

Connect2Bahmni Flutter App for ordering Lab investigations & Drugs

This is a concept note document for ordering investigations and medications using Connect2Bahmni app. Bahmni is an Open Source Hospital Management System Licensed under AGPL License. For more details please refer to <http://www.bahmni.org>.

Note

PUBLICLY VIEWABLE DOCUMENT

Document Status: Under Research

Overview

Bahmni is a free and open source hospital system specifically designed for providing services for low resource clinics and hospitals all across the world.

Two features are required to be added under this issue. These features include booking of lab investigations by the practitioner for the patient and the secondly ordering medications for the patient. Once a particular investigation/drug is ordered, its added to consultation session. Subsequently on "finish" of session, the orders will reflect on Bahmni Server, and visible onto patient dashboard.

Stakeholders (Who is it for)

These features are to be used primarily by the doctors/practitioners and will help in the proper maintenance of the patient's records.

Why is it Helpful?

These features will be helpful for the doctors/lab practitioners to order lab investigations and medications for the patients. It will ensure proper management of the patient's records and to carry out the consultation from beginning to end smoothly.

Scope:

Currently the portal envisions to provide feature to order lab investigations and medications by the doctors for the patient. However, in future more features can be added.

User Stories:

1. The Investigation screen:

On tapping the investigations icon at the navigation bar, the user enters the investigation screen. This screen consists of a search bar where the user can enter the name of the lab test he wants to add. The results include a set of tiles where each tile contains the name of the investigation and an arrow button on the right of the tile. On selecting the investigation the user lands on a new page which contains the name of the selected investigation. It also contains a form where the user can add notes. Finally it contains an add button which saves all the investigations selected by the user and returns to the patient chart screen. The draft at the bottom shows the added investigations and the note added.

2. The Medications screen:

On tapping the medications icon at the navigation bar, the user enters the medication screen. This screen includes a search tab where the user can search for a particular drug.

The results include a set of tiles where each tile contains the name of the investigation and an arrow button on the right of the tile. On selecting the arrow button the user navigates to a new screen where he can add other important details. Finally on tapping the add button, the user reaches back to the patient chart where the draft shows the visit and encounter types, investigations, medications and the consultancy note. The user may save the consultation using the save button at the upper right of the app bar.

Possible JIRA stories

1. Search For Investigations Screen:

A page where the user navigates on tapping the investigations button. This page contains:

- A search bar where the user can search for a particular lab investigation. The search bar contains a hint text “Search for investigations”. The search results are filtered on the basis of the Order Type such as LabTest, Test, Radiology, LabSet, Procedure.
- The search bar contains a right arrow on tapping which the user navigates to a new screen where the user can enter notes to for the fulfiller for the investigations added.

2. Comment to Fulfiller:

- This screen displays the name of the investigation selected by the user and contains a text field which takes text as input. This text field is used to take the note user wants to add for the prescribed investigation. The text field shall have a hint text “Enter note for the investigation”.
- An add button to add the investigation and the note to the active consultation board and same to be reflected on the user’s screen under the draft section of the patient dashboard.

3. Active Medications List:

- Once the user taps on the medication icon present in the navigation bar, he is navigated to a new screen which displays the active medications that are prescribed to the patient. This active medications list is displayed below the search bar under the heading of “Active Medications”. This active medications list is fetched using the **Active Medications API**. This heading will be visible only if there is some Active medication.
- The Active medications include the name and corresponding details such as dosage, frequency, route, start date, duration and total quantity of the drugs selected.
- The Active medications can be updated or deleted by sliding the list tile of the active medication.

4. Search Bar For Medications Screen:

- Once the user taps on the Medications button on the patient dashboard, he is directed to the Medications Search Screen. This screen contains a search bar which has a hint text “Search for medications”. The user can search for the desired drug on entering the drug name into the Search bar.

5. Search Results:

- The results are fetched through a **Search API** and the results are displayed in form of list tiles. Each tile contains the name of the drug and an arrow at the right of the tile.
- On pressing the arrow, the user navigates to the Add Medication(details) of the Screen.

6. Add Medications(details) Screen:

- The top of the screen contains an App Bar. The App Bar has the title “Add Medications”.
- This screen shall display name of the selected drug on the top of the screen.
- Below the name of the medicine there exists:
 1. Dose Row: Signifies the quantity of medicine to be consumed at a time. Takes an integer value as input.
 2. Toggle Button: On pressing this toggle button the user can specify the morning, afternoon and night dose for the patient. On choosing this the frequency tab shall disappear
 3. Dosing Unit Row: The unit for which the dose must be taken(Eg: Capsule, Tablet, ml ,etc). It includes a dropdown which includes all the available options. These options are fetched by the **Medication API** listed at the bottom.
 4. Dosing Frequency Row: The frequency at which the dose must be taken. It includes a dropdown which includes all the available options. These options are fetched by the **Medication API** listed at the bottom.
 5. Route Row: The route through which the dose must be taken. It includes a dropdown which includes all the available options.

These options are fetched by the **Medication API** listed at the bottom.

6. Start Date Row: The date at which the patient should start the dose. It displays a datepicker through which the user can select a date.
7. Duration Row: The duration for which the patient should consume the medicine. It takes an integer value as input.
8. Duration Units Row: This includes a dropdown with Days, Weeks and Months as available options.
9. Total Quantity Row: Indicates the total quantity the patient needs to buy. It is calculated by

$$\text{Total Quantity} = \text{no. of units per time} * \text{frequency of units} * \text{total duration of the course}$$

10. SOS: A button which can be selected if SOS is needed.
 11. Instructions Row: Contains a dropdown which includes options fetched from the **Medication API**.
 12. Additional Instructions: Text Box where the user can add additional for the patient.
- Add Button at the bottom of the screen to add all the drug details to the Active Medications List. The User navigates back to the patient dashboard where he can see all the Active medications in list tiles under the draft section.
 - The list tile at the patient dashboard is slidable with two options:
 1. Update: On selecting the update option the user navigates to the extra details page where he can update the details. The add button changes to update and the user navigates back to the patient dashboard with the updated details.
 2. Remove: On selecting the remove option the selected medications is removed from the Active medication list.

Prototype link:

<https://www.figma.com/proto/rYCA4v4mQsHe25qIRysIsy/Untitled?type=design&node-id=4-172&t=RQaeQ6yLSNjrBwR-1&scaling=scale-down&page-id=0%3A1&starting-point-node-id=4%3A172&mode=design>

Design link:

<https://www.figma.com/file/rYCA4v4mQsHe25qIRysIsy/Untitled?type=design&node-id=0%3A1&mode=design&t=eejcwa7DUcG88OhA-1>

API's Used:

To fetch the list of investigations:

[https://localhost/openmrs/ws/rest/v1/concept?q=\\$query&v=custom:\(uuid,name,display,conceptClass:\(uuid,name\)\)](https://localhost/openmrs/ws/rest/v1/concept?q=$query&v=custom:(uuid,name,display,conceptClass:(uuid,name)))

To fetch the list of drugs (Search API):

[https://localhost/openmrs/ws/rest/v1/drug?q=\\$query&s=ordered&v=custom:\(uuid,strength,name,dosageForm,concept:\(uuid,name,names:\(name\)\)\)](https://localhost/openmrs/ws/rest/v1/drug?q=$query&s=ordered&v=custom:(uuid,strength,name,dosageForm,concept:(uuid,name,names:(name))))

To fetch the active medications list (Active Medications API):

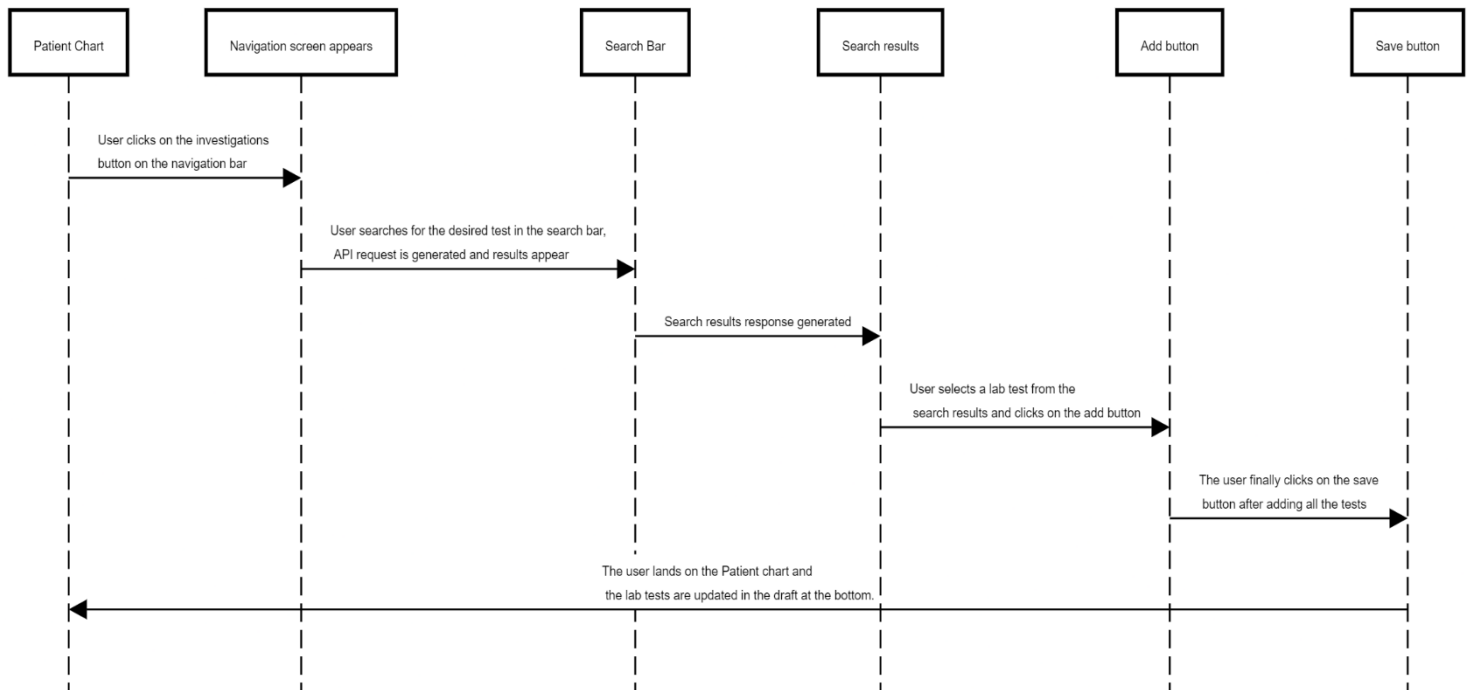
[https://localhost/openmrs/ws/rest/v1/bahmnicore/drugOrders/active?patientUuid=\\$patientvvid](https://localhost/openmrs/ws/rest/v1/bahmnicore/drugOrders/active?patientUuid=$patientvvid)

To fetch the extra details (Medication API):

<https://localhost/openmrs/ws/rest/v1/bahmnicore/config/drugOrders>

Architecture

Ordering investigations



Ordering medications

