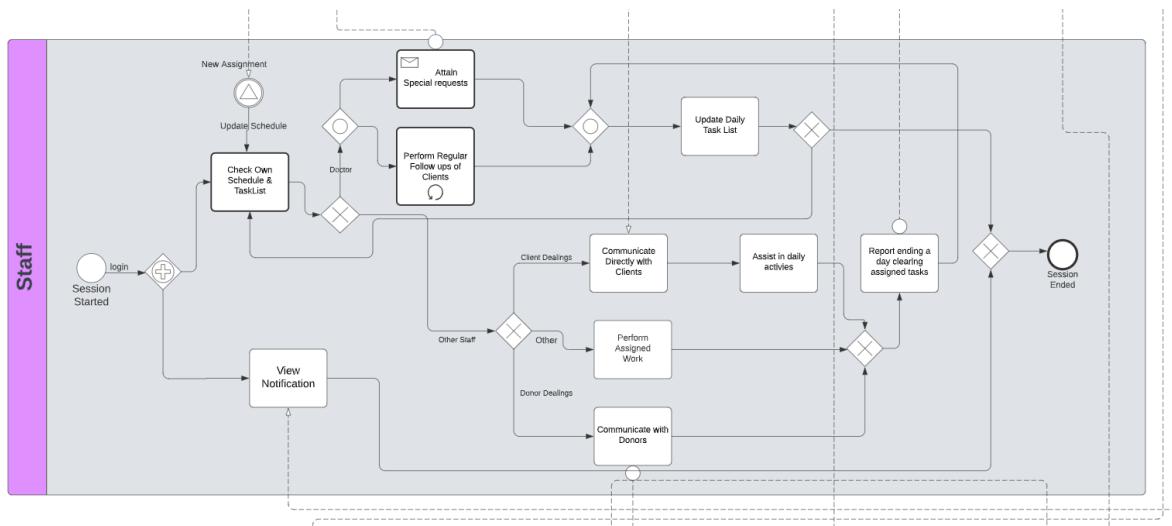


- **Pool Name:** Admin

Lane: Staff Management



- **Pool Name:** Staff (Previous Version)



- In the staff pool we had to make a lot of changes as per requirement. The improved version contains 3 lanes:

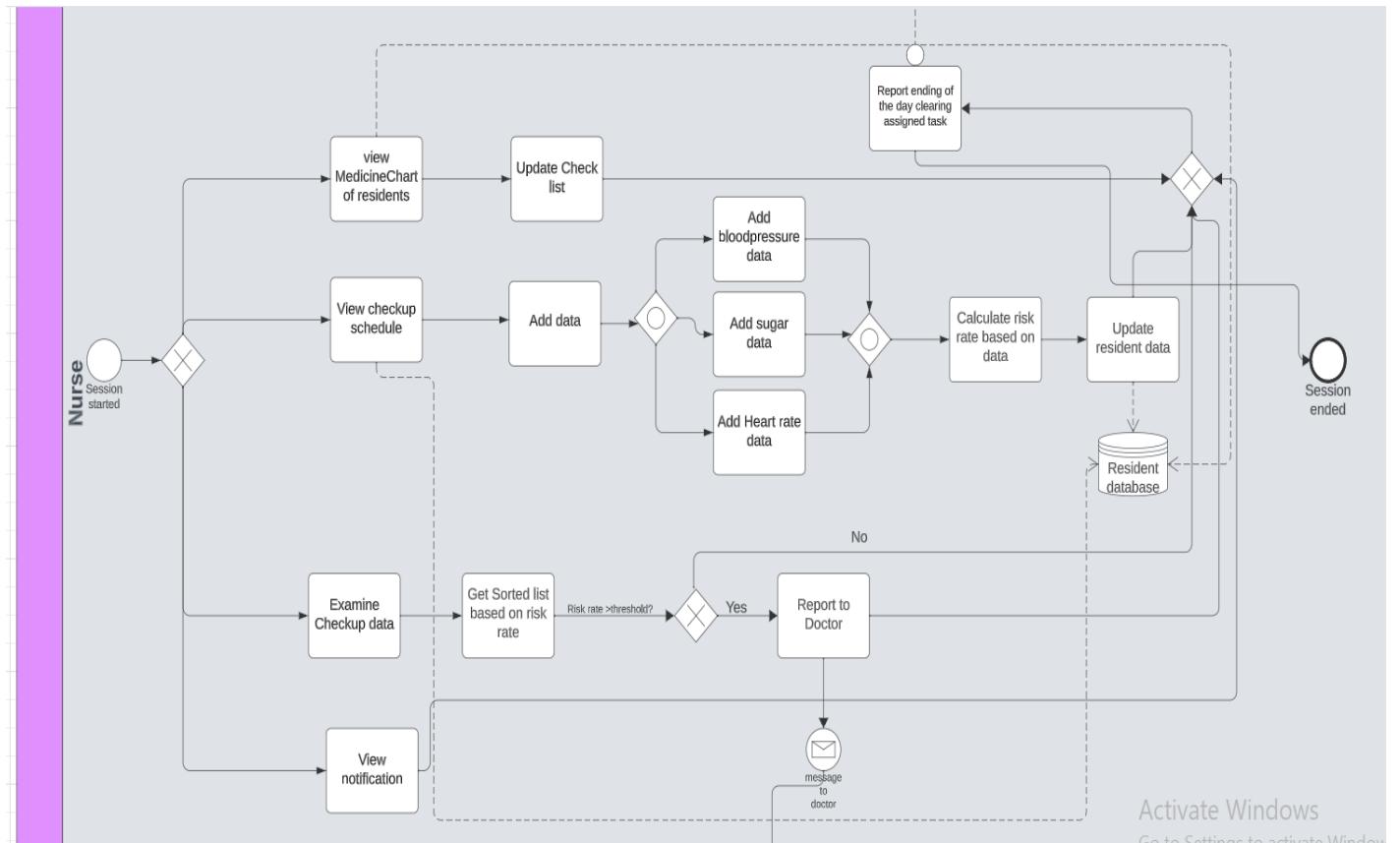
1. Nurse Lane
2. Doctor Lane
3. Meal Manager Lane

The improved version of the Staff Pool is provided below:

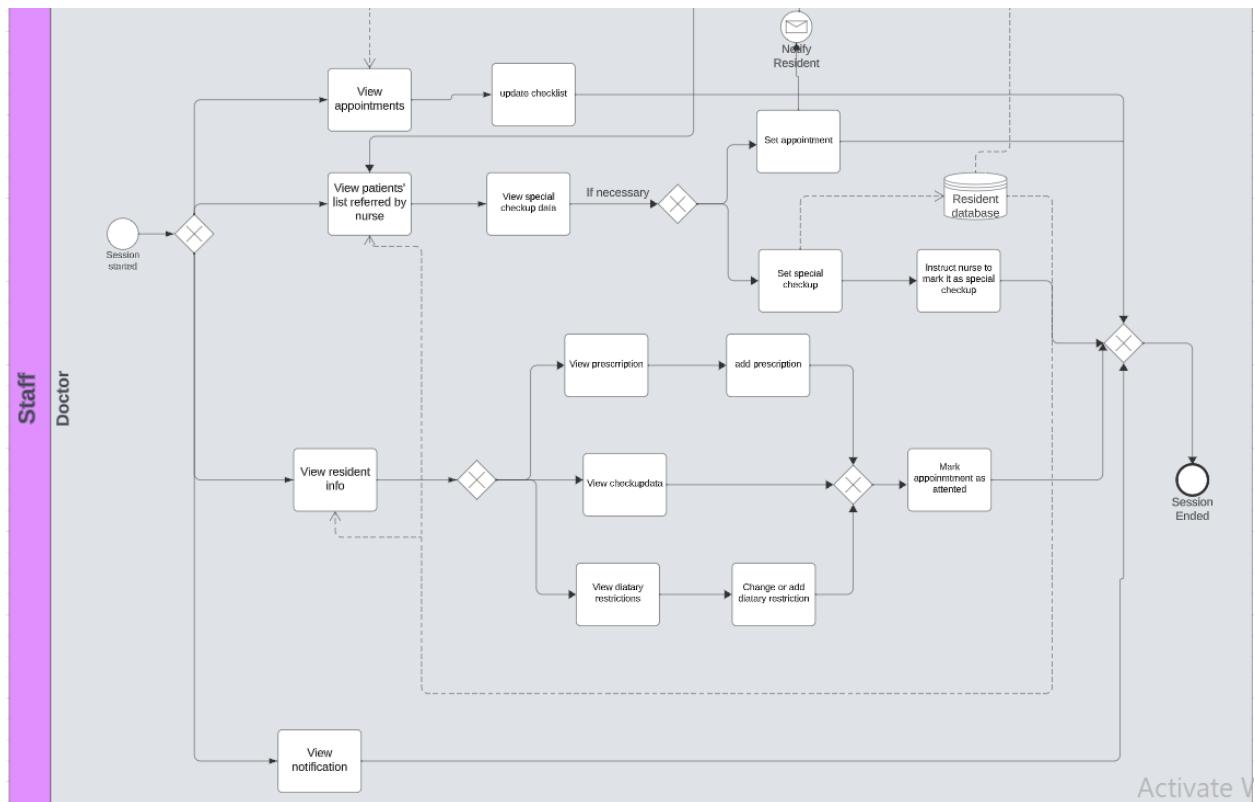
Changes in Staff Pool

- **Pool Name:** Staff (Improved Version)

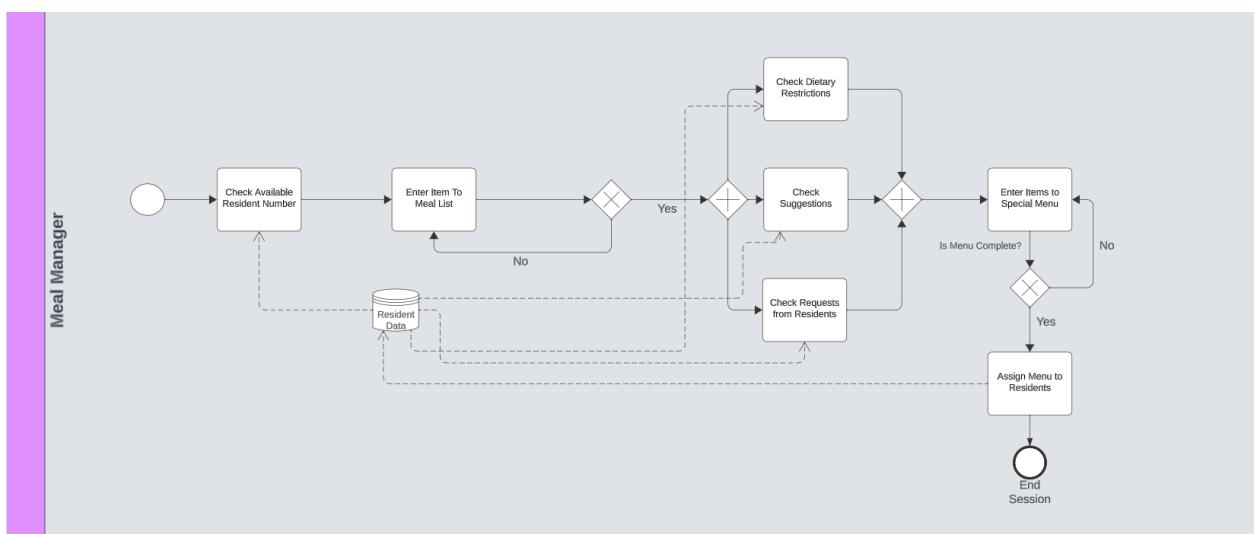
Lane : Nurse



Lane : Doctor



Lane : Meal-manager



MOCK UI DESIGN

Our mock UI has the following format-

- Home page:

BELA SHESHE
ELDERLY ASSISTANCE AND OLD HOME MANAGEMENT

Home About Us Contact Us Signup Login

EVERY ELDERLY DESERVES
LOVE, CARE & RESPECT

Lorem ipsum dolor sit amet, consectetur
adipiscing elit. Nullam dignissim tincidunt.

Contact Us
Phone: 01721xxxxxx
Email: info@belasheshe.com
Address: West Palashi, Dhaka-1000

Our location

BELA SHESHE ©2023. All rights reserved

Changes in Resident module

- **Dashboard:** (improved version) We included the resident's medical condition(s) and activity growth graph.

The screenshot displays the improved Resident Dashboard for 'BELA SHESHE'. The dashboard includes:

- Activity Growth:** A bar chart showing activity levels from Jan. 2023. The Y-axis ranges from 0% to 100%. The legend indicates three categories: Aerobics (red), Yoga (teal), and Meditation (orange).
- Your Medical Condition(s):**
 - Hypertension:**
 - Advice:** Maintain a healthy diet low in sodium, exercise regularly.
 - Guidelines:** Follow the Dietary Approaches to Stop Hypertension (DASH) diet, monitor blood pressure regularly.
 - Type 2 Diabetes:**
 - Advice:** Monitor blood sugar levels, maintain a balanced diet, engage in physical activity.
 - Guidelines:** Take prescribed medications.
- Appointments:** A list of scheduled appointments with Dr. Amisha Smith, categorized by initials (SM, AD, DJ, SM) and visit type (Weekly Visit, Routine Checkup, Weekly Visit, Weekly Visit). Times range from 9:25 AM to 10:15 AM.
- Daily Task:** A timeline of daily tasks from 10:00 to 08:00, including 'Yoga session' (blue), 'Lunch' (yellow), 'Routine Checkup' (orange), 'Book Review session' (red), and 'Monthly Home Meeting' (grey).
- Dues:** A section for monthly dues, showing:
 - Monthly Due - July:** Amount 1000/-, Due Date 10 July, 2023, Status Pending.
 - Dining Fee - July:** Amount 4000/-, Due Date 10 July, 2023, Status Pending.

- **Register and login page:** We have discarded the Login and Register pages since we were discouraged from including them.

- **Health & diet:** Residents can check their daily menu and report any issue..

BELA SHESHE

Search ...

Welcome Back!
Kaji Maruf

Home
Dashboard
Events
Payment
Health & Diet
Daily Activity

Today's menu Allergy Information

Breakfast
Notes:
Here's an item
Here's an item
Here's an item

Lunch
Notes:
Here's an item
Here's an item
Here's an item

If you have any problem with the menu please describe here

+ New Item

Submit

Log out

They can also add their allergy information and dietary restrictions.

BELA SHESHE

Search ...

Welcome Back!
Kaji Maruf

Home
Dashboard
Events
Payment
Health & Diet
Daily Activity

Today's menu **Allergy Information**

ALLERGY INFORMATION

CAUSE	SYMPOMTS	MEDICINE	NOTE
Shrimp	Swelling	kwejrhfh	kwejrhfh
Peanuts	Asphyxiation	kwejrhfh	kwejrhfh
Dust	Rashes	kwejrhfh	kwejrhfh

ADD MORE EDIT INFORMATION

DIETARY RESTRICTIONS

ISSUES	RESTRICTED ITEM	NOTE
Kidney F... kwejrhfh kwejrhfh	beef kwejrhfh kwejrhfh	allowed once a month kwejrhfh kwejrhfh

ADD MORE EDIT INFORMATION

SAVE AND SUBMIT

Log out

- **Events page:** (improved version) Instead of a single Community page, we have included two pages for regular events and special events as per the feedback.

Regular events:

Special events:

- A schedule for daily activities:

Admin module

- **Dashboard:** It gives an overview of the admin's upcoming meeting schedule with residents and staff, as well as a statistics showing the number of times the users have visited the site in a year.

Daily Task	Time	Venue	Status	Follow Up Action
⌚ Meeting with Residents	10:00 am	Auditorium	Done	No
⌚ Meeting with Staffs	11:00 am	Online Event	Done	No
⌚ Meal Approval	12:00 pm	N/A	Done	No
⌚ Staff Report Check	8:00 pm	N/A	Pending	No
⌚ Cameron William...				

- **User management page:** gives an overview of the current residents

The screenshot shows the 'User Management' section of the BELA SHESHE application. The left sidebar includes links for Home, Settings, + New Item, User Management (Members, Applicants, Payment, Healthcare), Event, Schedule, Staff Management (Total Staff: 1,326), and Meal management. The main content area has tabs for Add new post, + Add Content, and Settings. It features four summary boxes: Total Residents (4726), Total Non-residents (456), Total Members (5,325), and Total Staff (1,326). Below these are sections for USER DATA, allowing selection by User Type (All) and search by Name. A table lists six user entries with columns for NAME, TYPE, DATE OF BIRTH, EMAIL, PHONE NUMBER, and ACTION (edit and delete icons). At the bottom, it shows 144 Total and a page navigation bar.

NAME	TYPE	DATE OF BIRTH	EMAIL	PHONE NUMBER	ACTION
Abc	Non-Resident	17-03-1960	lakhan123@gmail.com	+9876543210	
Abcd	Resident	17-03-1960	lakhan123@gmail.com	+9876543210	
Def	Resident	17-03-1960	lakhan123@gmail.com	+9876543210	
Defg	Non-Resident	17-03-1960	lakhan123@gmail.com	+9876543210	
Ijk	Resident	17-03-1960	aeran123@gmail.com	+9876543210	
Ijkl	Non-Resident	17-03-1960	irankis123@gmail.com	+9876543210	

- **Event creation:** this page is to create events from the admin side.

Create and Manage Events

Events You Manage

<p>Intrahouse chess tournament</p> <p>Saturday, March 18, 9:30PM</p> <p>Place : common room</p>	<p>Yoga session</p> <p>Saturday, March 18, 7:30PM</p> <p>Place : Gymnasium</p>	<p>Movie night!</p> <p>Movie: Sagorika</p> <p>Starring: Uttom kumar, Suchitra sen</p> <p>Saturday, March 18, 9:30PM</p> <p>Place : Common room</p>
<p>Weekly book review Session</p> <p>Saturday, March 18, 9:30PM</p> <p>ONLINE EVENT - Attend anywhere</p>	<p>BestSeller Book Bootcamp - write, Market & Publish Your Book -Lucknow</p> <p>Saturday, March 18, 9:30PM</p> <p>ONLINE EVENT - Attend anywhere</p>	<p>+</p> <p>CREATE NEW EVENT</p>

Changes in Meal Manager Module

- **Food issue:** A meal manager can issue meals one by one, if the issued meal conflicts with some users restricted food list, it will be shown in the dietary restriction conflict part.

The screenshot shows the 'Today's meal' section of the application. On the left, a sidebar menu includes options like '+ New Item', 'profile', 'Events', 'Schedule', 'Set meal', 'Notification' (which is selected), and 'Complain'. The main area displays four input fields for meal components: 'Breakfast' (Bread), 'Snacks' (Omthon), 'Lunch' (Rice), and 'Dinner' (Rice). Each field has an 'Add More' button and an 'Add' button. A large 'Check' button is centered at the bottom.

This screenshot shows the 'Dietary Restriction Conflict' section. It includes fields for 'Name' (Rice), 'Restriction' (Carbohydrate), 'Add Special Menu', 'Suggestion' (Bread), 'Request' (At least 3 breads for each diabetic person), and 'Add to Menu' (Bread). Each of these fields has an 'Add More' button and an 'Add' button. At the bottom left, there is a 'Log out' link.

- Daily expense list:

The screenshot shows the BELA SHESHE mobile application interface. At the top, there is a navigation bar with icons for Home and Settings, and a logo for BELA SHESHE. Below the navigation bar is a search bar with placeholder text "Search content..." and a magnifying glass icon.

In the center, the title "Generate daily list" is displayed above a date box showing "15-07-2023 Saturday". To the right of the date box is a "Generate" button. On the far left, a vertical sidebar contains navigation links: "+ New Item", "profile", "Events", "Schedule", "Set meal", "Notification" (which is selected, indicated by a blue dot), and "Complain".

Below the date box is a section titled "USERS DIET" with a table. The table has three columns: "ITEM NAME", "AMOUNT", and "COST". The data is as follows:

ITEM NAME	AMOUNT	COST
Rice	32 kg	1500/=
Vegetable	15 kg	1000/=
Fish	4 kg	3000/=
Chicken	5 kg	3000/=

Below the table, there is a link "View more →" and a total cost summary: "Total cost: 8500/=". At the bottom right of the diet section is an "Order" button. At the very bottom left of the screen is a "Log out" button.

- Monthly expense list:

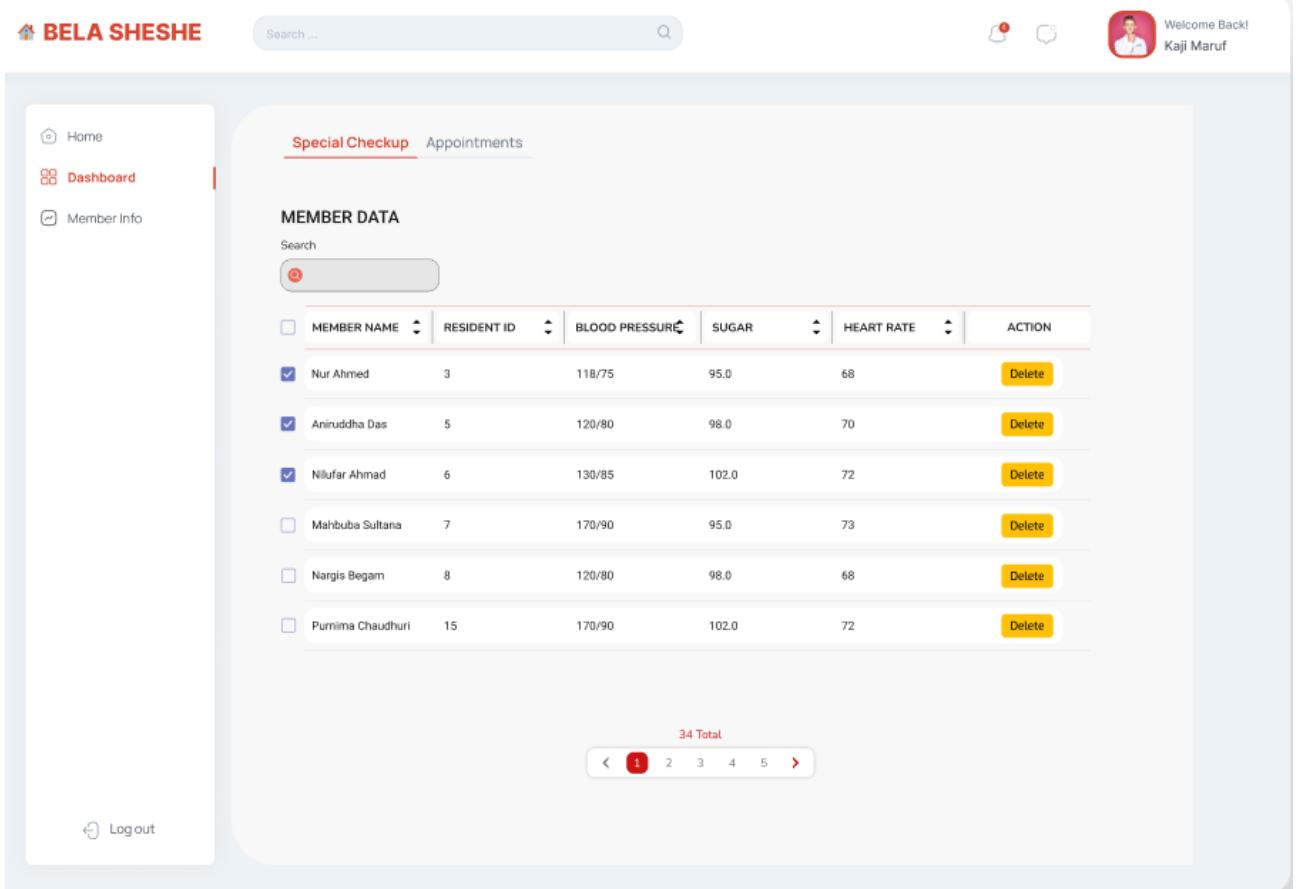
The screenshot shows the BELA SHESHE mobile application interface. At the top, there is a navigation bar with 'Home' and 'Settings' icons on the left, and a logo 'BELA SHESHE' with a house icon on the right. A search bar with placeholder text 'Search content...' and a magnifying glass icon is located at the top right.

The main content area has a title 'Generate montly list' and a large blue button labeled 'July'. Below this is a dark button labeled 'Generate'. The section titled 'USERS DIET' contains a table with three columns: 'ITEM NAME', 'AMOUNT', and 'COST'. The table shows one item: 'Rice' with '150 kg' and a cost of '7500/='. There is a 'View more →' link below the table. A total cost of '7500/= is displayed. At the bottom right is a dark button labeled 'Order'. At the bottom left is a 'Log out' button.

ITEM NAME	AMOUNT	COST
Rice	150 kg	7500/=

Changes in Doctor module

- **Dashboard:** Doctor can view the details of his patients based on the risk rate and prioritize the patients with the most risk rate.



The screenshot shows the BELA SHESHE Doctor module interface. At the top, there is a header with the logo 'BELA SHESHE', a search bar, and a welcome message 'Welcome Back! Kaji Maruf'. On the left, a sidebar menu includes 'Home', 'Dashboard' (which is currently selected), and 'Member Info'. The main content area is titled 'Special Checkup' and 'Appointments'. It features a 'MEMBER DATA' section with a search bar and a table displaying patient information. The table columns are MEMBER NAME, RESIDENT ID, BLOOD PRESSURE, SUGAR, HEART RATE, and ACTION. The data in the table is as follows:

MEMBER NAME	RESIDENT ID	BLOOD PRESSURE	SUGAR	HEART RATE	ACTION
Nur Ahmed	3	118/75	95.0	68	<button>Delete</button>
Aniruddha Das	5	120/80	98.0	70	<button>Delete</button>
Nilufar Ahmad	6	130/85	102.0	72	<button>Delete</button>
Mahbuba Sultana	7	170/90	95.0	73	<button>Delete</button>
Nargis Begam	8	120/80	98.0	68	<button>Delete</button>
Purnima Chaudhuri	15	170/90	102.0	72	<button>Delete</button>

At the bottom of the table, it says '34 Total' and has a page navigation bar with buttons for 1, 2, 3, 4, 5, and >. A 'Logout' button is located at the bottom left of the main content area.

- Patient info:

The screenshot shows a web-based application interface for 'BELA SHESHE'. At the top, there is a navigation bar with links for 'Home', 'Dashboard', and 'Member Info'. On the right side of the header, there is a search bar, a user profile icon for 'Kaji Maruf', and a 'Welcome Back!' message.

The main content area is titled 'Resident Status' and 'Special Checkup Report'. It features a 'MEMBER DATA' section with a table. The table has columns for 'MEMBER NAME', 'RESIDENT ID', 'RISK RATE', and 'ACTION'. There are six rows of data, each with a 'View' button. The data is as follows:

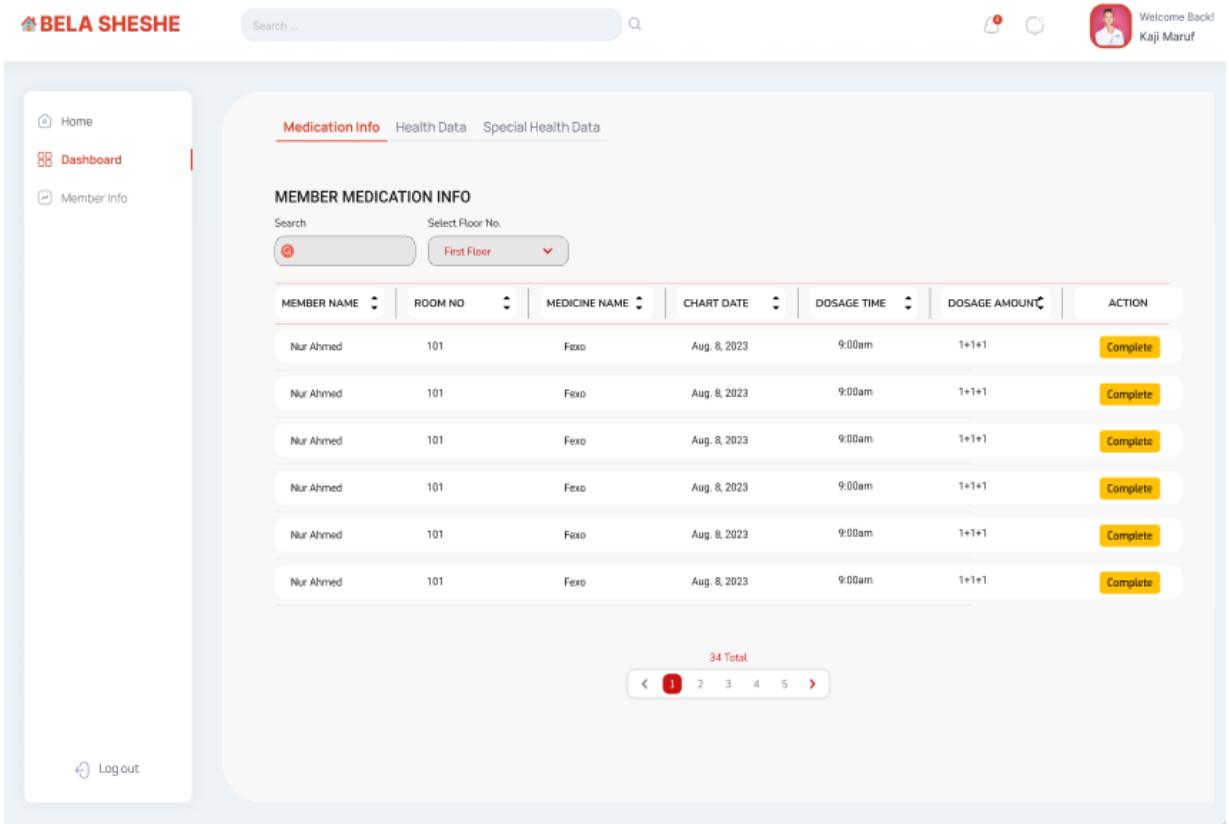
MEMBER NAME	RESIDENT ID	RISK RATE	ACTION
Nur Ahmed	3	3	<button>View</button>
Aniruddha Das	5	3	<button>View</button>
Nilufar Ahmad	6	2	<button>View</button>
Mahbuba Sultana	7	2	<button>View</button>
Nargis Begam	8	1	<button>View</button>
Purnima Chaudhuri	15	0	<button>View</button>

At the bottom of the table, it says '34 Total' with a page navigation bar showing pages 1 through 5.

On the left side of the main content area, there is a sidebar with a 'Logout' link.

Changes in Nurse module

- **Dashboard:** This page is the daily medicine schedule of the nurse.



The screenshot shows the BELA SHESHE nurse dashboard. At the top, there is a navigation bar with links for Home, Dashboard, and Member Info. On the right side, there is a user profile icon and a welcome message: "Welcome Back! Kaji Maruf". Below the navigation bar, there is a search bar and a "Medication Info" tab which is currently selected, along with other tabs for Health Data and Special Health Data.

The main content area is titled "MEMBER MEDICATION INFO". It features a search bar and a dropdown menu for "Select Floor No." with options like "First Floor" and "Second Floor". Below this is a table listing medication tasks for patient "Nur Ahmed" in room 101. The table columns include MEMBER NAME, ROOM NO, MEDICINE NAME, CHART DATE, DOSAGE TIME, DOSAGE AMOUNT, and ACTION. Each row in the table has a "Complete" button in the ACTION column.

MEMBER NAME	ROOM NO	MEDICINE NAME	CHART DATE	DOSAGE TIME	DOSAGE AMOUNT	ACTION
Nur Ahmed	101	Fexo	Aug. 8, 2023	9:00am	1+1+1	<button>Complete</button>
Nur Ahmed	101	Fexo	Aug. 8, 2023	9:00am	1+1+1	<button>Complete</button>
Nur Ahmed	101	Fexo	Aug. 8, 2023	9:00am	1+1+1	<button>Complete</button>
Nur Ahmed	101	Fexo	Aug. 8, 2023	9:00am	1+1+1	<button>Complete</button>
Nur Ahmed	101	Fexo	Aug. 8, 2023	9:00am	1+1+1	<button>Complete</button>
Nur Ahmed	101	Fexo	Aug. 8, 2023	9:00am	1+1+1	<button>Complete</button>

At the bottom of the table, it says "34 Total". Below the table, there is a navigation bar with page numbers 1, 2, 3, 4, 5, and arrows for navigating through the results.

At the very bottom left, there is a "Log out" button.

- **Patient info:** This page is created so that a nurse can view the info of the members that they are assigned with. They can sort the members based on blood pressure, sugar or heart-rate and then fix appointment(s) for them by selecting the corresponding entry from the table. A nurse can also edit the checkup data for any member after they are done with collecting the data.

BELA SHESHE

Search ...

Welcome Back!
Kaji Maruf

Home

Dashboard

Member Info

Checkup Data Diet Restrictions

MEMBER CHECKUP DATA

SEARCH	SELECT FLOOR NO.					+ Request Appointment	
	First Floor	MEMBER NAME	ROOM NO	BLOOD PRESSURE	SUGAR	HEART RATE	ACTION
<input checked="" type="checkbox"/>	Nur Ahmed	101	118/75	95.0	68	<button>Edit</button>	
<input checked="" type="checkbox"/>	Aniruddha Das	102	120/80	98.0	70	<button>Edit</button>	
<input checked="" type="checkbox"/>	Nilufar Ahmad	103	130/85	102.0	72	<button>Edit</button>	
<input type="checkbox"/>	Mahbuba Sultan	104	170/90	95.0	73	<button>Edit</button>	
<input type="checkbox"/>	Nargis Begam	105	120/80	98.0	68	<button>Edit</button>	
<input type="checkbox"/>	Purnima Chaudhuri	106	170/90	102.0	72	<button>Edit</button>	

34 Total

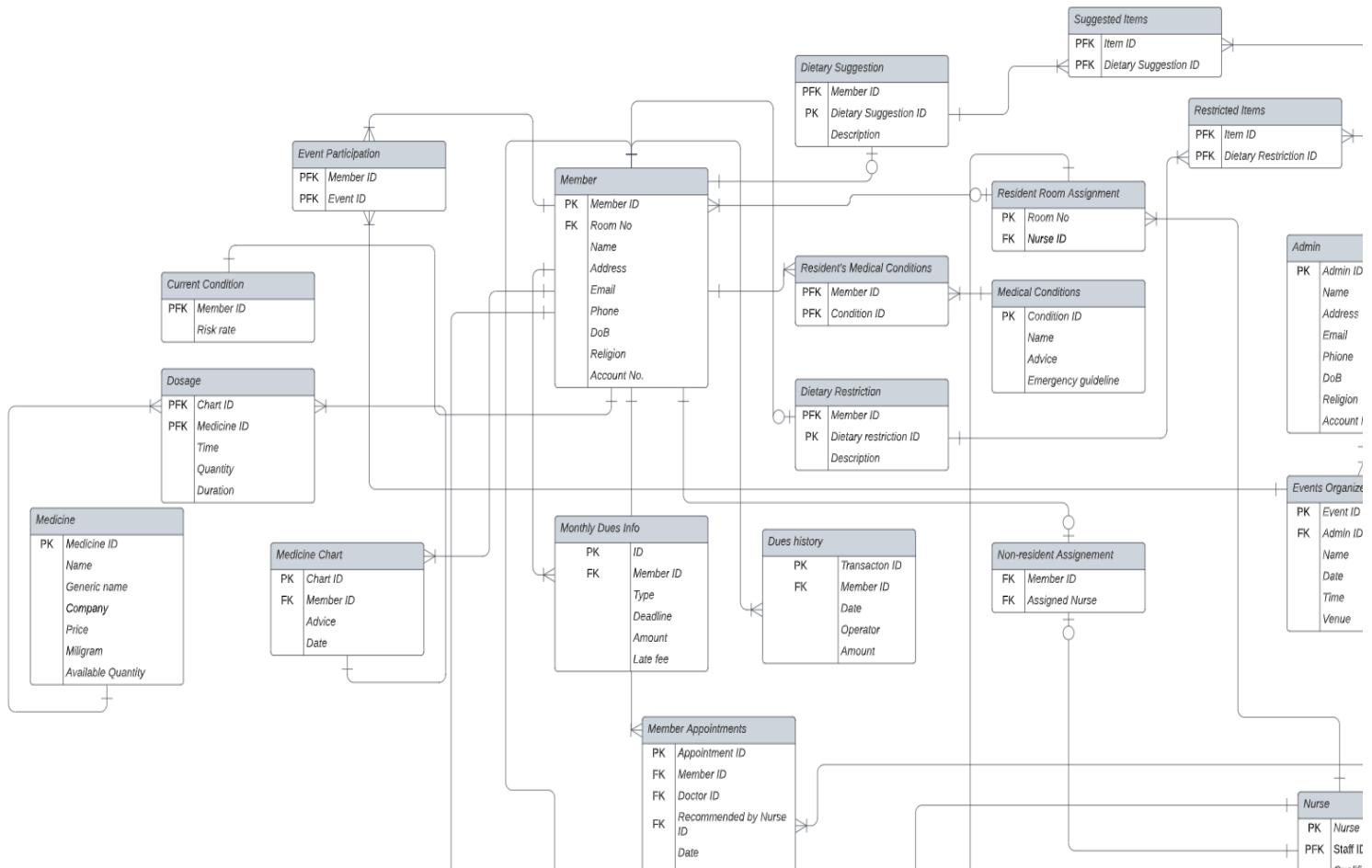
< 1 2 3 4 5 >

Log out

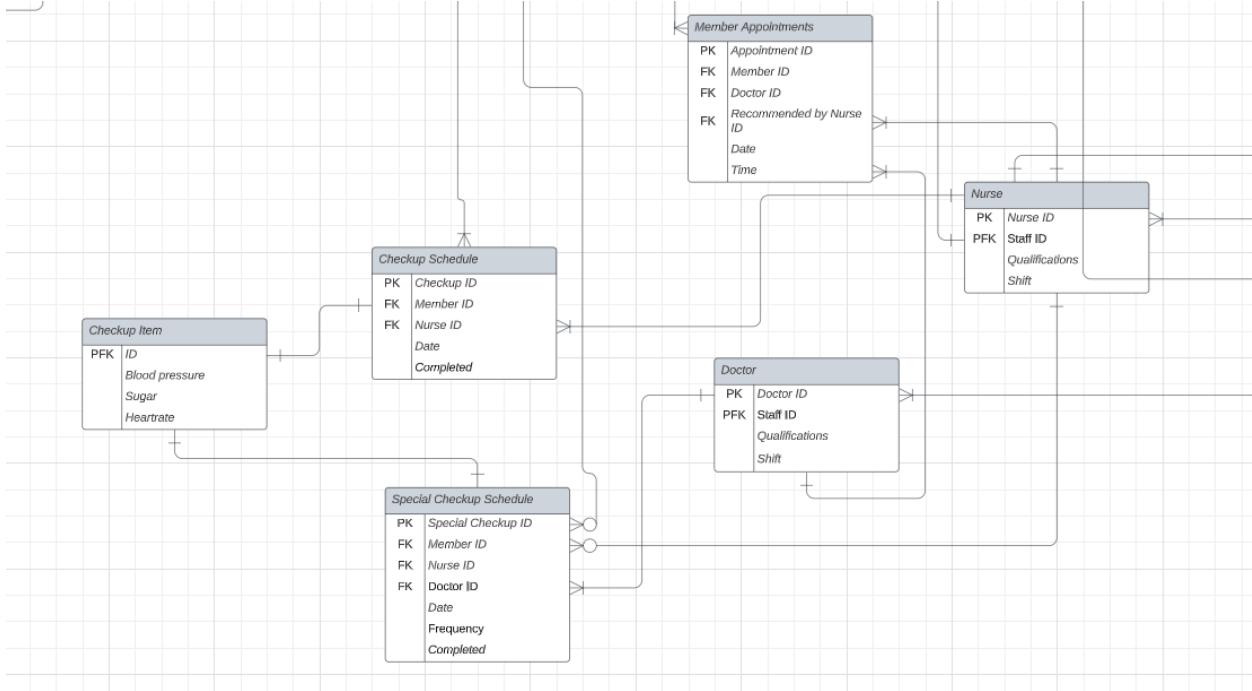
ER Diagram

In the ER diagram we only had to change a few names of the Entities. The ER diagram is given:

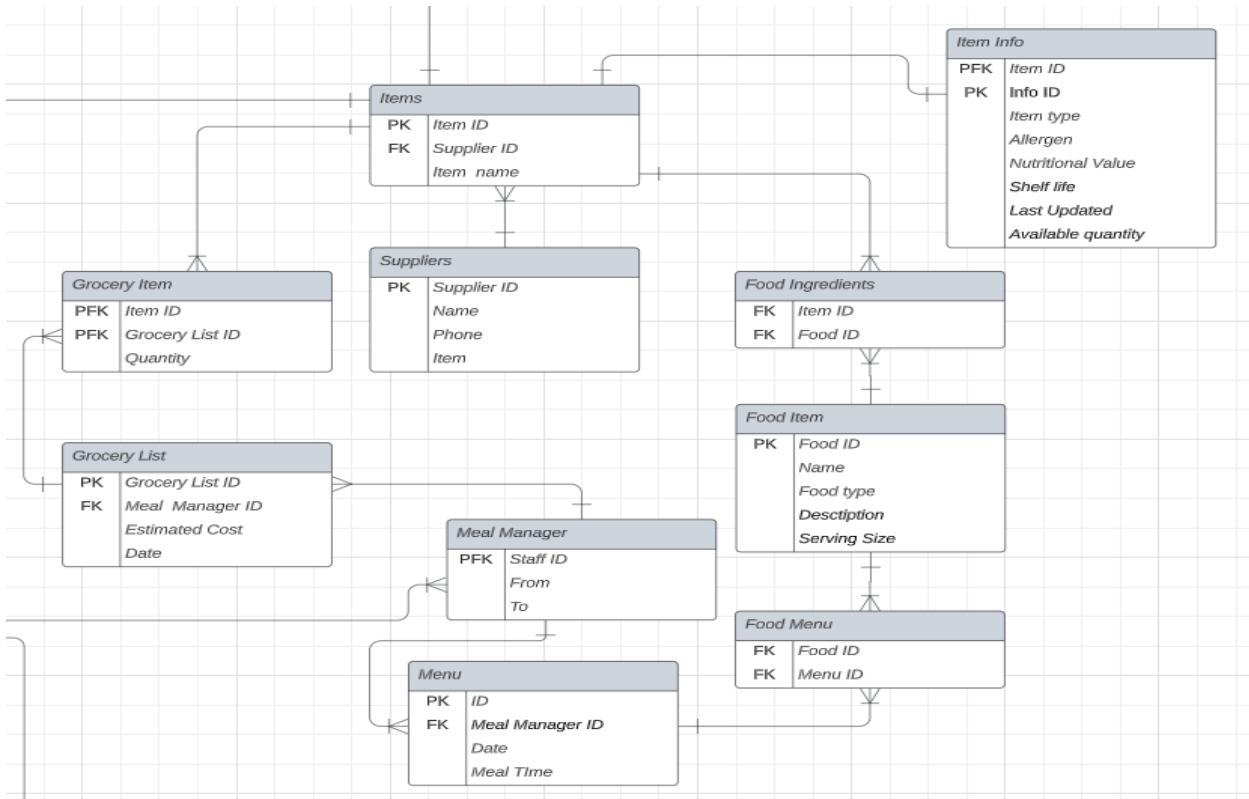
- **Member:**



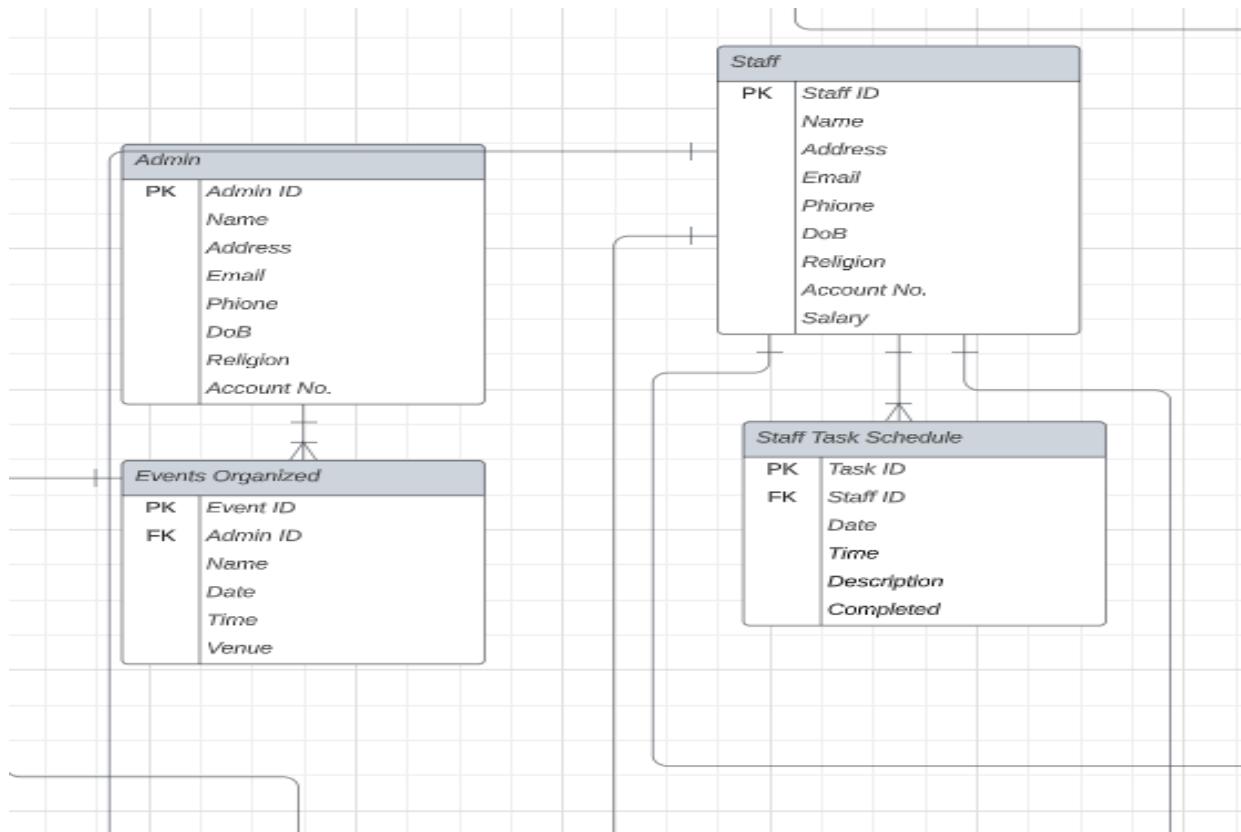
- Nurse and Doctor (Combined):



- Meal Management:



- Admin:

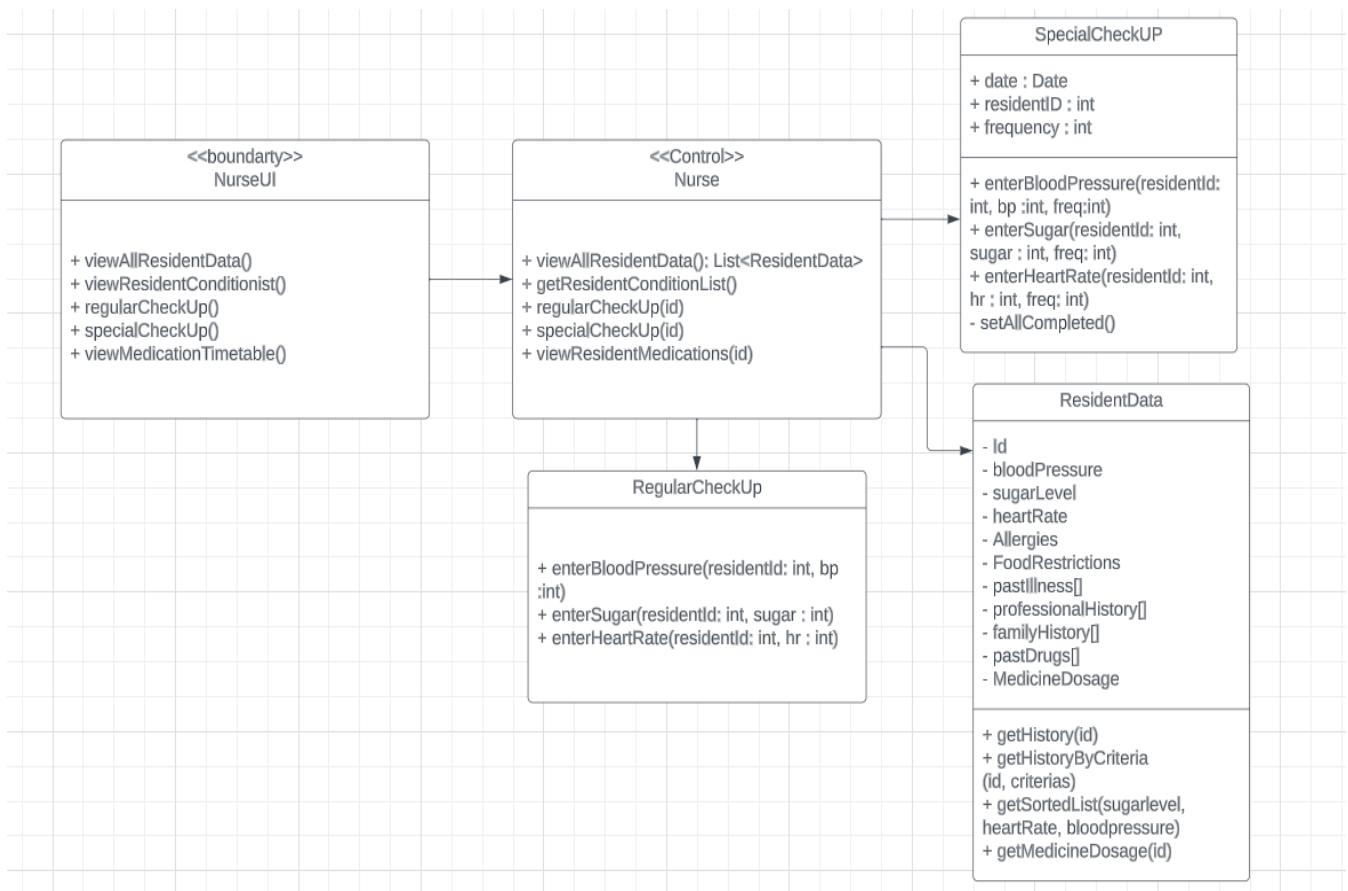


Class Diagram

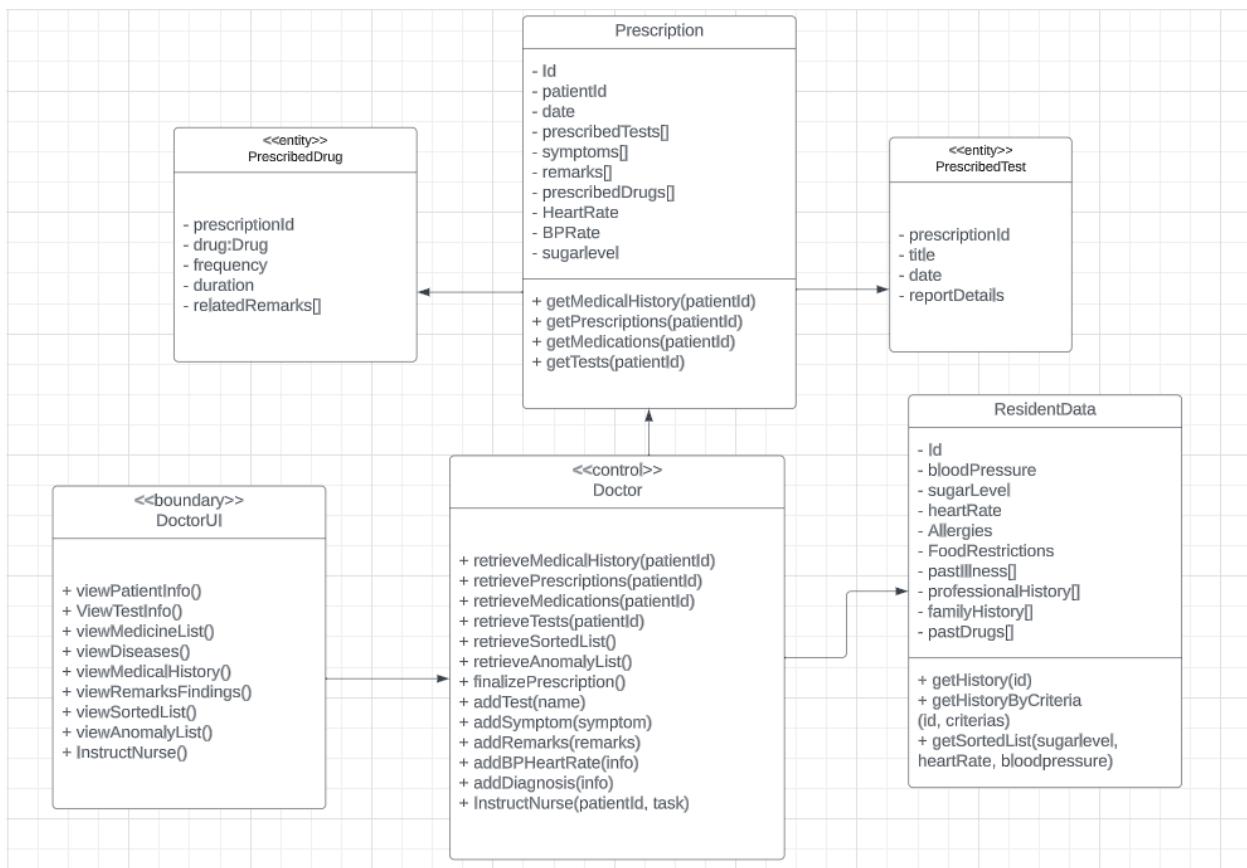
In our class diagram, we had problems regarding properly showing the flow of calling functions and also had problems regarding naming of the functions. The corrected Class Diagram is given below:

Changes in Class Diagram

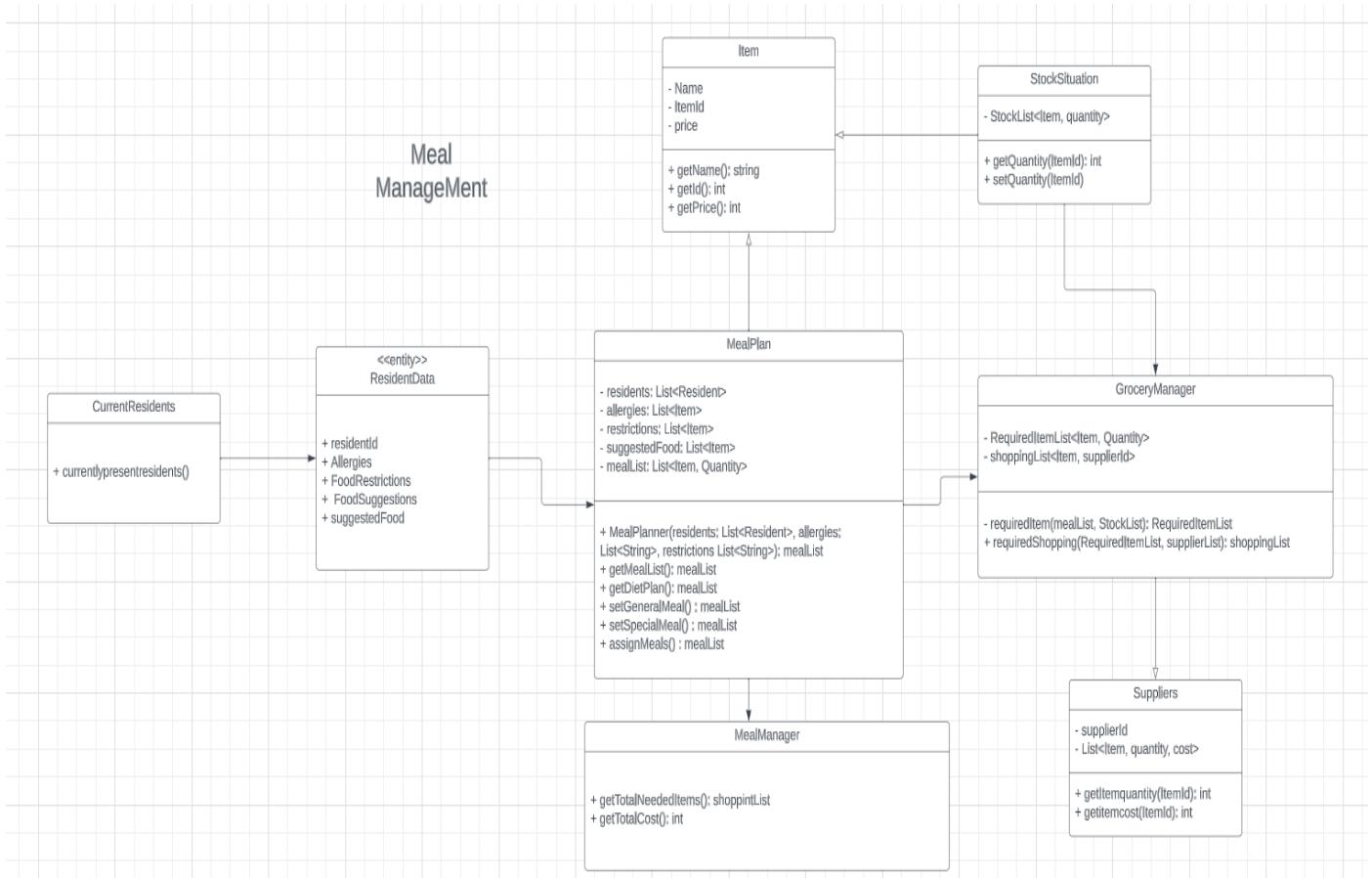
- **Nurse**



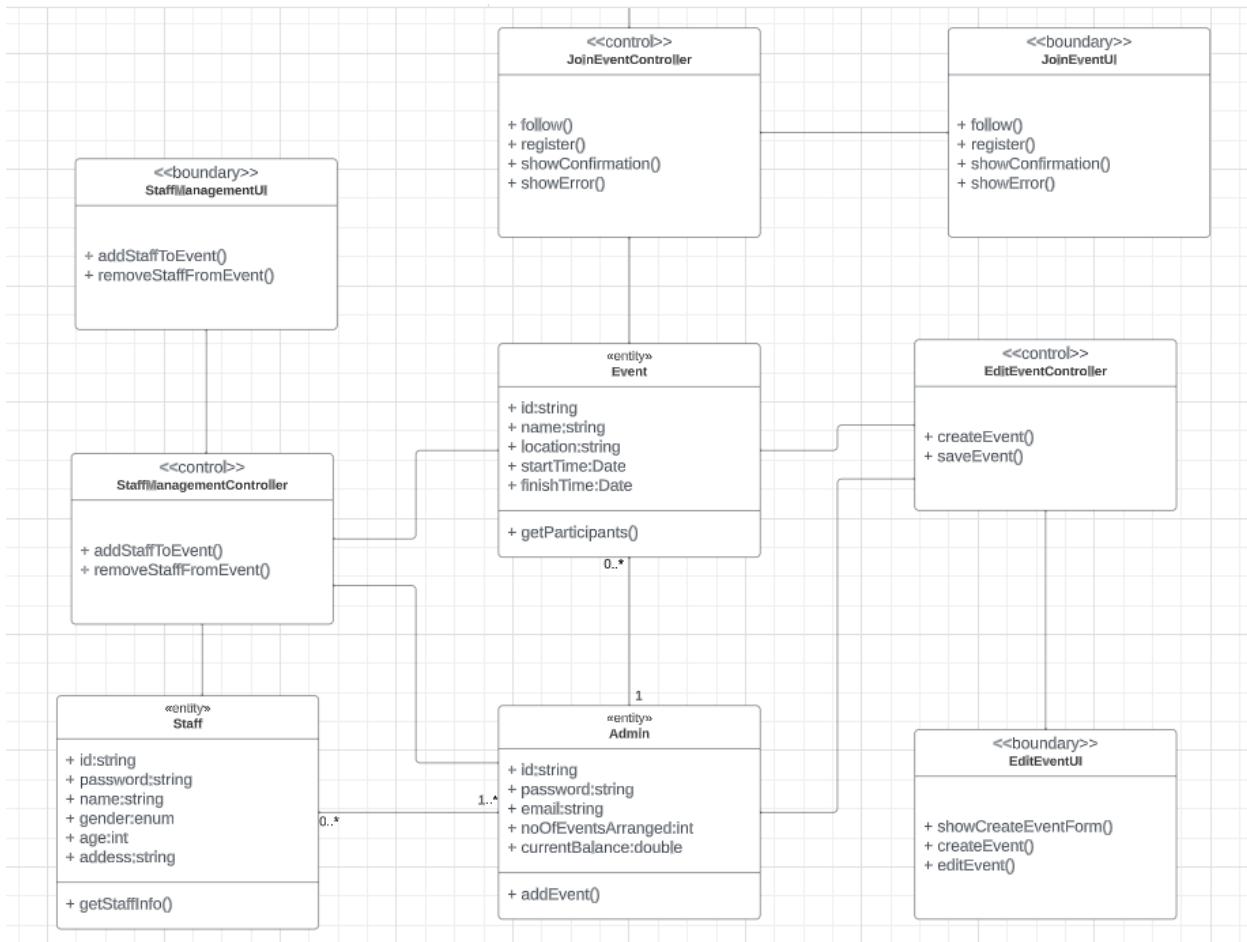
- Doctor



- Meal Management



- Event Management



Collaboration Diagram

No changes were required in our collaboration diagram. The diagrams are given:

- **Nurse Module:**

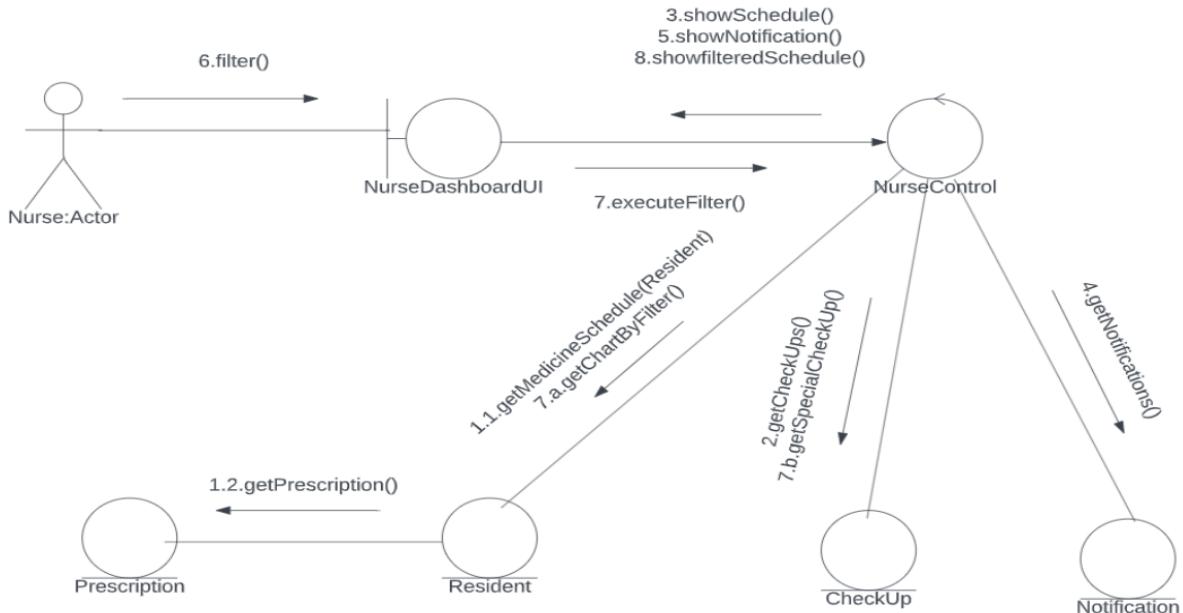


Figure: See schedule, Medicine Chart and Notifications

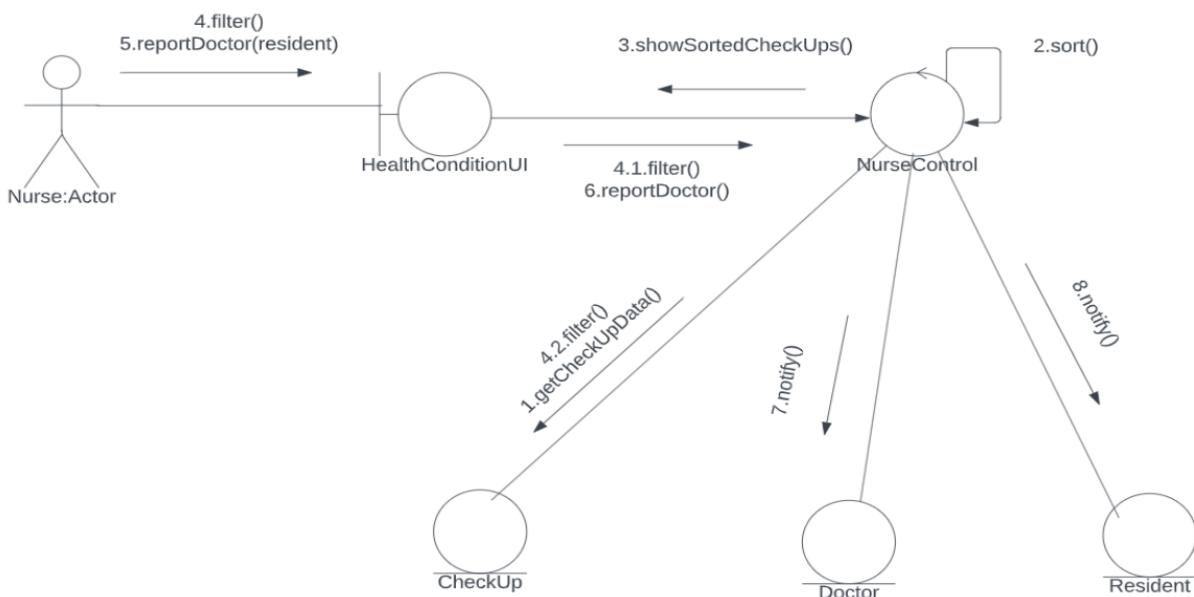


Figure: Get CheckUp Info and report to Doctor

- Doctor Module:

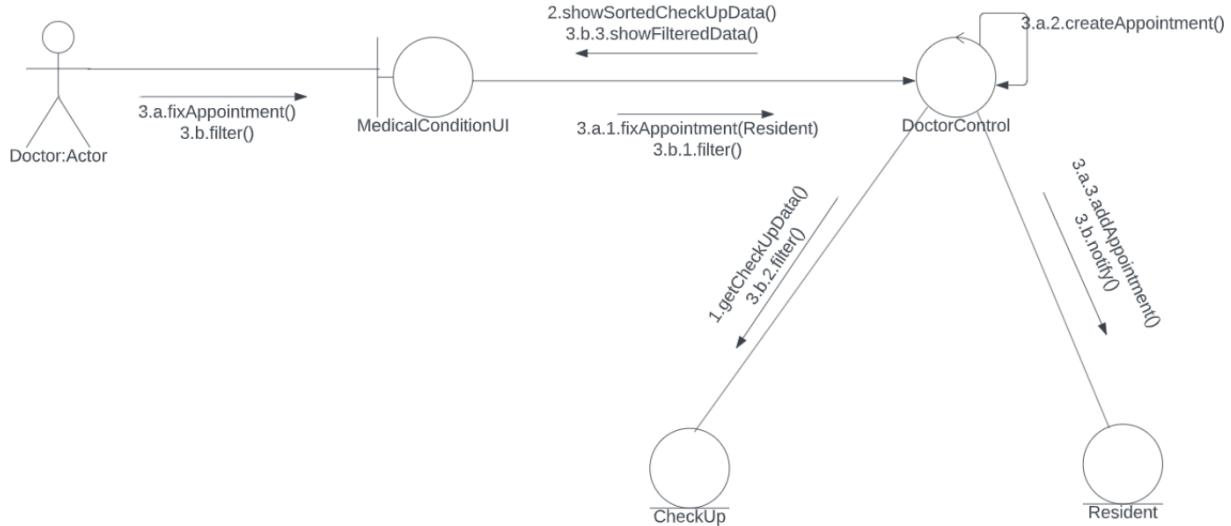


Figure: See Resident's Health condition and Appointments

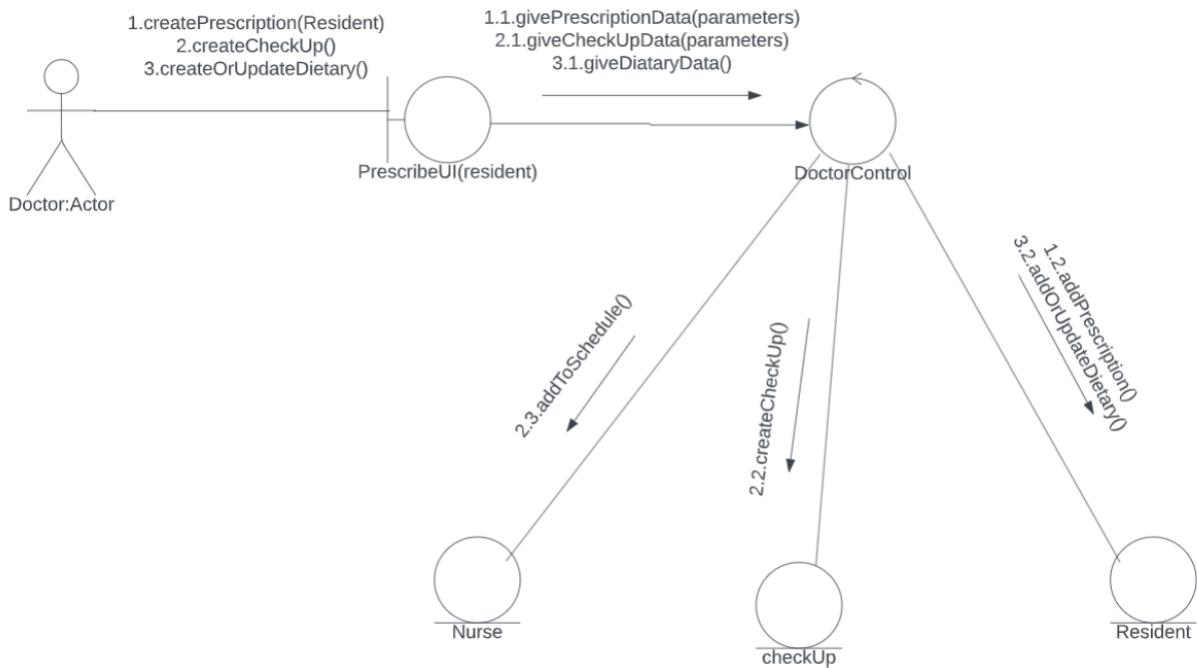


Figure: Setting prescription, checkup and dietary instructions

- Meal Manager:

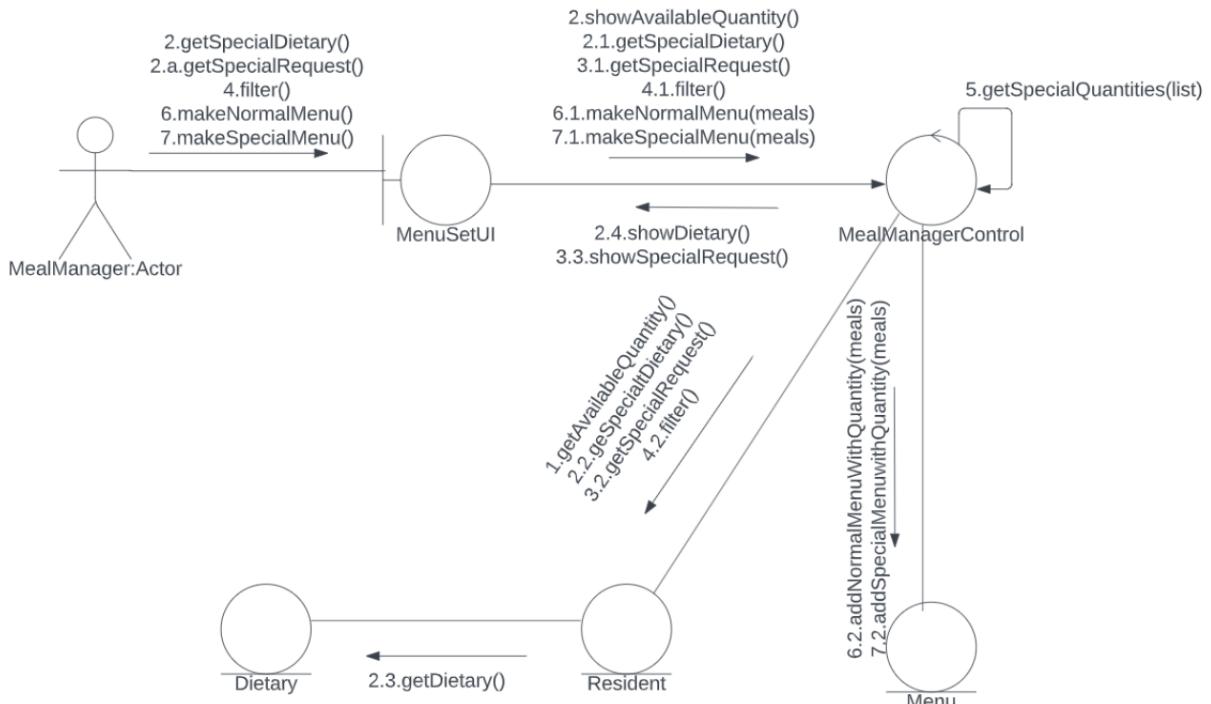


Figure: Create Daily Menu

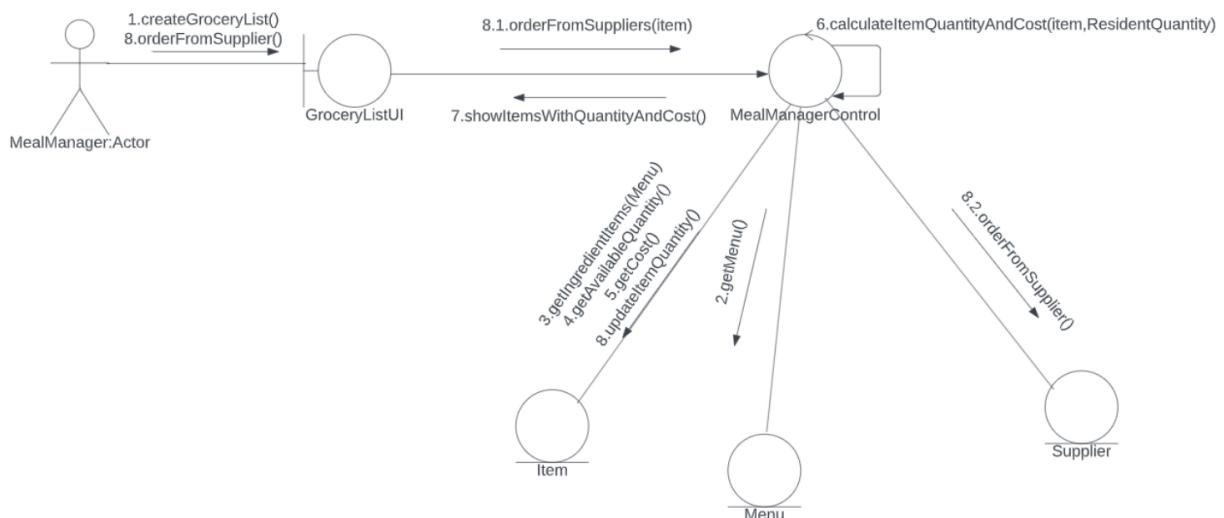


Figure: Create Grocery Lists

- Resident Module:

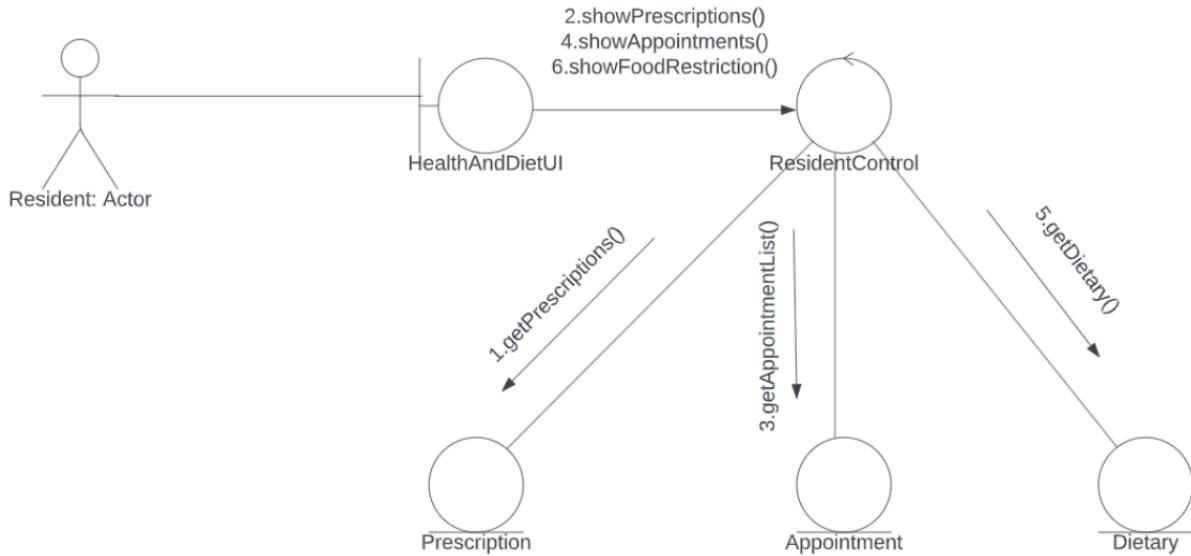


Figure: See medical information and appointments

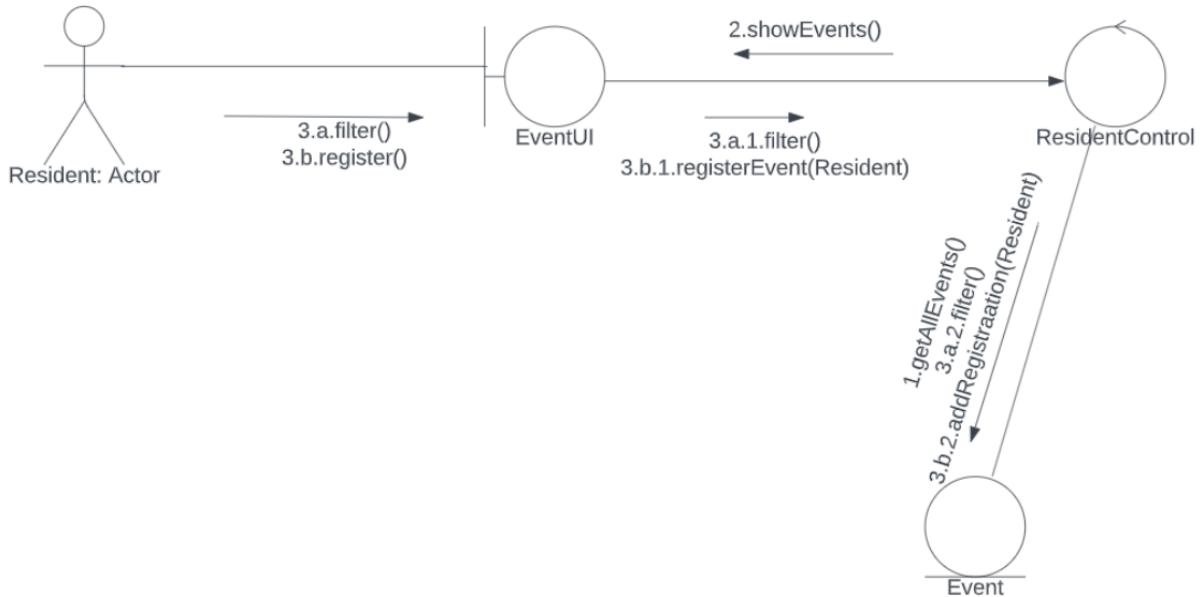


Figure: View and register for events

- Admin Module (Event Management):

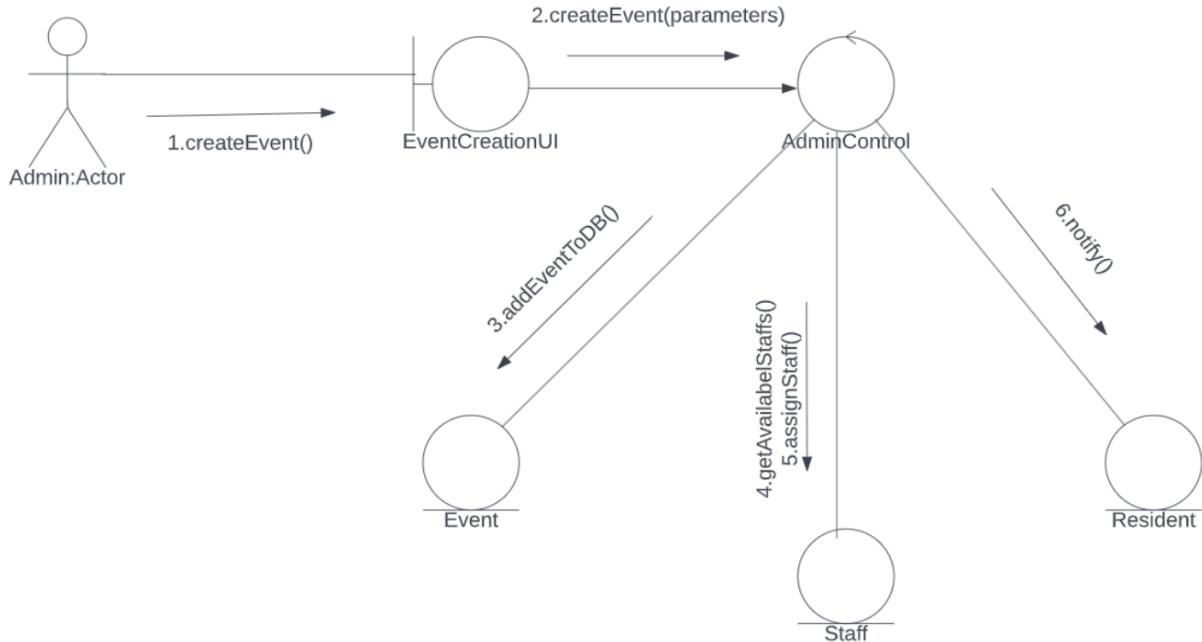


Figure: Create and manage events

Sequence Diagram + State Diagram

In our presented diagram, some problems were found regarding the sequence of meal management and grocery management. The sequence diagram has been corrected to avoid confusion regarding the processes that will occur automatically.

Changes In Sequence Diagram

- Meal Manager:

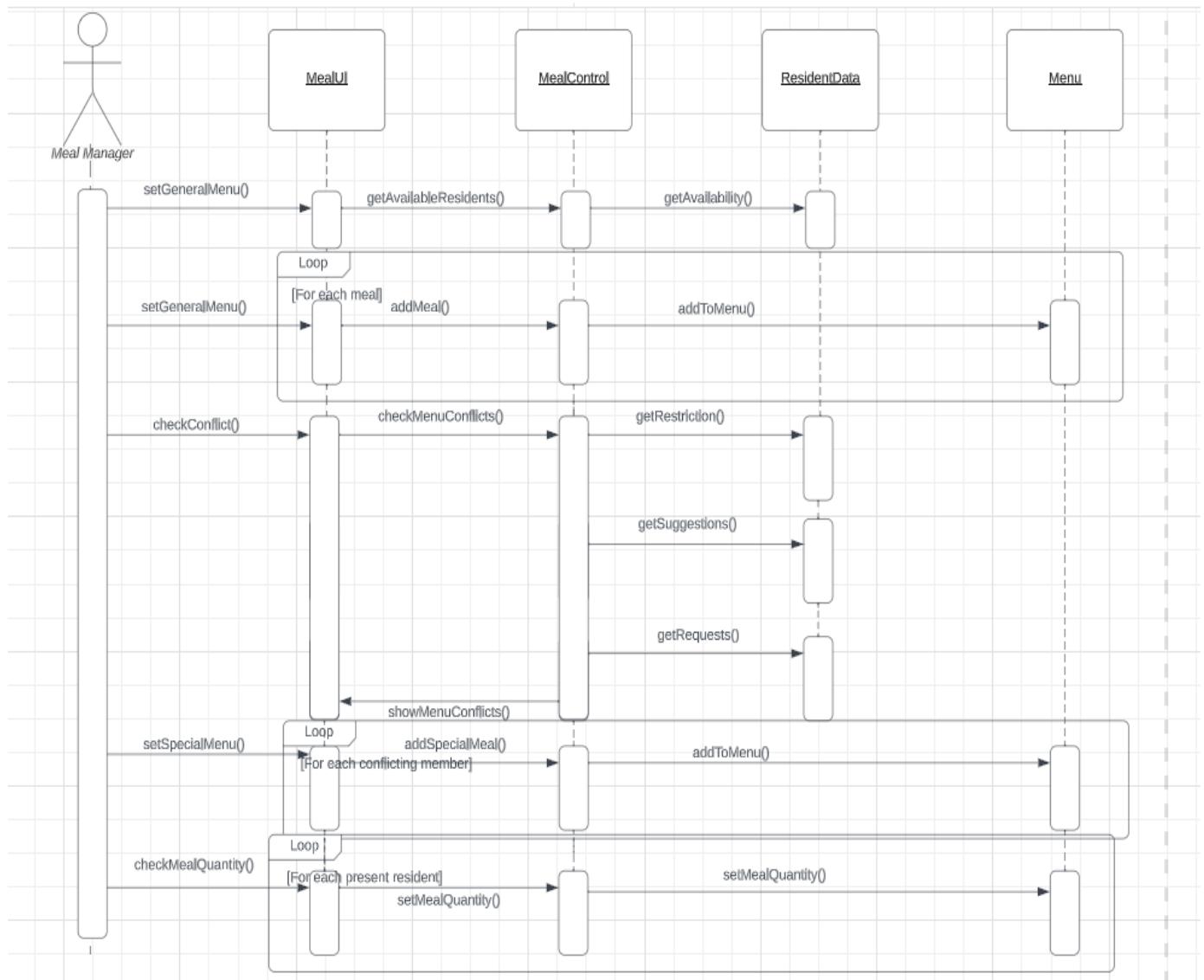


Figure: Making Daily Meal Plan

- **Grocery Manager:**

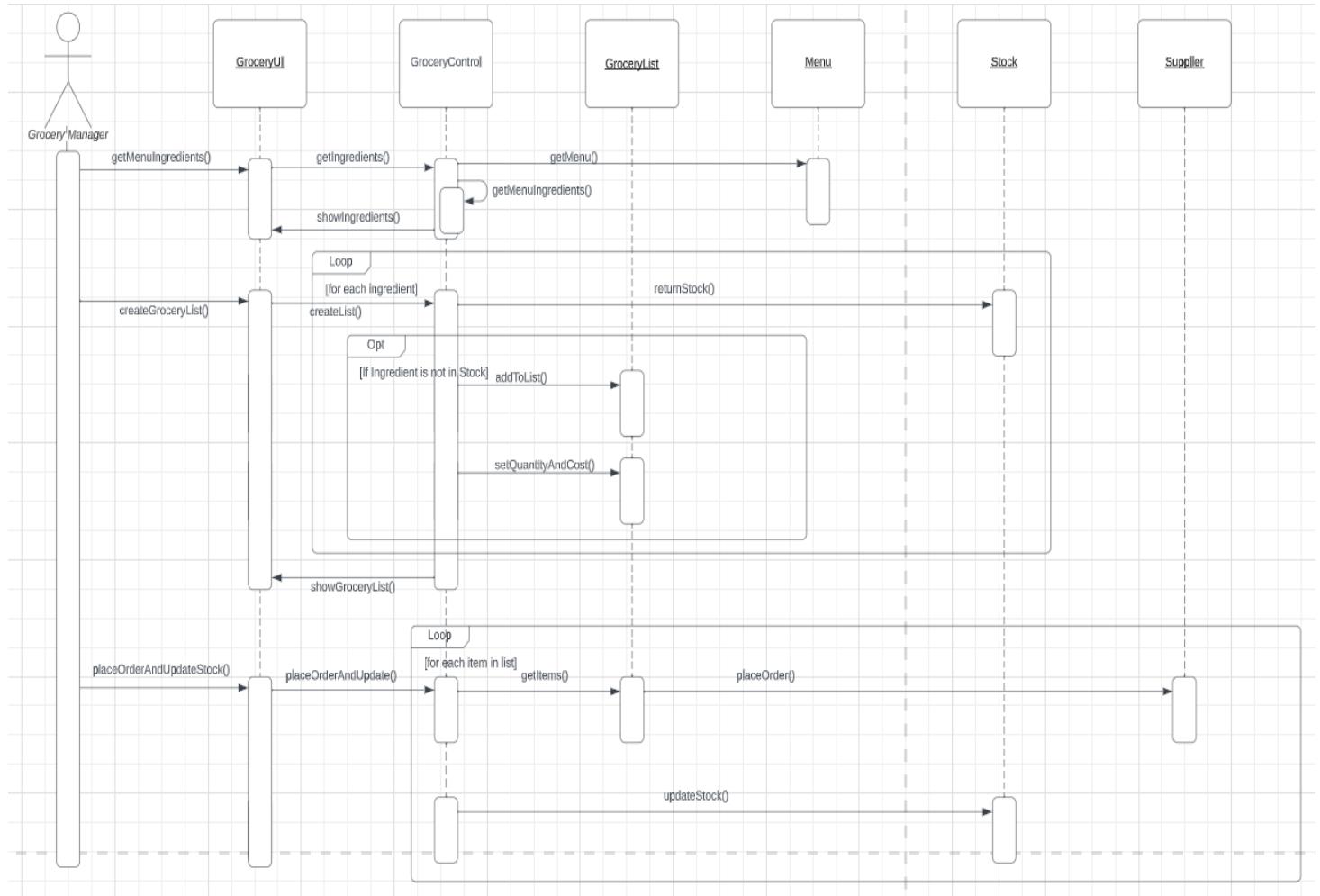


Figure: Creating grocery list

The other unchanged sequence diagrams are given:

- **Nurse Module:**

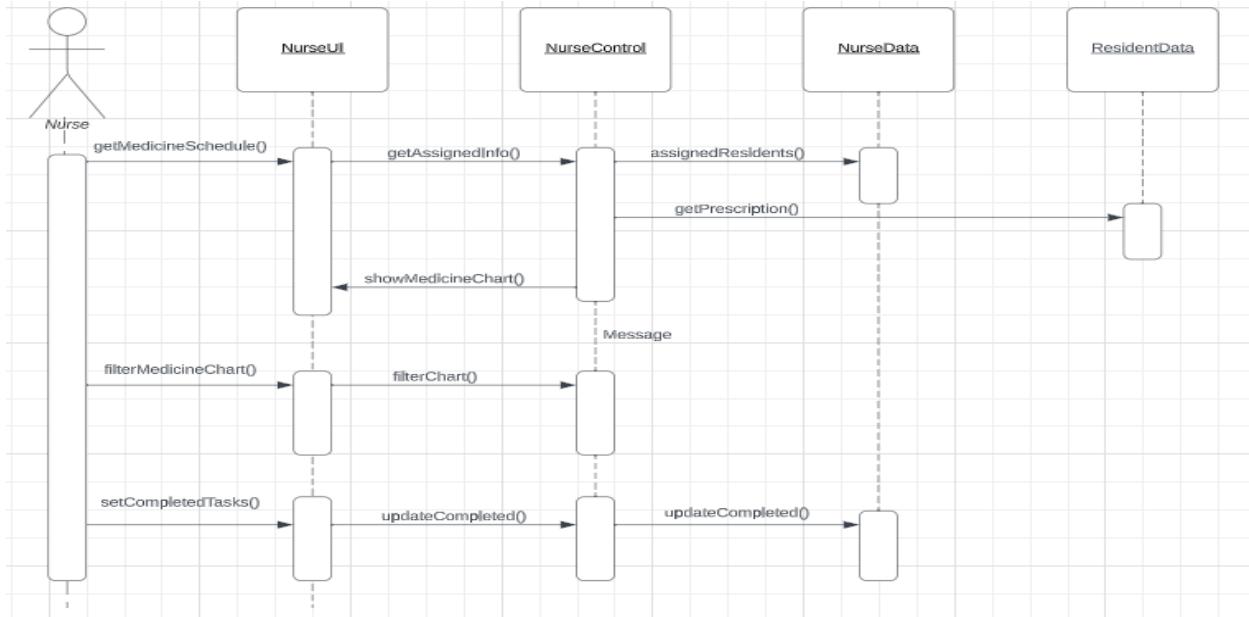


Figure: View tasks and medication table

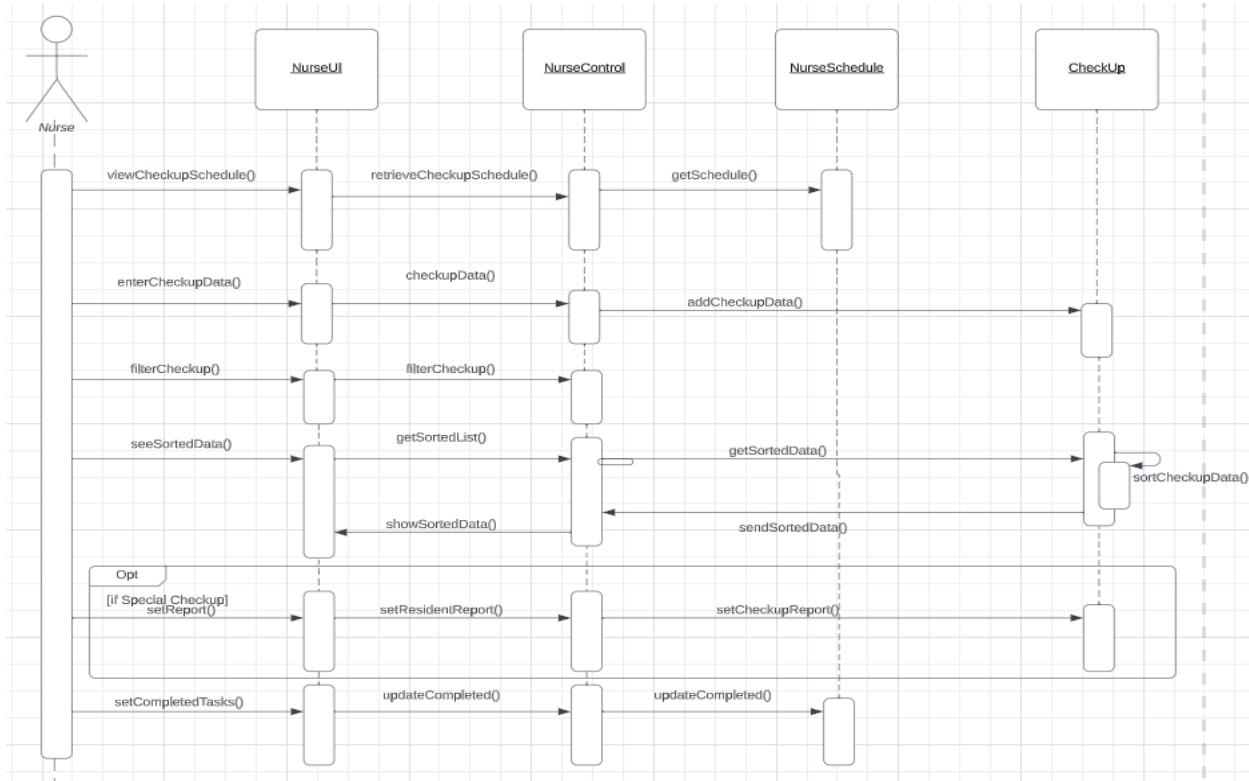


Figure: Enter Checkup data and see sorted data, set report

- Doctor Module:

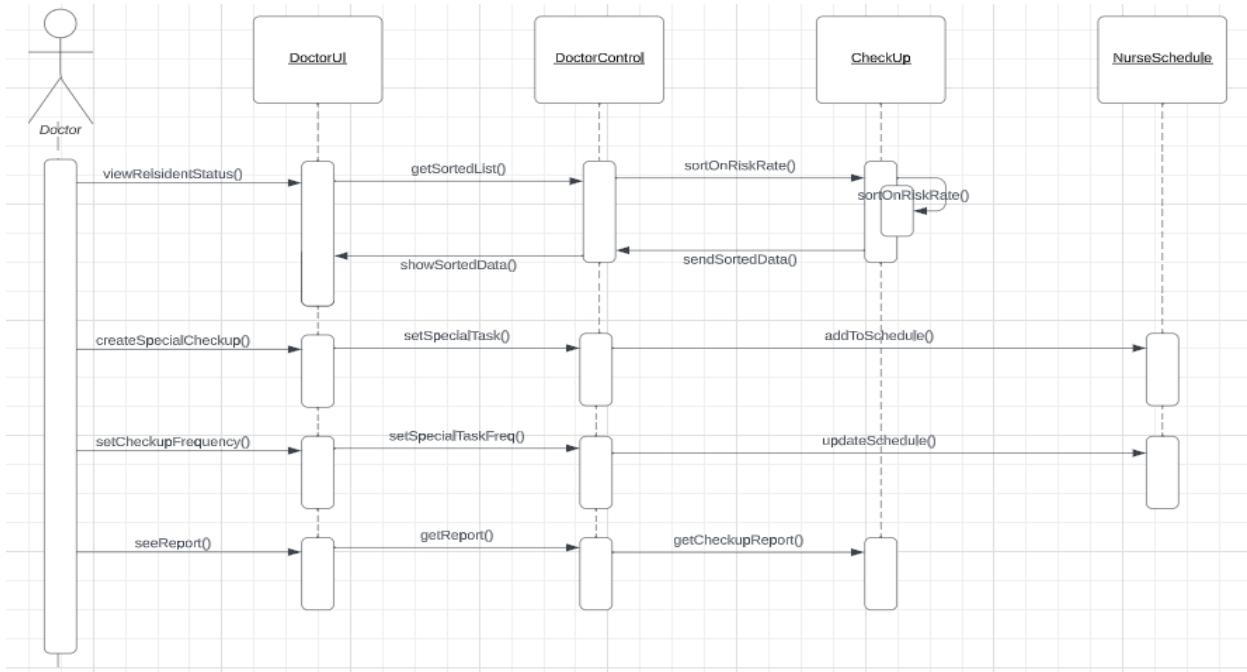


Figure: See resident health status, set special checkup and view report

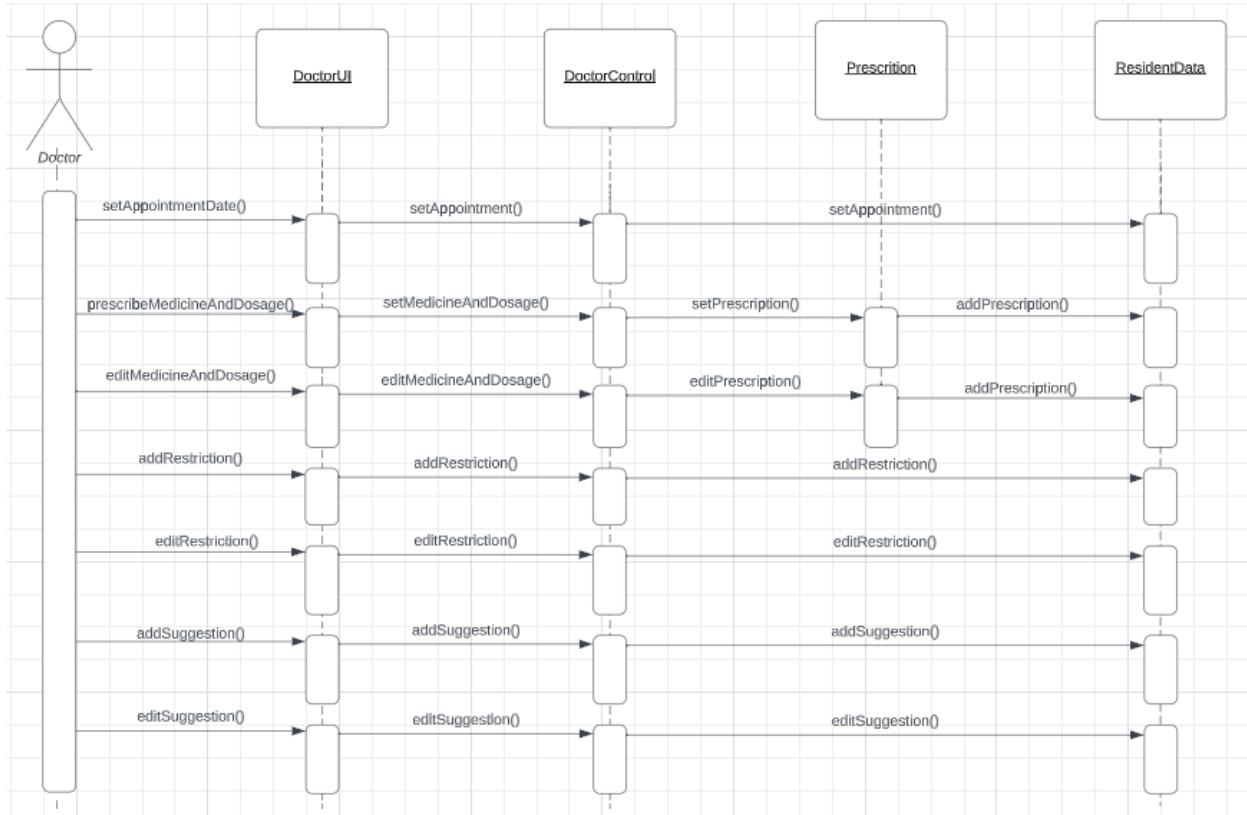
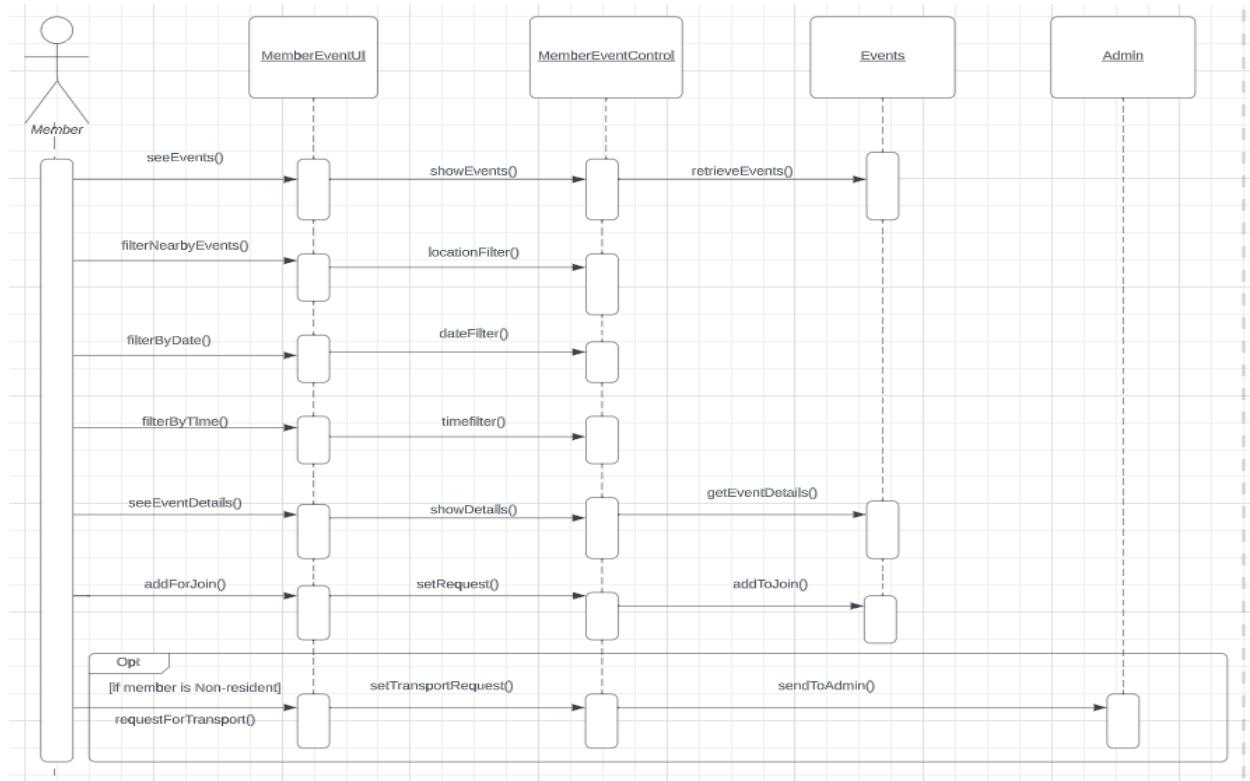
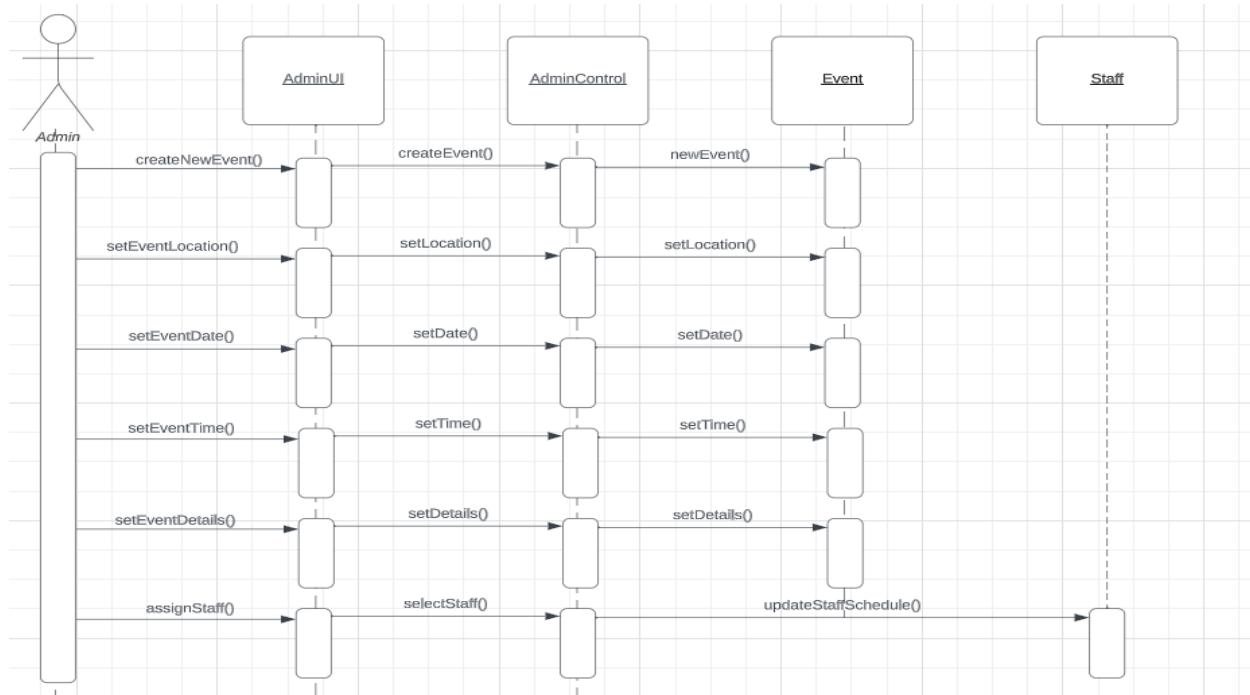


Figure: Set appointment, prescriptions, dietary restrictions and suggestions

- Member Module (view and join events) :



- Admin Module (event management) :



Changes in State Diagram

In the State Diagram, there were problems regarding naming of the states for the Menu object. Also, in the Checkup objects there were problems regarding the proper assignment of checkup. The corrected state diagram is shown below:

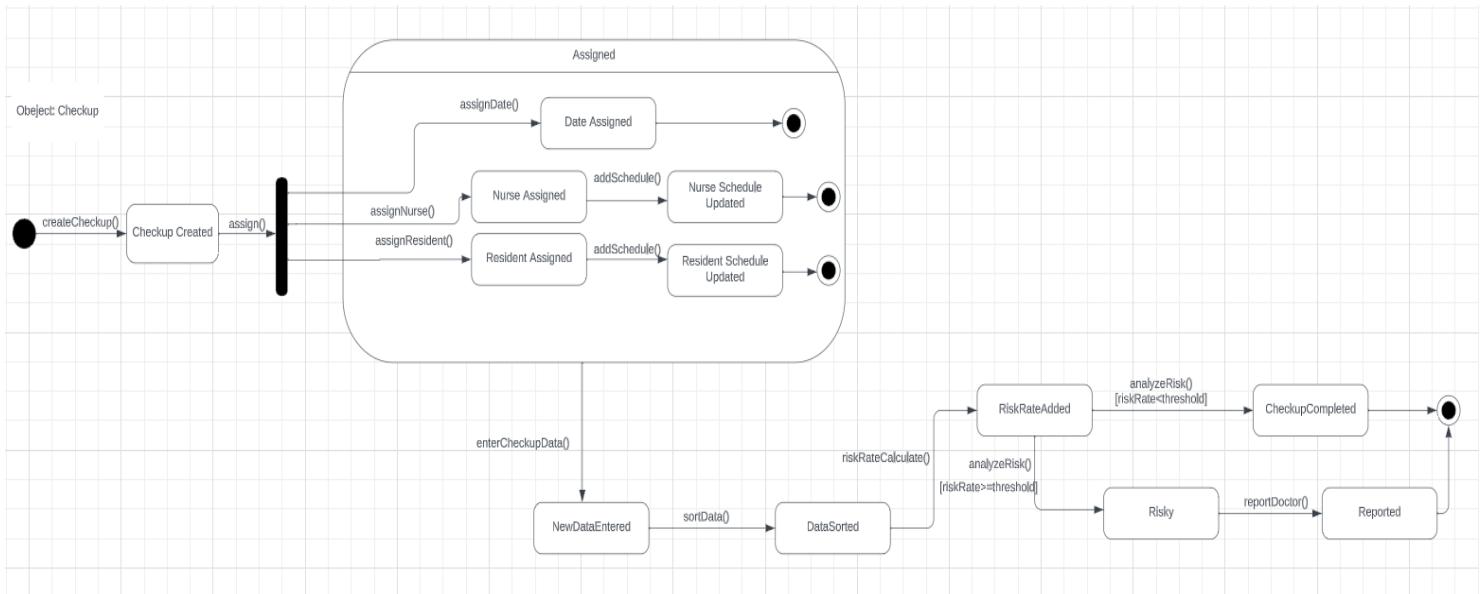


Figure: State Diagram of Checkup Object

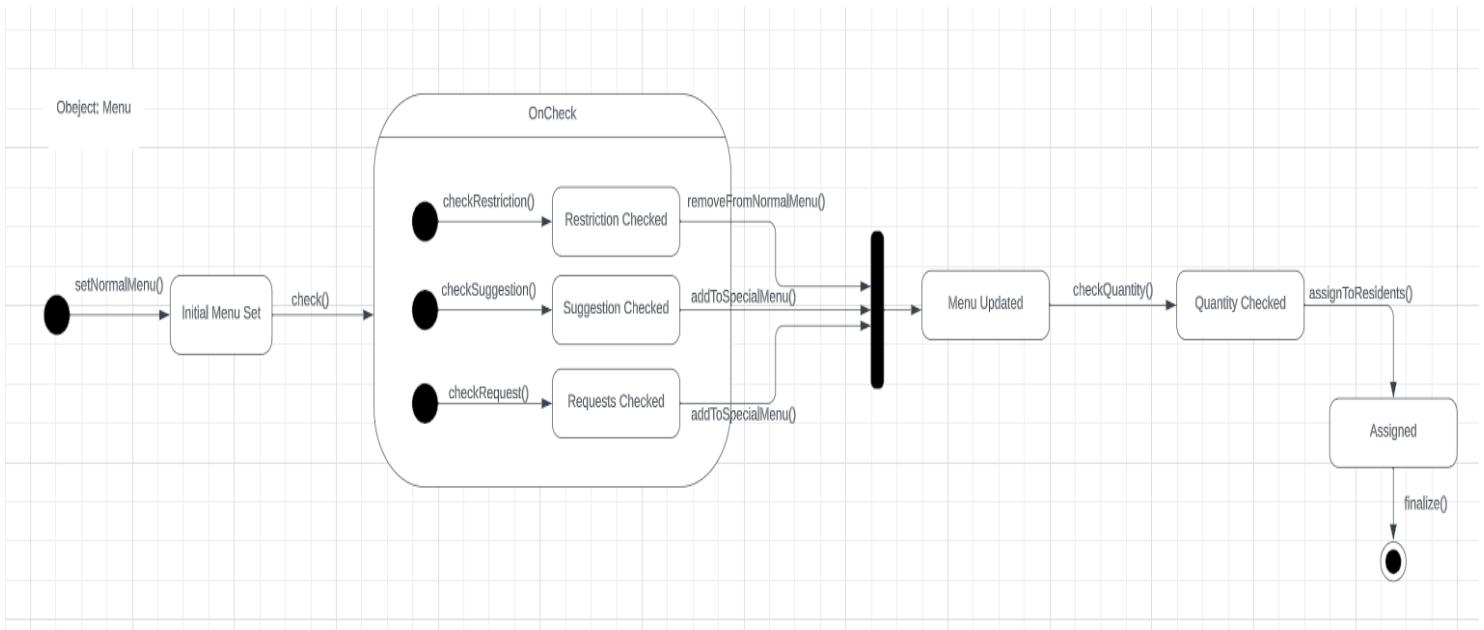


Figure: State Diagram of Menu object

Implementation

In our implementation of one working module, we implemented the Health module i.e Doctor-Nurse part.

- Framework : Django
- Frontend : HTML, CSS
- Backend : Python, SQLite3