



Ebqa'a - Final Submission

College of Computer Science and Engineering, University of Jeddah

CCSW315(15692): Software Process Models

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Section SA7/B7

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***group leader**

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SPRINT ZERO

- **Project description:**

Ebqa'a is a food and pharmaceutical tracking application that allows users to track, sort, and filter the expiration dates of their food and medications. The app collects information such as the item's expiration date and name. It also has sorting and filtering options, as well as push notifications. When an item is due to expire or has already expired, the app notifies the user, ensuring medicine safety and reducing food waste. The app's layout is simple and straightforward to use, making it simple for users to navigate and manage their stuff. Overall, the food and medication tracking application is a practical and valuable tool for anyone who needs to manage their food and prescription inventory.

- **Problem definition:**

Food waste and medication mishandling are both widespread problems with significant consequences. Many people fail to notice when their food and medications expire, resulting in waste and potential health hazards. It might be difficult to determine which things should be consumed or thrown away without an efficient system for managing expiration dates, resulting in excessive expenses and waste.

- **Proposed solution:**

To address this issue, we propose Ebqa'a; a food and medication tracking app that allows users to conveniently track, sort, and filter expiration dates. Push notifications will be sent to users when products are about to expire or have already expired, allowing them to reduce waste and maintain the safety of their medication.

- **Scope:**

- a. **Features:**

- Inventory tracking for food and medications
 - Expiration date management with push notifications
 - Sorting and filtering options
 - User-friendly interface

- b. **Benefits:**

- Reduce food waste
 - Ensure the medication's safety.
 - Easy-to-use interface for inventory management

- **Users:**

- Elderly
 - Pharmacies
 - Property owners
 - Caregivers
 - People with dietary restrictions

- **Prioritized Functional requirements:**

REQ-1: The app must allow users to register food and medicine items by providing the item name and expiration date. Users should be able to easily input the expiration date of each item using a date picker.

REQ-2: The app must continuously monitor and track the expiration dates of registered items. Prior to the expiration date, the app should send timely notifications to the user, reminding them of approaching expirations. Notifications should be in the form of push notifications ensuring that users are aware of items that need to be consumed or discarded soon.

REQ-3: The app must provide an automatic sorting and filtering feature to organize the items based on their expiration dates. Users should be able to view a list or grid of items sorted in ascending or descending order of expiration dates.

- **Prioritized Non-functional requirements (product backlog):**

REQ-1: Users should be able to use the app's intuitive user interface without instructions, assistance from experts, or manuals, and they should be able to quickly understand how it works.

REQ-2: The push notifications for approaching expirations should be reliable and consistently delivered to the user's device.

REQ-3: The performance of the application should load the initial screen in no more than three seconds, even with a large number of registered items inside the app.

- **Product backlog:**

1. Component Name: Item Registration

Story Name: Registering food and medicine

Story Sequence No: 001

Story Short Description: As a user, I want to be able to register food and medicine items.

Story Long Description: Users should be able to provide the name and expiration date of an item and register it within the app. This allows them to keep track of the items' expiration dates and receive timely notifications when the expiration date approaches.

2. Component Name: Item Registration

Story Name: Expiry date input

Story Sequence No: 002

Story Short Description: As a user, I want to easily input the expiration date of each item using a date picker.

Story Long Description: When registering an item, users should be presented with a user-friendly date picker interface. This allows them to easily select the expiration date without manually typing it, improving accuracy and convenience.

3. Component Name: Expiration Date Tracking and Notifications

Story Name: Monitoring expiration dates

Story Sequence No: 003

Story Short Description: As a user, I want the app to continuously monitor and track the expiration dates of registered items.

Story Long Description: The app should regularly check the expiration dates of registered items and keep them updated. This ensures accurate tracking of expiration dates and enables the app to send timely notifications to the user.

4. Component Name: Expiration Date Tracking and Notifications

Story Name: Receiving push notifications

Story Sequence No: 004

Story Short Description: As a user, I want to receive push notifications when an item's expiration date is approaching.

Story Long Description: The app should send push notifications to the user's device when an item's expiration date is nearing. These notifications serve as reminders to consume or discard the item, helping the user prevent wastage and maintain freshness.

5. Component Name: Sorting Expiration Dates

Story Name: Automatic date sorting

Story Sequence No: 005

Story Short Description: As a user, I want the app to automatically sort my items based on their expiration dates.

Story Long Description: The app should automatically sort the registered items in descending order of their expiration dates. This ensures that items with the closest expiration dates appear at the top of the list, making it easier for users to identify and prioritize items that need immediate attention.

6. Component Name: Sorting Expiration Dates

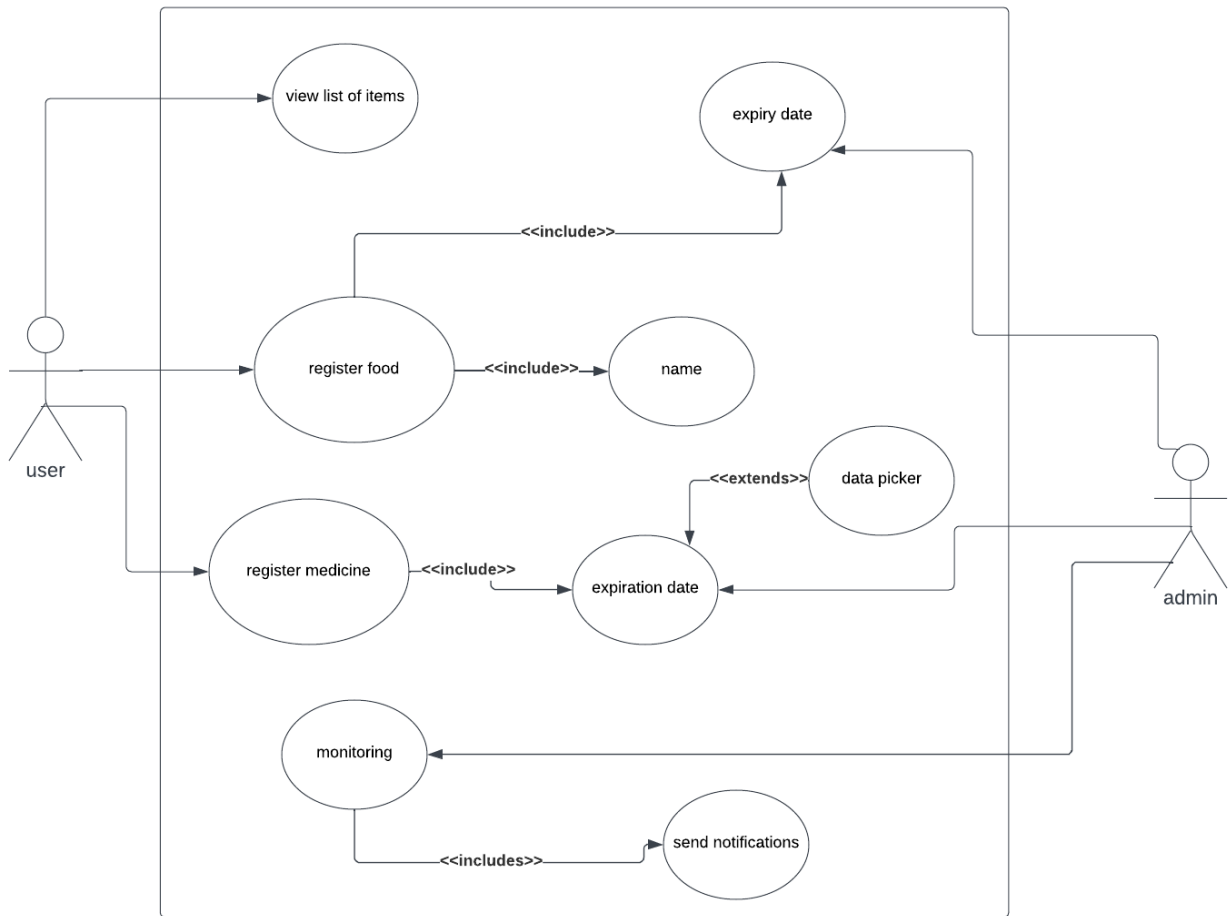
Story Name: Sorted items list

Story Sequence No: 006

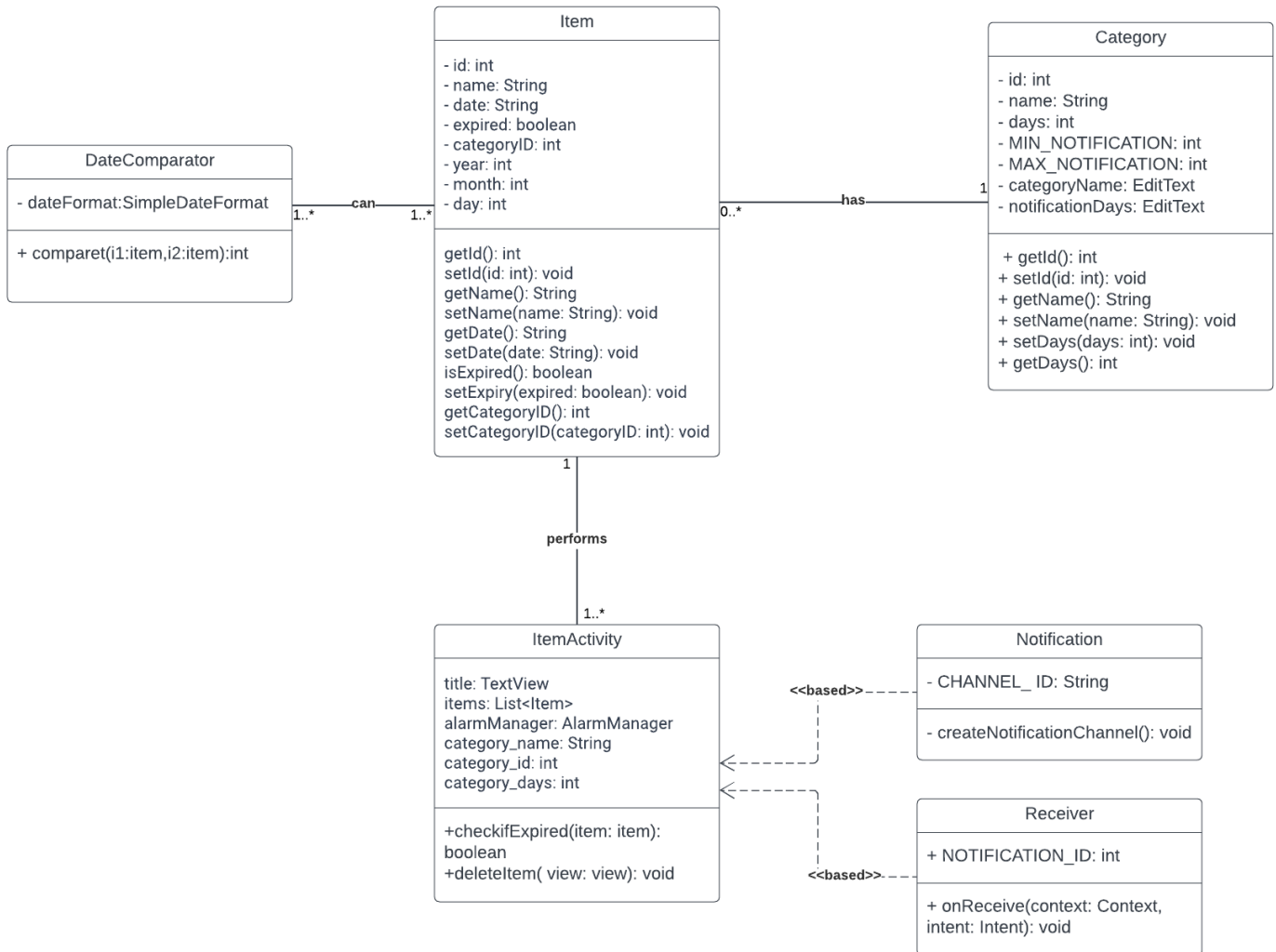
Story Short Description: As a user, I want to have all items displayed in order of what's expiring soon

Story Long Description: The app should display items in descending order after checking the expiration dates of each item and view them to the user in a sorted list.

- **Use case diagram**



- **Class diagram:**



SPRINT ONE

- **Sprint Backlog:**

1. Component Name: Item Registration

Story Name: Registering food and medicine

Story Sequence No: 001

Story Short Description: As a user, I want to be able to register food and medicine items.

Story Long Description: Users should be able to provide the name and expiration date of an item and register it within the app. This allows them to keep track of the items' expiration dates and receive timely notifications when the expiration date approaches.

2. Component Name: Item Registration

Story Name: Expiry date input

Story Sequence No: 002

Story Short Description: As a user, I want to easily input the expiration date of each item using a date picker.

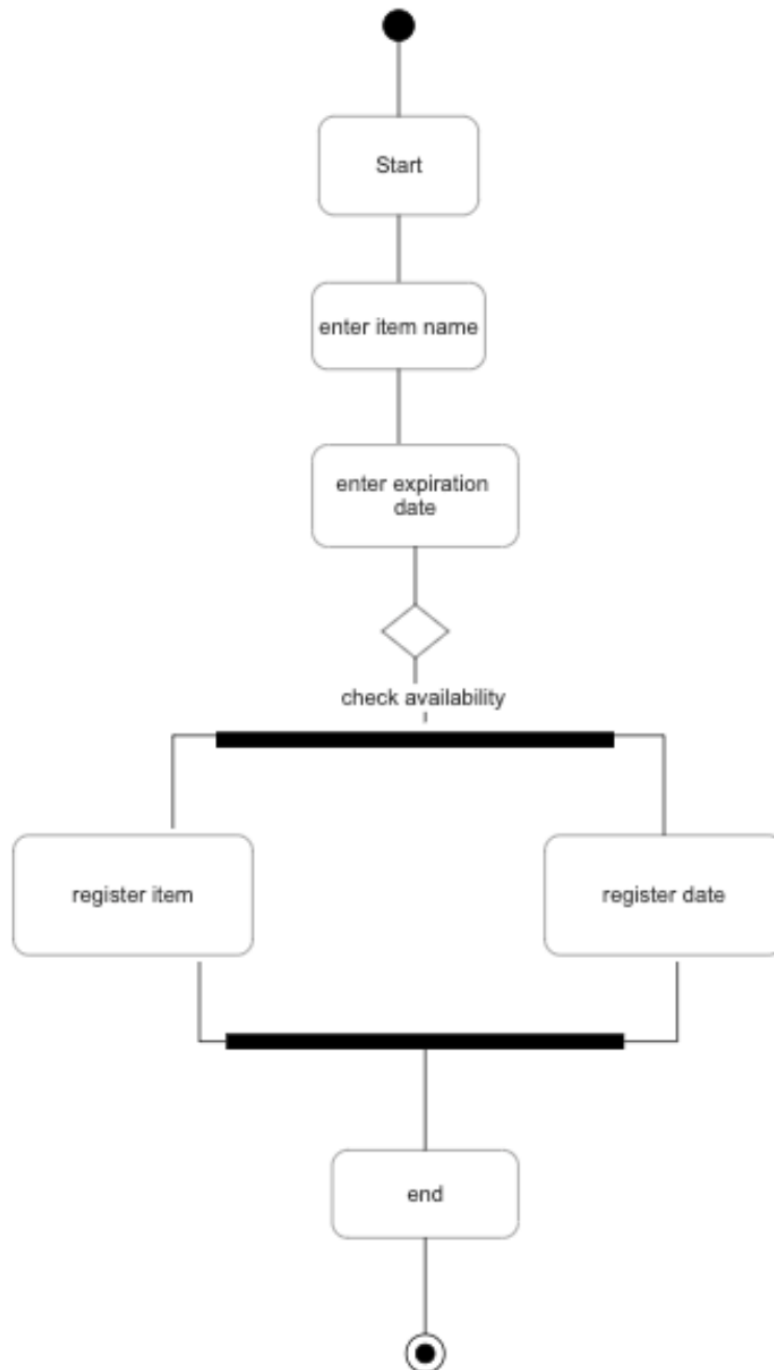
Story Long Description: When registering an item, users should be presented with a user-friendly date picker interface. This allows them to easily select the expiration date without manually typing it, improving accuracy and convenience.

- **Prioritize stories and define sprints:**

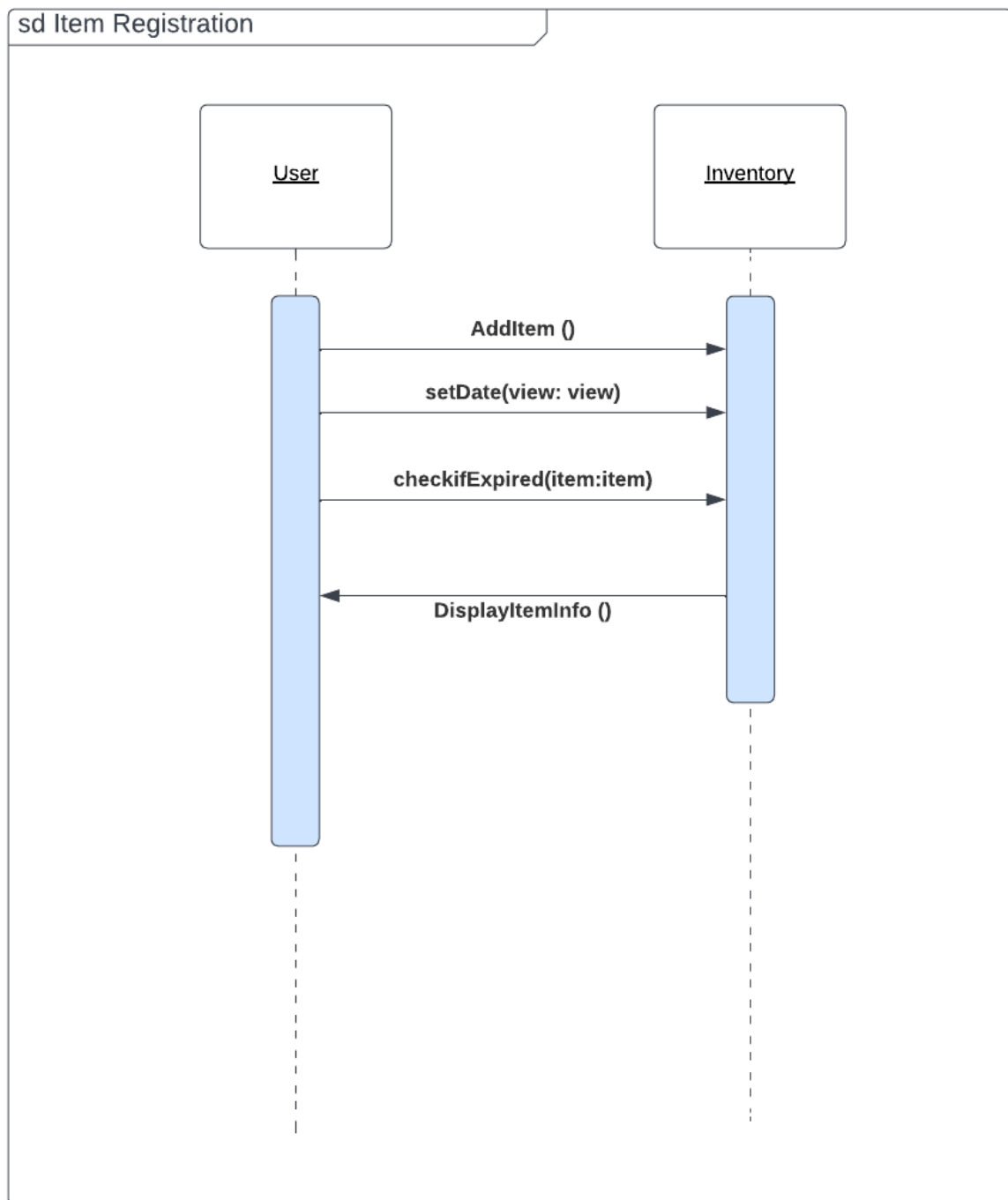
<u>Sprint #1 Test Cases</u>			
<u>[16/05/2023] Test Case Name: Registering food and medicine</u>			
<u>Test cases for Registering food and medicine:</u>			
<u>Test Case No.</u>	<u>Test Case</u>	<u>Expected Results</u>	<u>(Pass / Fail)</u>
<u>TC001</u>	Data for the item is manually entered by the User.	User should be directed to the item's details page to fill out information manually.	Pass
<u>TC002</u>	All boxes are blank by the User.	User should be displayed with a message: "Please fill out the information needed so you can proceed to add item to your inventory.".	Pass
<u>TC003</u>	User fills in the item's expiration dates but leaves the names unfilled.	User should be displayed with a message: "Please fill out name box.".	Fail
<u>TC004</u>	User completes all required fields.	User should be displayed with a message: "Successfully added to inventory.".	Pass
<u>TC005</u>	User adds a pre existing item.	User should be displayed with a message "Item already in inventory." and show the item's information	Fail

<u>Sprint #1 Test Cases</u>			
<u>[16/05/2023] Test Case Name: Expiry date input</u>			
<u>Test cases for Expiry date input:</u>			
<u>Test Case No.</u>	<u>Test Case</u>	<u>Expected Results</u>	<u>(Pass / Fail)</u>
<u>TC001</u>	User picks an already expired dates	User should be displayed with a message "choose a valid date."	Fail
<u>TC002</u>	User leaves expiration date empty	User should be displayed with a message: "Please fill out the expiration date boxes.".	Pass
<u>TC003</u>	User fills it out correctly	user Should be able to proceed with next steps	Pass

- Activity diagram



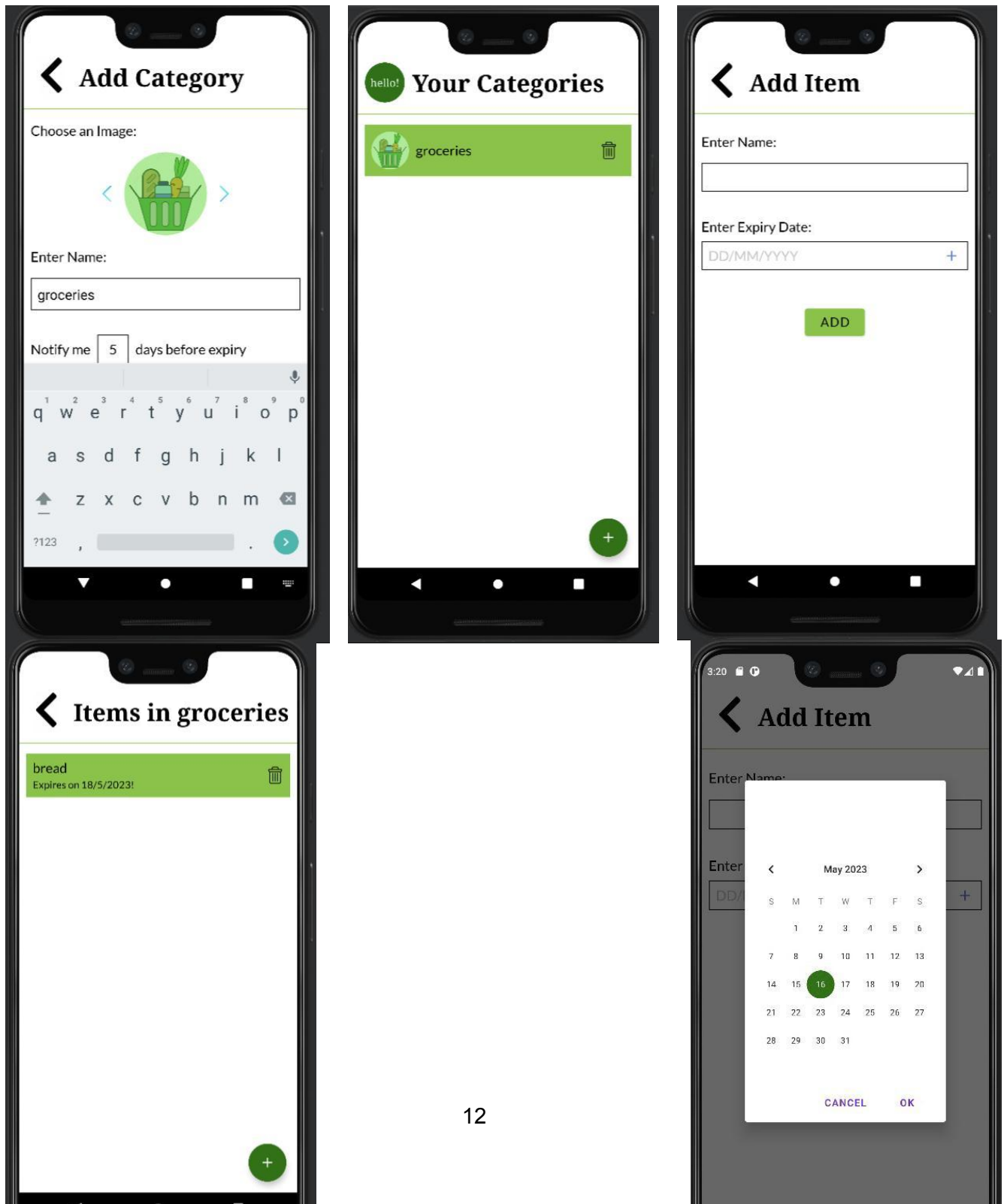
- **Sequence diagram**



- **Implementation**

Github Link:

- **Testing**



- JIRA planning tool:

The screenshot displays the 'All sprints' view in JIRA for the 'Ebqa'a' project. The interface includes a sidebar with navigation options like 'Roadmap', 'Backlog', and 'Board'. The main area shows a Kanban board with columns for 'TO DO', 'IN PROGRESS', and 'DONE'. Issues are grouped by assignee, and each issue is associated with a specific diagram or document type. The board also shows a search bar, filters, and a 'Complete sprint' button.

The screenshot displays the 'Backlog' view in JIRA for the 'Ebqa'a' project. The interface shows a list of issues organized into sprints. The 'EB Sprint 0 (2nd Attempt)' sprint is currently active, showing issues like 'use case' and 'class diagram'. Other sprints include 'EB Sprint 1 (2nd Attempt)' and 'REQUIREMENTS'. The backlog also shows a 'Start sprint' button for the 'REQUIREMENTS' sprint. The interface includes a sidebar with navigation options like 'Roadmap', 'Backlog', and 'Board'.

- Sprint meeting:

<u>Sprint Meeting(s)</u>		
<u>Project Name:</u> [Ebqa'a] <u>Project Members:</u> Joud Albattah - Noura Alharthi - Rahaf Alghamdi - Reem Almezeal - Fareeda Daghestani		
<u>Sprint #1 Stand up Meeting - [DATE] [Sprint 1 meeting 1]</u> <u>Sprint Duration:</u> two weeks <u>Scrum Master:</u> Joud Albattah <u>Client:</u> Elderly, Pharmacies, Property owners, Caregivers, People with dietary restrictions <u>Pair Programmers:</u> Joud <u>Stories:</u> [List all stories for that sprint below]		
<u>Component Name</u>	<u>Story Sequence Number</u>	<u>Use Cases (e.g., functionalities)</u>
Registering food and medicine	001	Users should be able to provide the name and expiration date of an item and register it within the app. This allows them to keep track of the items' expiration dates and receive timely notifications when the expiration date approaches.
Expiry date input	002	When registering an item, users should be presented with a user-friendly date picker interface. This allows them to easily select the expiration date without manually typing it, improving accuracy and convenience.
<u>Follow-up meeting questions:</u> [Joud]: <ol style="list-style-type: none"> 1. <u>What has been completed since the last meeting?</u> 2. <u>What are you going to be working on next?</u> 3. <u>Do you have any issues/impediments?</u> 		
<u>Scrum's Master comments based on the above questions:</u> <u>Q1 Answer:</u> We started developing the application and implemented the first requirement which was to register the user's items in a category by providing the item's name and its' expiration date. <u>Q2 Answer:</u> We are developing another requirement, which is the user receiving push notifications that remind them to use up the items that are expiring soon and providing the detail of the number of days left for it to expire. <u>Q3 Answer:</u> There were some issues when we tried connecting our app to the database, there were a lot of errors in the code but we started over and used SQL instead which worked after many tries.		

SPRINT TWO

- **Sprint Backlog:**

3. Component Name: Expiration Date Tracking and Notifications

Story Name: Monitoring expiration dates

Story Sequence No: 003

Story Short Description: As a user, I want the app to continuously monitor and track the expiration dates of registered items.

Story Long Description: The app should regularly check the expiration dates of registered items and keep them updated. This ensures accurate tracking of expiration dates and enables the app to send timely notifications to the user.

4. Component Name: Expiration Date Tracking and Notifications

Story Name: Receiving push notifications

Story Sequence No: 004

Story Short Description: As a user, I want to receive push notifications when an item's expiration date is approaching.

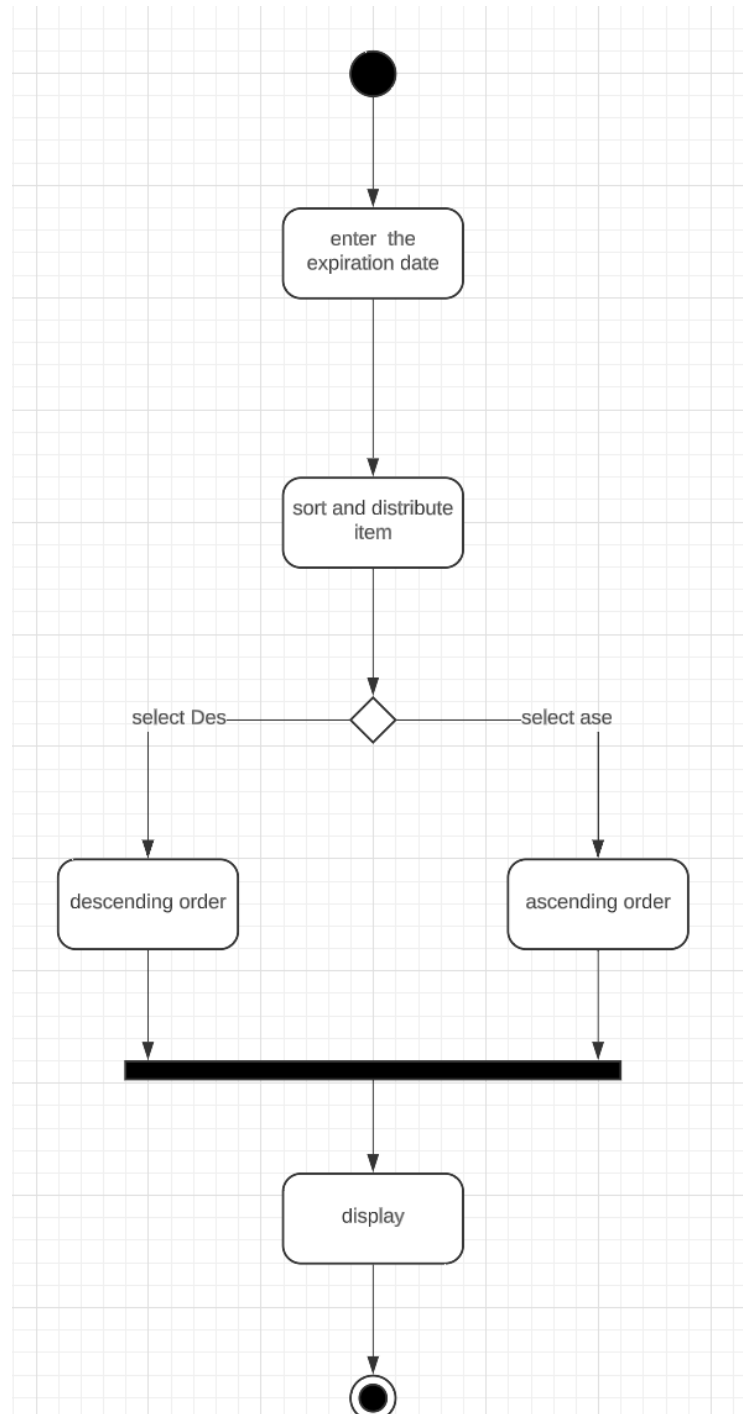
Story Long Description: The app should send push notifications to the user's device when an item's expiration date is nearing. These notifications serve as reminders to consume or discard the item, helping the user prevent wastage and maintain freshness.

- **Prioritize stories and define sprints:**

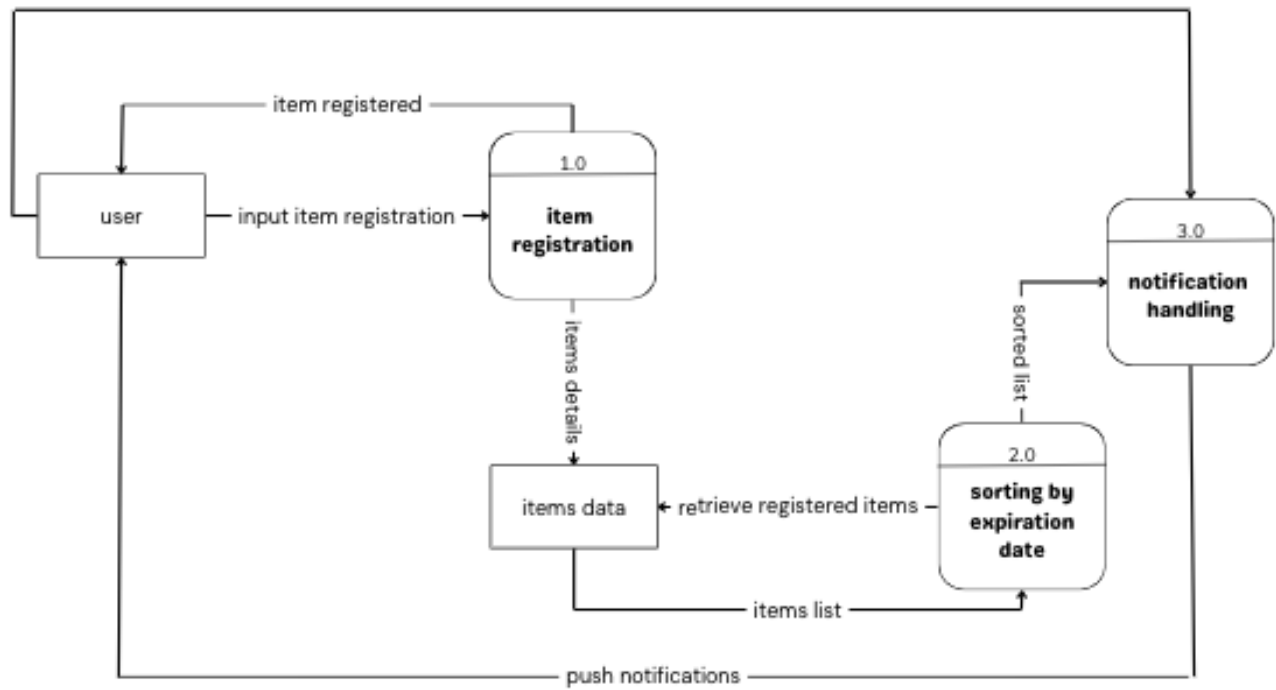
<u>Sprint #2 Test Cases</u>			
<u>[16/05/2023] Test Case Name: Monitoring expiration dates</u>			
<u>Test cases for Monitoring expiration dates</u>			
<u>Test Case No.</u>	<u>Test Case</u>	<u>Expected Results</u>	<u>(Pass / Fail)</u>
<u>TC001</u>	app correctly registers an item with an expiration date.	App displays “Successfully Registered ” to user	Pass
<u>TC002</u>	app allows the user to edit the expiration date of a registered item.	App has an edit item option and is displayed when clicked on	Fail
<u>TC003</u>	app allows the user to delete a registered item.	App has a delete item option which deletes item when clicked on	Pass
<u>TC004</u>	app can handle multiple items with different expiration dates.	App has a list of items displayed with same and different expiration date listed ascendingly	Pass

<u>Sprint #2 Test Cases</u>			
<u>[16/05/2023] Test Case Name: Receiving push notifications</u>			
<u>Test cases for Receiving push notifications</u>			
<u>Test Case No.</u>	<u>Test Case</u>	<u>Expected Results</u>	<u>(Pass / Fail)</u>
<u>TC001</u>	app sends a push notification to the user's device when an item's expiration date is approaching.	App displays on the mobile's home screen “Item will expire soon! ” to user	Pass
<u>TC002</u>	push notification shows user item details	App displays the name of the item and the expiration date.	Pass
<u>TC003</u>	notification includes a call-to-action	App prompts the user to consume or discard the item.	Fail
<u>TC004</u>	app allows the user to customize the timing and frequency of push notifications.	App has a custom time option and is displayed when clicked on	Pass

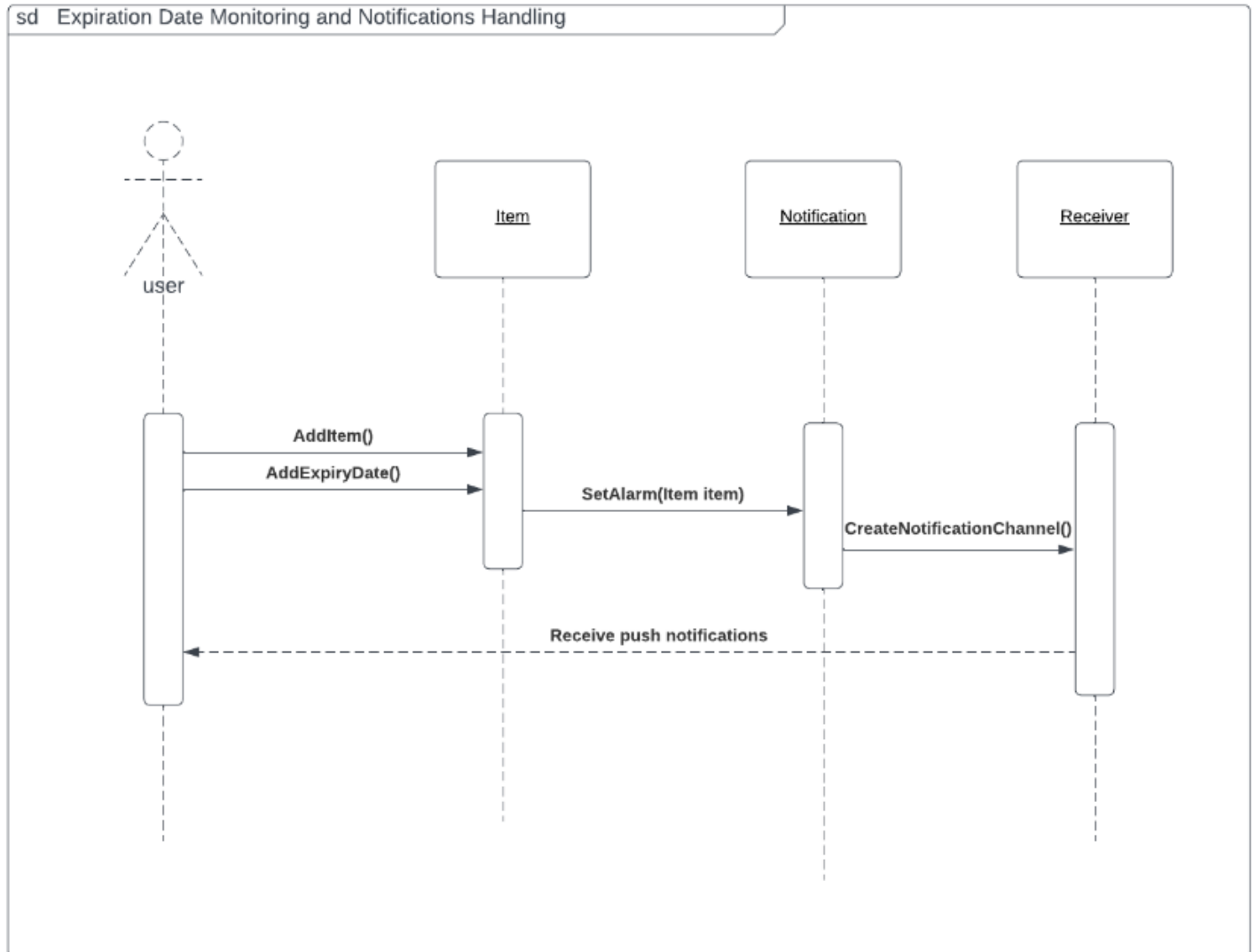
- Activity diagram



- Data Flow Diagram



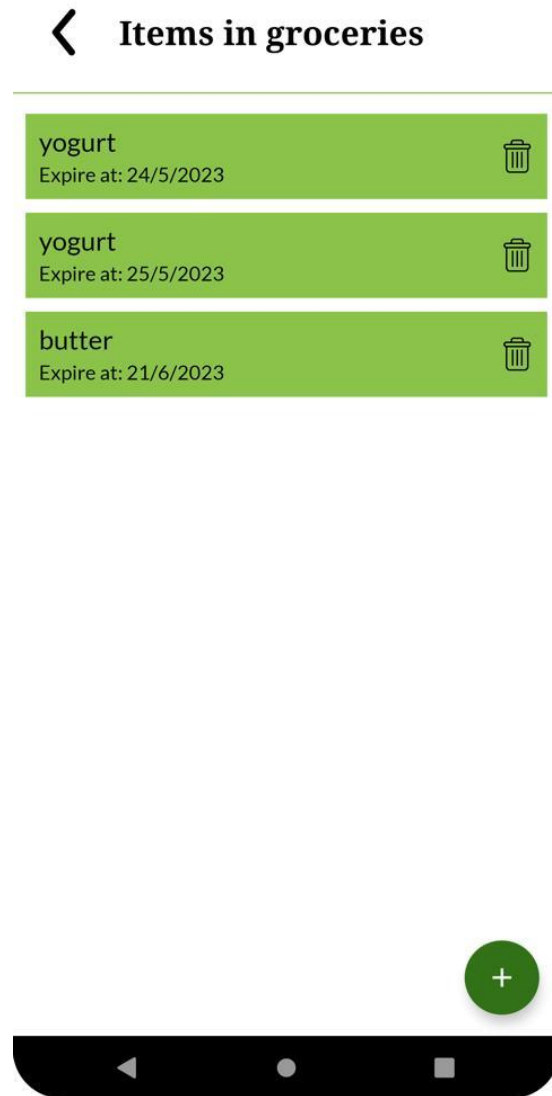
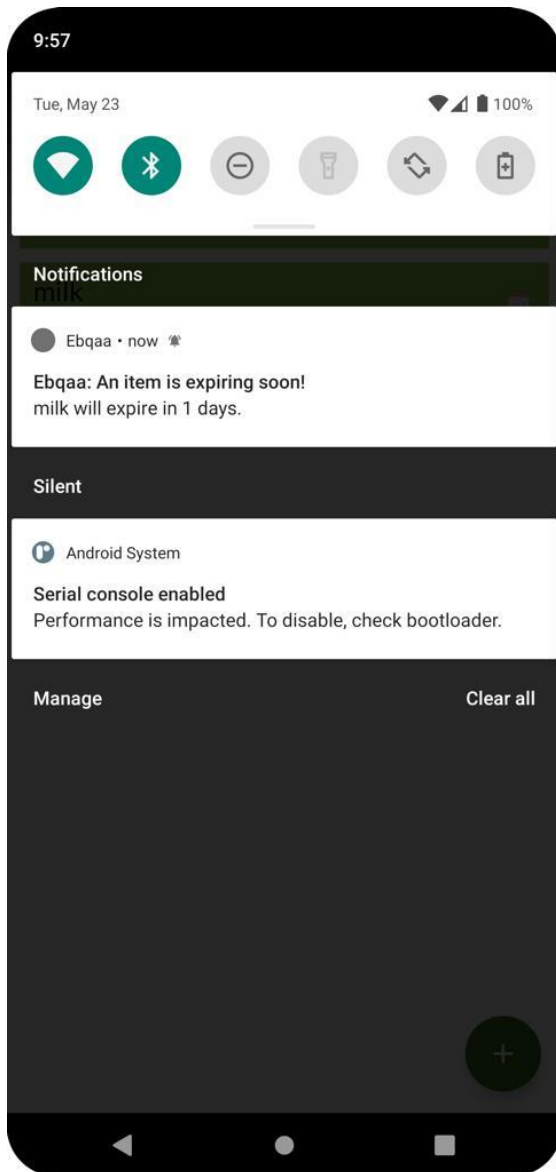
- **Sequence Diagram:**



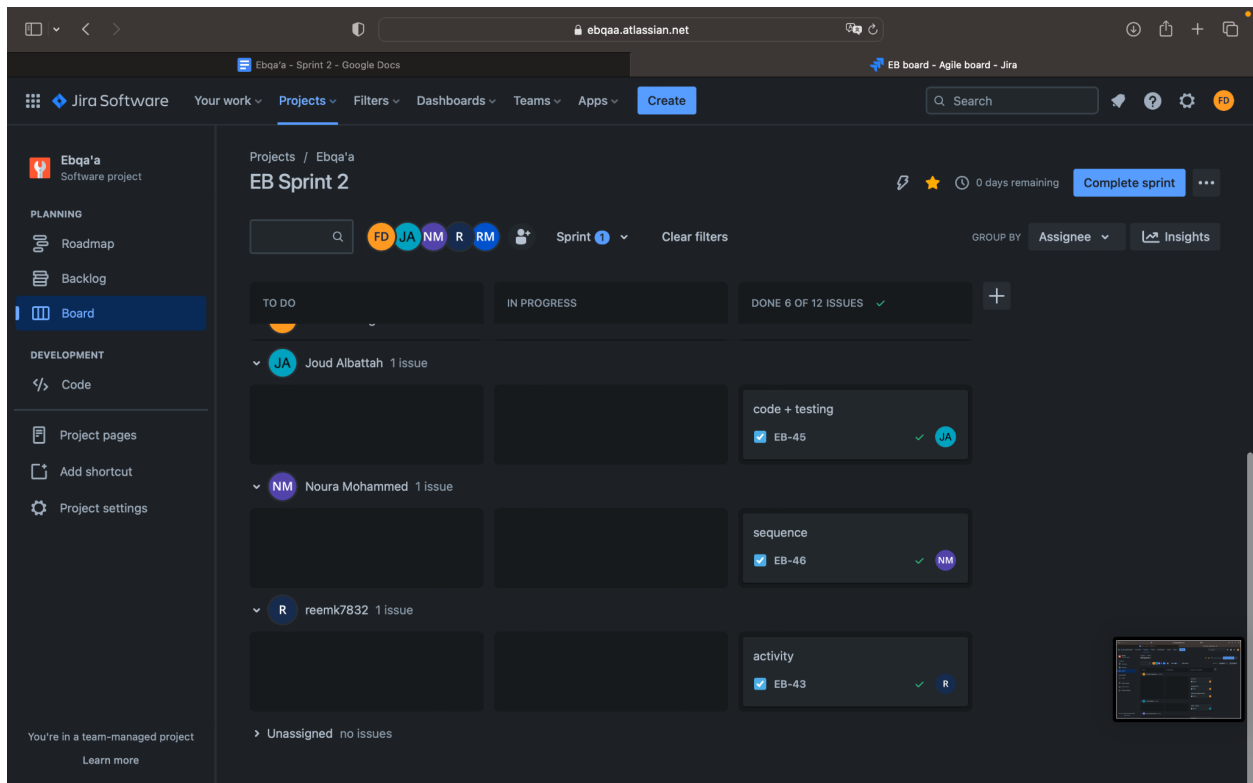
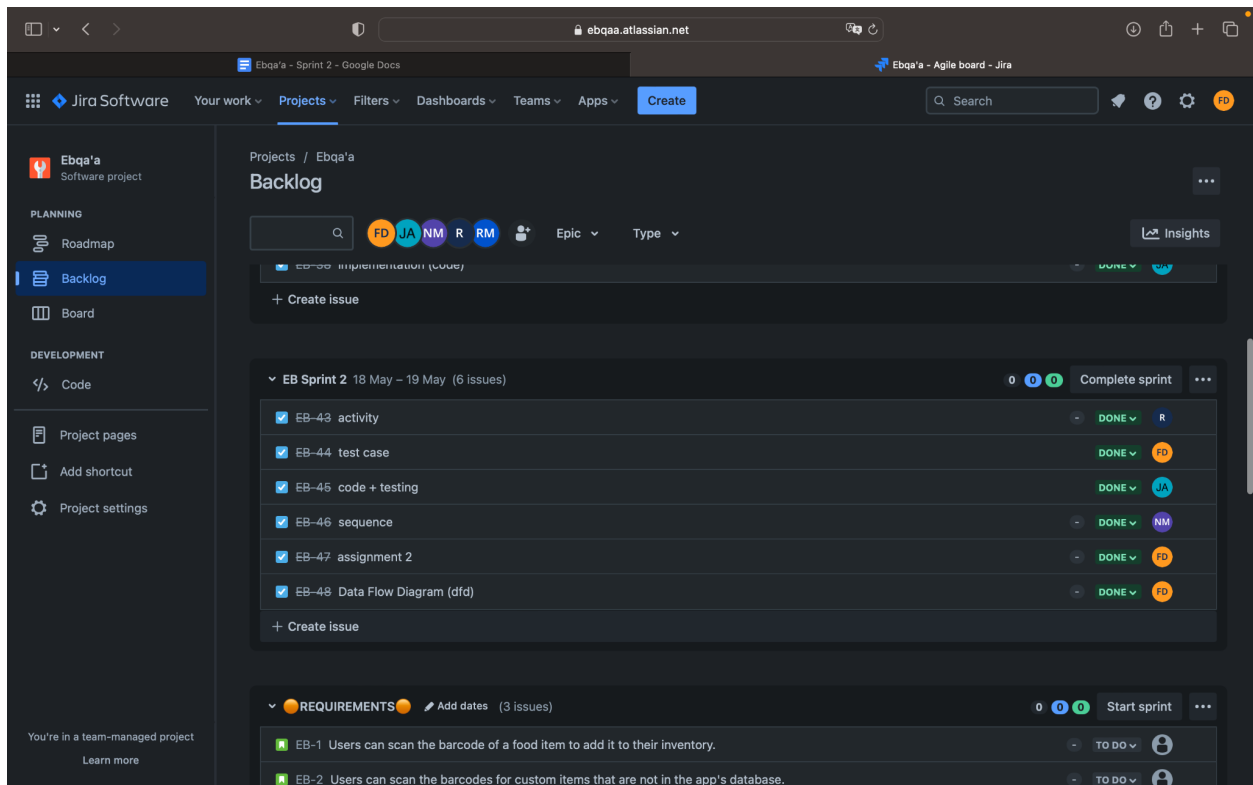
- **Implementation**

Github link: <https://github.com/joudAlb/Ebqaa>

- **Testing**



- **JIRA planning tool:**





- Sprint meeting:

<u>Sprint Meeting(s)</u>		
<u>Project Name:</u> [Ebqa'a] <u>Project Members:</u> Joud Albattah - Noura Alharthi - Rahaf Alghamdi - Reem Almezeal - Fareeda Daghestani		
<hr/> <u>Sprint #2 Stand up Meeting - [DATE] [Sprint 2 meeting 1]</u> <u>Sprint Duration:</u> two weeks <u>Scrum Master:</u> Joud Albattah <u>Client:</u> Elderly, Pharmacies, Property owners, Caregivers, People with dietary restrictions <u>Pair Programmers:</u> Joud <u>Stories:</u> [List all stories for that sprint below]		
<u>Component Name</u>	<u>Story Sequence Number</u>	<u>Use Cases (e.g., functionalities)</u>
Monitoring expiration dates	003	The app should regularly check the expiration dates of registered items and keep them updated. This ensures accurate tracking of expiration dates and enables the app to send timely notifications to the user.
Receiving push notifications	004	The app should send push notifications to the user's device when an item's expiration date is nearing. These notifications serve as reminders to consume or discard the item, helping the user prevent wastage and maintain freshness.
<u>Follow-up meeting questions: [Joud]:</u> <ol style="list-style-type: none"> 2. <u>What has been completed since the last meeting?</u> 3. <u>What are you going to be working on next?</u> 4. <u>Do you have any issues/impediments?</u> 		
<u>Scrum's Master comments based on the above questions:</u> <u>Q1 Answer:</u> We have written code that monitors the expiry date of each item, and if it's expiring soon, the app sends a push notification to the user as a reminder. <u>Q2 Answer:</u> We are going to implement a feature that sorts the expiration dates in a descending order and display it to the user, so the users of our app can know which item is expiring sooner and prioritize items for their meal planning. <u>Q3 Answer:</u> We have faced an issue of the notification not always appearing on the user's screen but it has been fixed.		

SPRINT THREE

- **Sprint Backlog:**

5. Component Name: Sorting Expiration Dates

Story Name: Automatic date sorting

Story Sequence No: 005

Story Short Description: As a user, I want the app to automatically sort my items based on their expiration dates.

Story Long Description: The app should automatically sort the registered items in descending order of their expiration dates. This ensures that items with the closest expiration dates appear at the top of the list, making it easier for users to identify and prioritize items that need immediate attention.

6. Component Name: Sorting Expiration Dates

Story Name: Sorted items list

Story Sequence No: 006

Story Short Description: As a user, I want to have all items displayed in order of what's expiring soon

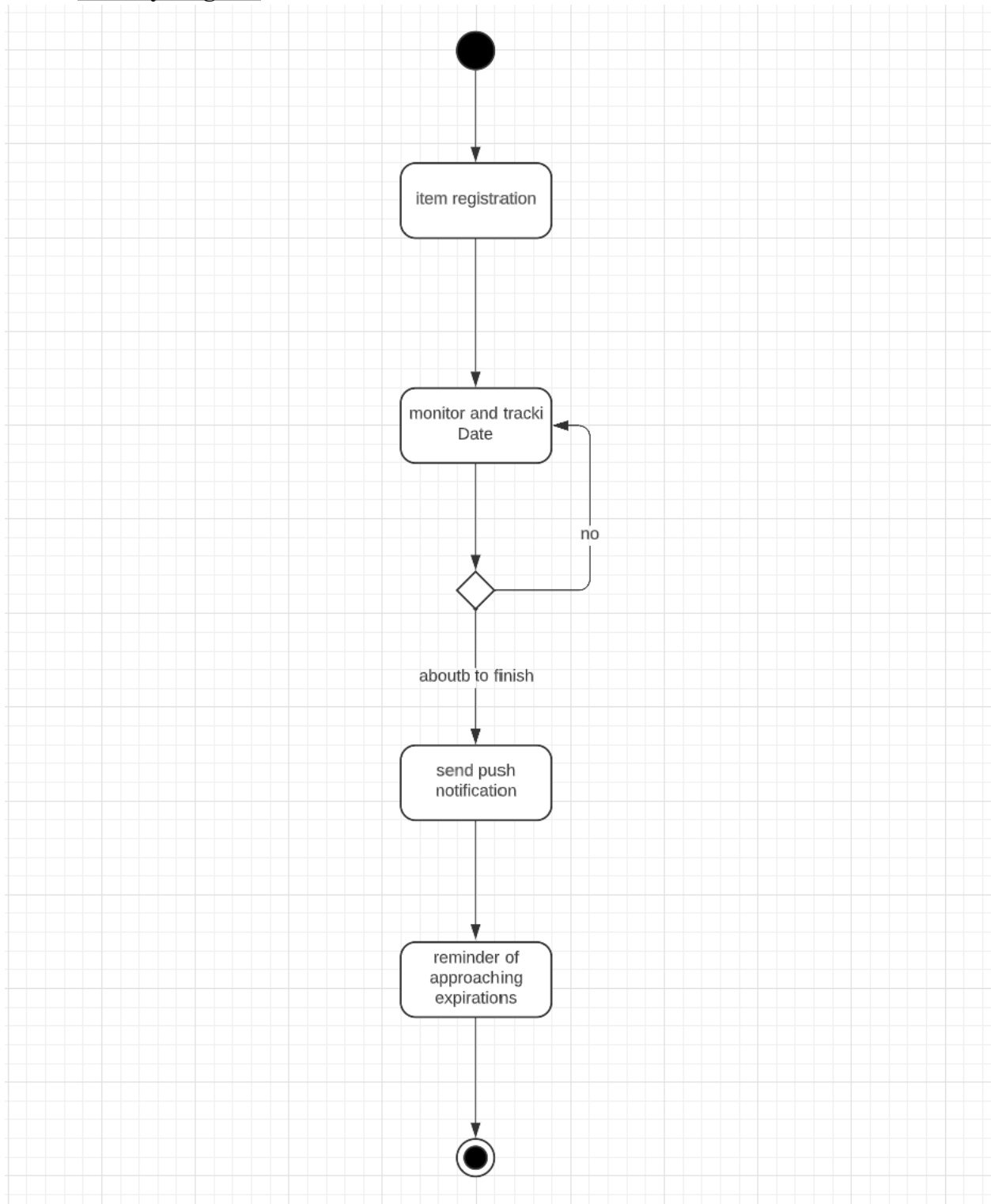
Story Long Description: The app should display items in descending order after checking the expiration dates of each item and view them to the user in a sorted list.

- **Prioritize stories and define sprints:**

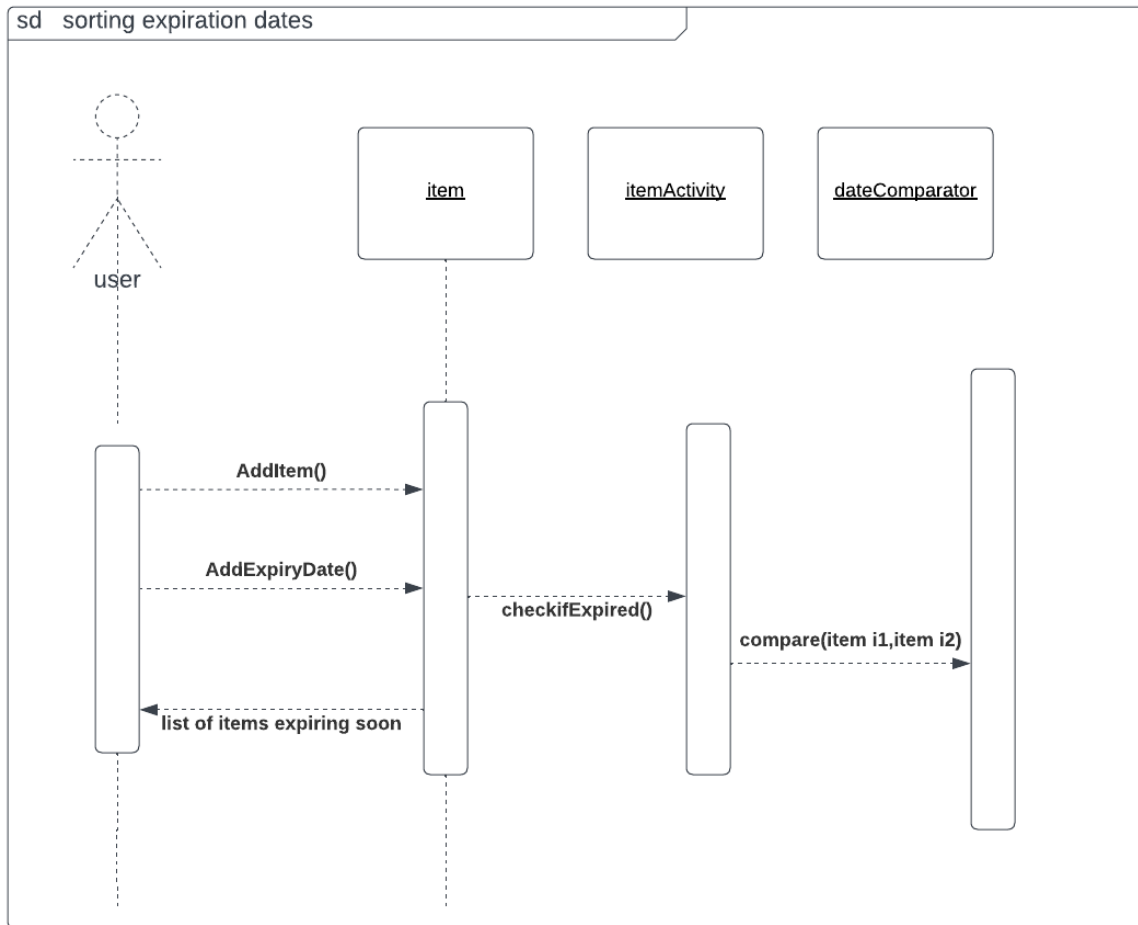
<u>Sprint #3 Test Cases</u>			
<u>[1/06/2023] Test Case Name: Automatic date sorting</u>			
<u>Test cases for Automatic date sorting</u>			
<u>Test Case No.</u>	<u>Test Case</u>	<u>Expected Results</u>	<u>(Pass / Fail)</u>
<u>TC001</u>	The user does not register items	The app list remains empty.	Pass
<u>TC002</u>	The user register one item only	The app moves item at the top of the list.	Pass
<u>TC003</u>	The user adds multiple products with various expiration dates are registered	The app sorts items in ascending order of their expiration dates.	Pass
<u>TC004</u>	The user adds numerous products with the same expiration date are registered	The app orders items alphabetically by their names.	Pass
<u>TC005</u>	The user adds a new item with an expiration date earlier than the current top item is registered,	The app places item at the top of the list.	Pass
<u>TC006</u>	The user adds the expiration date of an item is changed,	The app relocates the item to the correct place in the sorted list.	Fail
<u>TC007</u>	The user deletes an item, it is removed from the sorted list.	The app removes item from the list	Pass

<u>Sprint #3 Test Cases</u>			
<u>[1/06/2023] Test Case Name: Sorted items list</u>			
<u>Test cases for Sorted items list</u>			
<u>Test Case No.</u>	<u>Test Case</u>	<u>Expected Results</u>	<u>(Pass / Fail)</u>
<u>TC001</u>	The user adds multiple items in the list with different expiration dates.	The app displays the items in descending order based on their expiration dates when	Pass
<u>TC002</u>	The user adds all items desired	The app displays the list in a visually clear and organized manner	Pass

- Activity diagram



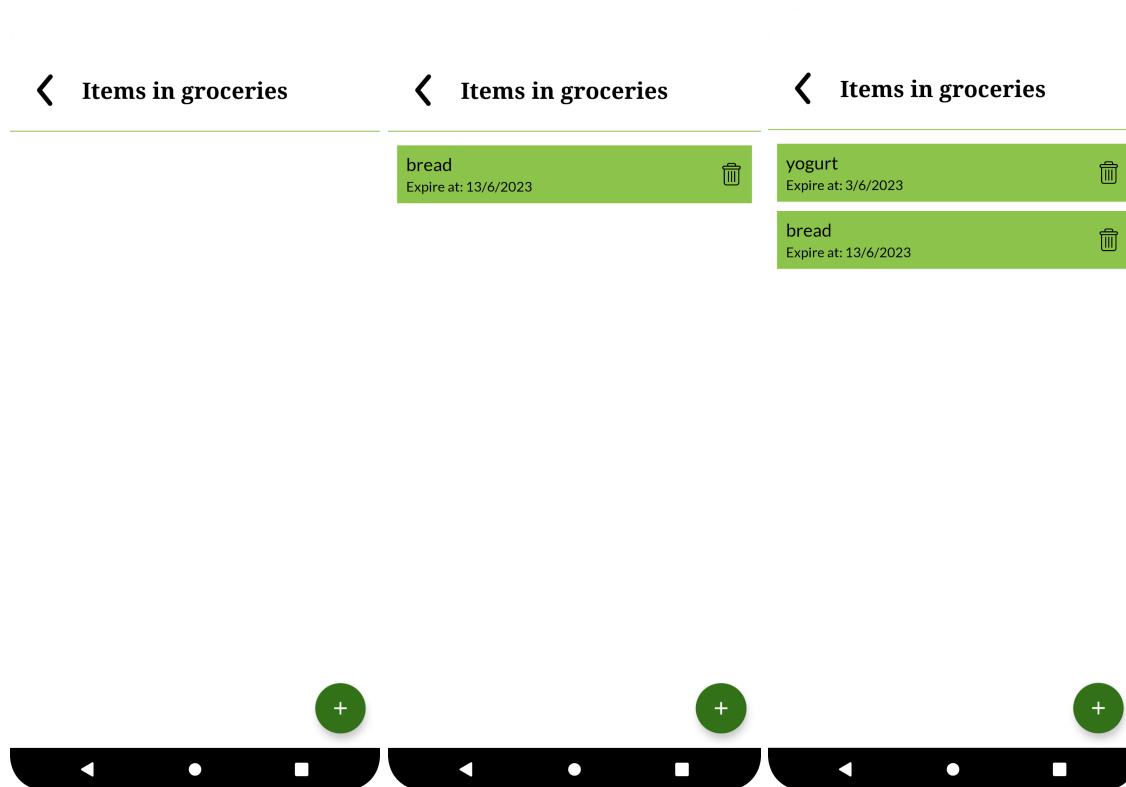
- **Sequence Diagram:**



- **Implementation**

Github link: <https://github.com/joudAlb/Ebqaa>

- **Testing**



We can see the items get automatically sorted in image 3 and in image 4.



- JIRA planning tool:

Projects / Ebqa'a

EB SPRINT 3

1 day remaining [Complete sprint](#)

GROUP BY: Assignee [Insights](#)

TO DO	IN PROGRESS	DONE 5 ISSUES
<ul style="list-style-type: none"> FD Fareeda Daghestani 1 issue 		<ul style="list-style-type: none"> Test Cases <ul style="list-style-type: none"> EB-51 ✓ FD
<ul style="list-style-type: none"> JA Joud Albattah 1 issue 		<ul style="list-style-type: none"> Implementation + Testing <ul style="list-style-type: none"> EB-54 ✓ JA
<ul style="list-style-type: none"> NM Noura Mohammed 1 issue 		<ul style="list-style-type: none"> Sequence Diagram <ul style="list-style-type: none"> EB-53 ✓ NM
<ul style="list-style-type: none"> RM Rahaf Mohammed 1 issue 		<ul style="list-style-type: none"> Sprint Meeting <ul style="list-style-type: none"> EB-55 ✓ RM

Projects / Ebqa'a

EB SPRINT 3

1 day remaining [Complete sprint](#)

GROUP BY: Assignee [Insights](#)

TO DO	IN PROGRESS	DONE 5 ISSUES
<ul style="list-style-type: none"> JA Joud Albattah 1 issue 		
<ul style="list-style-type: none"> NM Noura Mohammed 1 issue 		<ul style="list-style-type: none"> Sequence Diagram <ul style="list-style-type: none"> EB-53 ✓ NM
<ul style="list-style-type: none"> RM Rahaf Mohammed 1 issue 		<ul style="list-style-type: none"> Sprint Meeting <ul style="list-style-type: none"> EB-55 ✓ RM
<ul style="list-style-type: none"> R reemk7832 1 issue 		<ul style="list-style-type: none"> Activity Diagram <ul style="list-style-type: none"> EB-52 ✓ R
<p>Unassigned no issues</p>		

ebqaa.atlassian.net

Ebqa'a - Sprint 3 - Google Docs Ebqa'a - Agile board - Jira Ebqa'a.2 - Google Docs

Jira Software Your work Projects Filters Dashboards Teams Apps Create

Ebqa'a Software project

PLANNING

Roadmap

Backlog

Board

DEVELOPMENT

Code

Project pages

Add shortcut

Project settings

You're in a team-managed project Learn more

Projects / Ebqa'a

Backlog

Q Search

FD RM JA NM R Epic Type

Insights

EB SPRINT 3 1 Jun - 3 Jun (5 issues) 0 0 0 Complete sprint

EB-51 Test Cases	DONE	FD
EB-52 Activity Diagram	DONE	R
EB-53 Sequence Diagram	DONE	NM
EB-54 Implementation + Testing	DONE	JA
EB-55 Sprint Meeting	DONE	RM

+ Create issue

REQUIREMENTS Add dates (3 issues) 0 0 0 Start sprint

EB-40 REQ-1: The app must allow users to register food and medicine items by providing the item name and expiration date. Users sh...	TO DO	
EB-49 REQ-2: The app must continuously monitor and track the expiration dates of registered items.	TO DO	
EB-50 REQ-3: The app must provide an automatic sorting and filtering feature to organize the items based on their expiration dates.	TO DO	

+ Create issue

- Sprint meeting:

<u>Sprint Meeting(s)</u>		
<u>Project Name:</u> [Ebqa'a]		
<u>Project Members:</u> Joud Albattah - Noura Alharthi - Rahaf Alghamdi - Reem Almezeal - Fareeda Daghestani		
<hr/> <u>Sprint #3 Stand up Meeting - [DATE] [Sprint 3 meeting 1]</u>		
<u>Sprint Duration:</u> two weeks		
<u>Scrum Master:</u> Joud Albattah		
<u>Client:</u> Elderly, Pharmacies, Property owners, Caregivers, People with dietary restrictions		
<u>Pair Programmers:</u> Joud		
<u>Stories:</u> [List all stories for that sprint below]		
<u>Component Name</u>	<u>Story Sequence Number</u>	<u>Use Cases (e.g., functionalities)</u>
Sorting Expiration Dates	005	The app should automatically sort the registered items in descending order of their expiration dates. This ensures that items with the closest expiration dates appear at the top of the list, making it easier for users to identify and prioritize items that need immediate attention.
Sorting Expiration Dates	006	The app should display items in descending order after checking the expiration dates of each item and view them to the user in a sorted list.
<u>Follow-up meeting questions:</u> [Joud]:		
3. <u>What has been completed since the last meeting?</u>		
4. <u>What are you going to be working on next?</u>		
5. <u>Do you have any issues/impediments?</u>		
<u>Scrum's Master comments based on the above questions:</u>		
<u>Q1 Answer:</u> We have written code that automatically sorts the registered items in descending order of their expiration dates, and displays these items according to their order after checking the expiration dates of each item to view them to the user in a sorted list.		
<u>Q2 Answer:</u> We are going to add some features, such as barcode scanning functionality, that allow users to scan the barcode of a food item to add it to their inventory. The system will then retrieve the corresponding food item from a food database and add it to the user's inventory. If the barcode cannot be scanned, the user will have the option to manually enter the barcode number. The app will display a confirmation message once the food item has been successfully added to the user's inventory.		
<u>Q3 Answer:</u> At the beginning of the project, we encountered some problems with implementing the diagrams correctly, and faced a couple of issues in our code to sort the		

expiration dates in a descending order.