Product Design

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Design Model

Leave Application Details
- IIIT email: Email
- Leave Application ID: Digits
- From Date: Date
- To Date: Date
- Total Days: integer
- Actual absent days: integer
- Reason to Leave: Text
- Is PT/Sports: bool
- Justification for leave: Text
- Remarks: Text
- Application Date: Date
- Related Document: Pdf
- Other Documents: Pdf

+ Validate_submissions(form_data): StatusCode
+ Submit_form_response(form_data, API):

Recent Leave Applications
- IIIT email: Email
- LID: Digits
- details: Leave Application Details:

+ Fetch_previous_leaves(LID): Json
+ Display_previous_leaves():

Authentication
- IIIT email: Email
- password: String

+ post_user_creds(email, password): StatusCode
+ Identify_user_type(valid_email, API): userType
+ Redirect_user(userType, navigation)

Backend API (JSON)

Submit_form_response

Fetch_previous_leaves

LDAP AUthenticate

Fetch_notification

Fetch_bank_details for user

Submit_bank_details

Fetch_general_details

Notification Handler
- Notification ID: Digits
- Status: Enum

+ Fetch_for_notifications(API): Notification
+ Mark_as_read(&status):
+Swipe_to_delete(Notification ID):

Bank Details
- IIIT email: Email
- Account holder name: String
- Account Number: Digits
- Branch Name: String
- Branch Address: Text
- IFSC Code: Digits
- Remarks: String
- Passbook / Cancelled Cheque: PDF
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+ Fetch_bank_details(email, API): Json
+ Display_bank_details():
+ Submit_bank_details(form_input, API)

General Details
- IIIT email: Email
- Name: String
- Roll Number: Digits
- Aadhar Number: Digits
- Department: String
- Degree: String
- Specialization: String
- General: Enum
- Category: String
- Mobile: Digits
- Academic Year: Date(YYYY)
- Parent Email: Email
- Father Name: String
- Mother Name: String
- Street: String
- City: String
- State: String
- Country: String
- PIN: Digits

+ Fetch_general_details(email, API): Json
+ Display_general_details()::

Link: https://lucid.app/documents/view/151acb36-7aef-4608-9ed2-1645f5e533e8

API (provided by client)	**Class state:** Has access to all the storage and login in the IMS backend. **Class Behaviour:** ● Json input (takes input in json format when app performs POST) ● Json output (gives output in json format when app performs GET)

Authentication	**Class state:** Contains the information required to perform LDAP authentication using the APII ● Email-ID (username/uid) ● Password **Class Behaviour:** ● post_user_creds(): Send the LDAP API the credentials of username and password. ● Identify_user_type(): Used to identify if the valid user (if any) is a faculty or student. ● Redirect_user(): Redirects to different pages based on action (either dashboard or forgot password page)

Bank Details	**Class State:** Contains bank details of a valid user. ● Email (unique-id/username) ● Account holder name ● Account number ● Branch Name ● IFSC Code ● Branch Address ● Remarks ● Passbook / Cancelled Cheque **Class Behaviour:** ● Fetch_bank_details(): Used to fetch bank details from API ● Display_bank_details(): After fetching displays the details. ● Submit_bank_details(): In the edit bank details page when the bank details are submitted the new contents get sent to the server.

ProfileDetails	**Class state:** This stores all the personal details of the user
	- Email (unique-id / username) - Name - Roll Number - Date of Birth - Aadhar Number - Department - Degree - Specialisation - Gender - Category - Mobile - Academic year - Admission time - Parent email - Father Name - Mother Name - Street - City - State - Country - Pin Code **Class Behaviour:** - Fetch_profile_details(): Used to fetch general details of the user from IMS - Display_profile_details(): After fetching displays the details

| Leave Application Details	**Class State:** This is the main class that contains details about the leave application form.
	- LID (Leave Application ID) - Email (username/ uid) - From Date - To Date - Total days - Actual absent days - Reason for leave - Is PT/Sports only (bool) - Justification for leave - Application Date - Related Documents - Other Documents **Class Behaviour:** - Validate_submission(): This method makes sure all fields are filled and they are of right type - Submit_from_response(): Handles submission of the leave applications to the API.

Recent Leave Applications	**Class State:** This class is used to handle previous submissions of leave applications and their status. ● Email (username/ uid) ● Leave Application ID (LID) ● Leave Application Details for the given LID **Class Behaviour:** ● Fetch_previous_leaves(): Used to fetch from the API information about previous submissions of leave applications ● Display_previous_leaves(): Display the contents of previous leave applications along with the "status" of that leave.

| Notification Handler	**Class State:** This class is used to handle situations like leave applications getting approved or transcript getting updated. ● Notification ID ● Status: (read / unread) **Class Behaviour:** ● Fetch_for_notifications(): Everytime the notification handler fetches data from API, either an empty list is returned or a list of notifications is returned which are to be displayed. ● Mark_as_read(): Once the notification is clicked on, change its status to read from unread. ● Swipe_to_delete(): Everytime you swipe right on a notification, it gets deleted.

Sequence Diagram(s)

1. **AUTHENTICATION:**
   https://lucid.app/lucidchart/f4d8ba08-6da9-4685-ac57-7821d25057d5/edit?viewport_loc=73%2C1247%2C2430%2C1212%2C0_0&invitationId=inv_488e2b86-7c1f-4430-aaf3-cb8bd694afbf
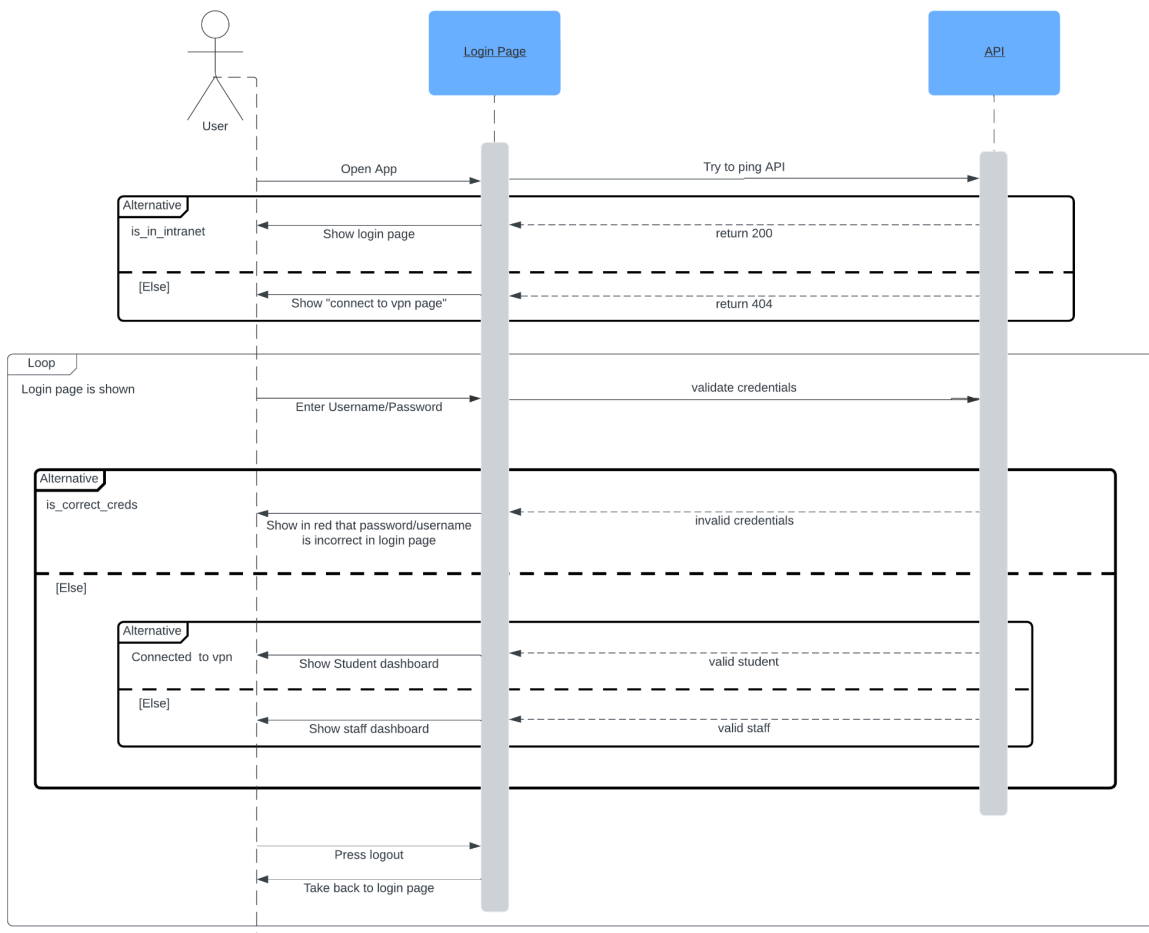
2. **Fetch details / Post edited details in Bank:**

https://lucid.app/lucidchart/194daf9a-f88e-420a-8cb2-c61fa8eb9b06/edit?viewport_loc=-1140%2C-507%2C1914%2C955%2C0_0&invitationId=inv_2701abdb-b1f4-4db5-95c0-41781965f172
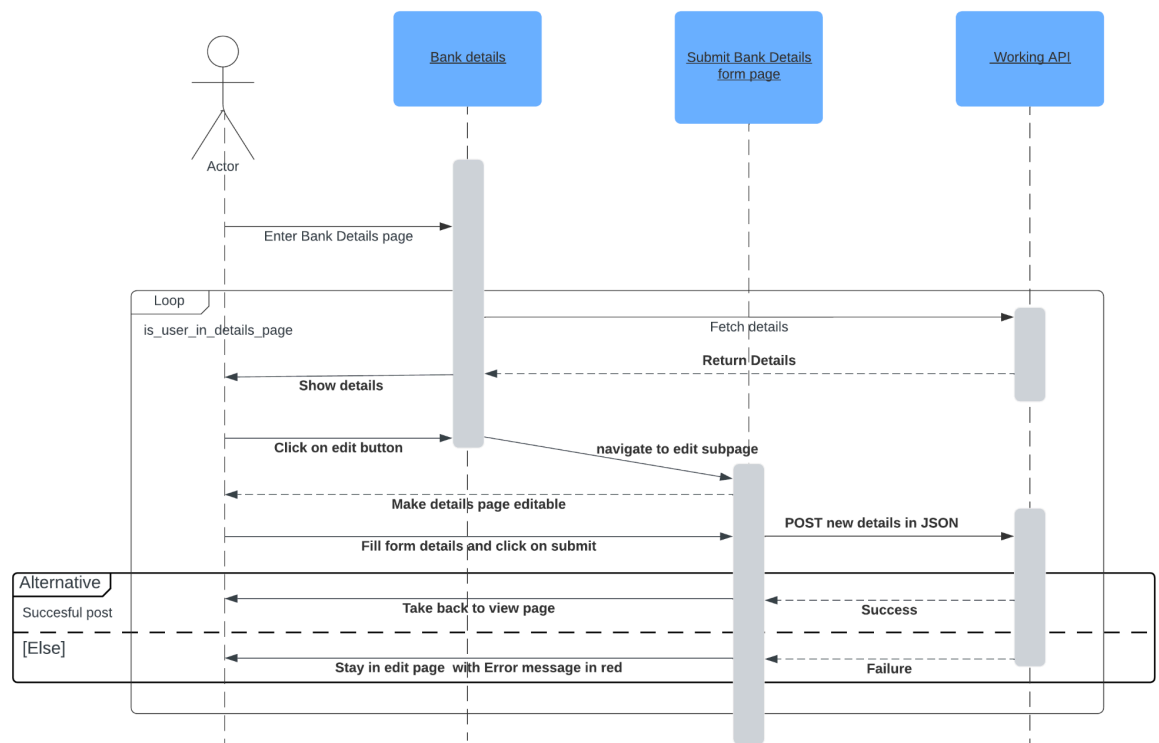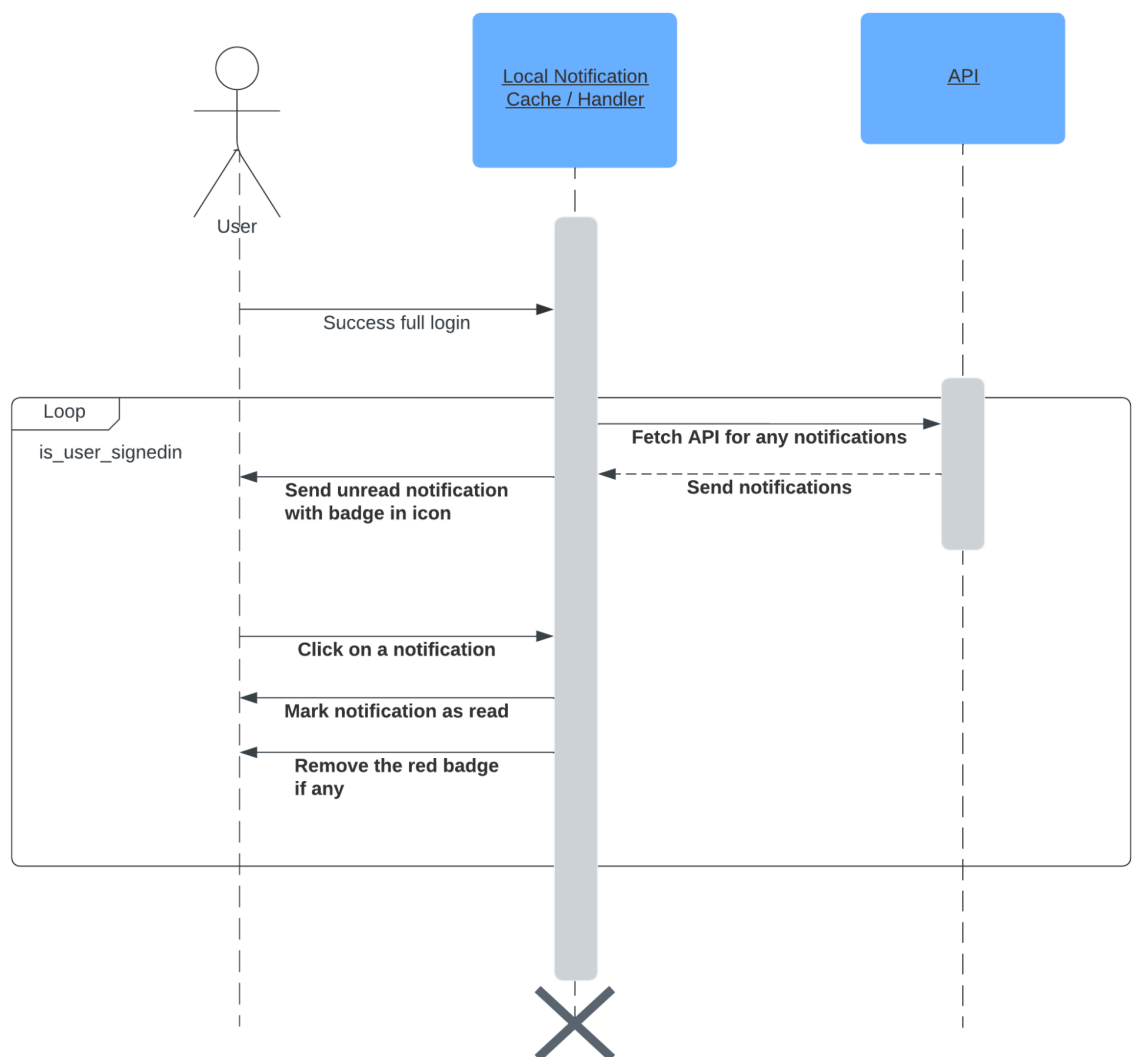
3. Leave Application page (form):
https://lucid.app/lucidchart/fa6e4443-460c-4337-8cd8-2745dbf572bd/edit?viewport_loc=-1116%2C-636%2C2267%2C1131%2C0_0&invitationId=inv_7580b9a4-41ac-4d7c-be48-1aecdbd1b878
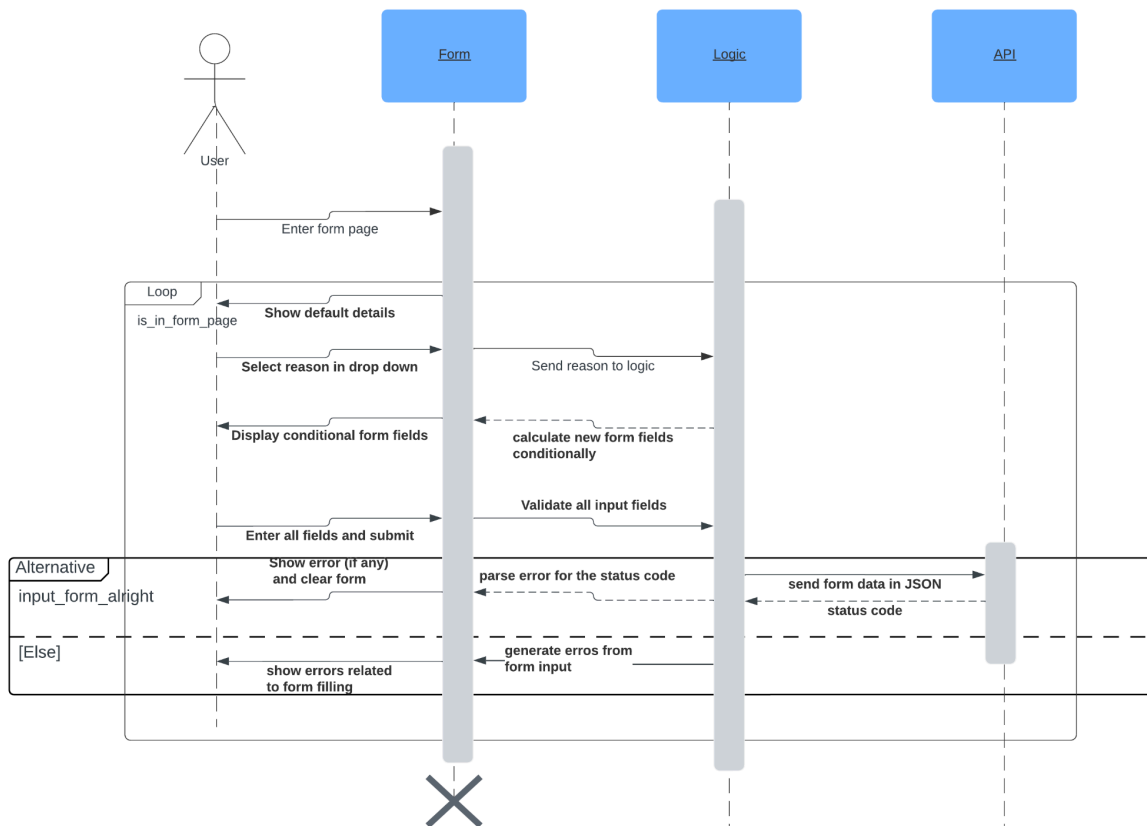
4. Notification Handling:

Design Rationale

Below are the issues encountered during the project along with the implemented solutions:

1. **Issue:** Incorporating two separate screens for General Details and Location Details.
   Solution: To streamline the user experience and align with common expectations in modern mobile applications, we have decided to integrate location details into the General Details screen. This adjustment is made considering the limited amount of location data and the absence of an edit profile option in the application.

2. **Issue:** Implementing separate screens for no internet connection and VPN connection.
   Solution: Originally, we continuously checked internet and VPN connections throughout the application to prevent users from losing data or exiting the application form during sudden network issues or VPN failures. However, we have now transitioned to using alert messages instead of redirecting to new screens. This modification allows users to retain the entered data during the form, ensuring a smoother user experience.

3. **Issue:** Fetching API repeatedly on different screens causing app slowness.
   Solution: To address this issue and enhance user experience, we implemented a solution where we fetch all APIs upon launching the application. This ensures users can utilise the app seamlessly even in scenarios of temporary network or VPN disruptions, while also significantly improving app loading speed.

4. **Issue:** Maintaining static Leave Apply Form API.
   Solution: By incorporating all possible fields within the Leave Apply Form and course lists for missed exams, we addressed this issue by assigning null values to unselected options and transmitting the complete API with relevant data.

5. **Issue:** Utilising two edit pages for general profile and location details.
   Solution: Initially, we included separate edit screens for General Profile and Location Details. However, as updating these details occurs offline in the IMS, we eliminated the need for separate edit pages, streamlining the user experience.