SOFTWARE REQUIREMENT SPECIFICATION
Laundry-IITJ

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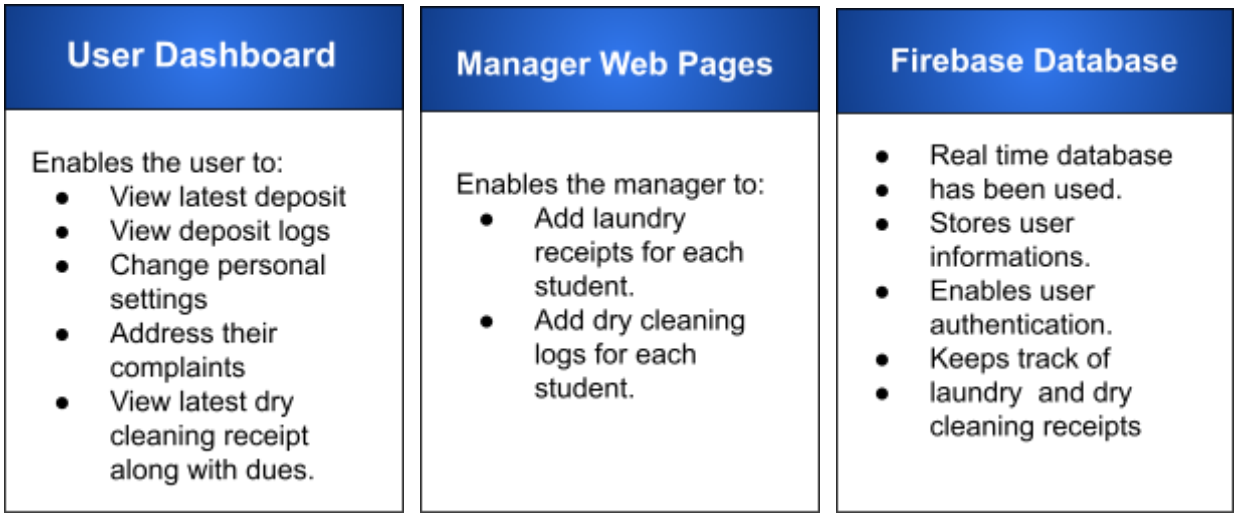
MOTIVATION

IIT Jodhpur provides laundry facilities to the students wherein the laundry service provider collects the clothes from the resident students twice a week and provides a slip to the student with the details of clothes given for the laundry. There are many problems that students and laundry service provider face in this system. Often the students misplace the slip which creates a problem for both the student and the service provider. Also, there is uncertainty in the timings of depositing and collecting the laundry. The management of the laundry is unorganized at present. Often the clothes get misplaced by the laundry service provider and there is no formal complaint procedure.

SOLUTION PROPOSED

- A portal with the database accessible to the laundry service provider and front-end accessible to the customer.
- Each user will have an account created in the system. The utility logs details such as number of clothes deposited, last date of deposit, dry cleaning charges etc.
- Automation of the slip system will prove to be helpful for both- the service providers as well as the customers.
- Manager will have webpages to enable automation of the slip-system.
- There will be a space for complaint redressal too.

OVERVIEW



HIGH-LEVEL DESIGN

Database:

The app requires a database to store user information such as login credentials, personal details, Deposit logs and Dry Cleaning Logs . The database should be designed to ensure data integrity, security, and scalability.

1. The data is feeded by the laundry manager on the web pages which is then stored to the firebase real-time database.
2. The user details entered at the time of sign in is also stored in the real time database.
3. The user can update his profile which gets updated in the database.
4. We have also used storage provided by firebase to store profile pictures for the user.

Front-end interface:

The app should have a user-friendly interface to display Deposit logs and dry cleaning logs to users. This website allows the user to navigate through various functionalities through a dashboard. It also allows the user to easily address their problems to the laundry manager. The Manager side portal allows the manager to add receipts for particular students. It also allows the manager to smoothly keep a record of dry cleaning for each student.

TECH STACK USED:

HTML:

To develop the web app pages, HTML has been used. This is because of several reasons. HTML provides a clear and concise way to structure and format content, making it easy for both humans and machines to understand. It is a flexible language that can be used to create a wide range of web pages, from simple static sites to complex dynamic applications. Additionally, HTML is supported by all major web browsers, ensuring that our website will be accessible to a broad audience. Finally, by separating content from presentation, HTML allows for easy maintenance and updates to web pages, which can save time and resources in the long run.

CSS:

To style the web app pages, CSShas been used. CSS handles the look and feel part of a web page. CSS allows you to separate the visual presentation of a web page from the content, making it easier to maintain and modify the design of a website without changing the underlying HTML code. CSS offers a wide range of design options, including the ability to control typography, layout, colors, and more, giving designers greater control over the look and feel of a web page. Moreover, CSS provides easy maintenance. You can write CSS once and then reuse the same sheet in multiple HTML pages. Additionally, by using external style sheets, you can make changes to the design of a website across all pages simultaneously, which can save time and reduce the potential for errors.

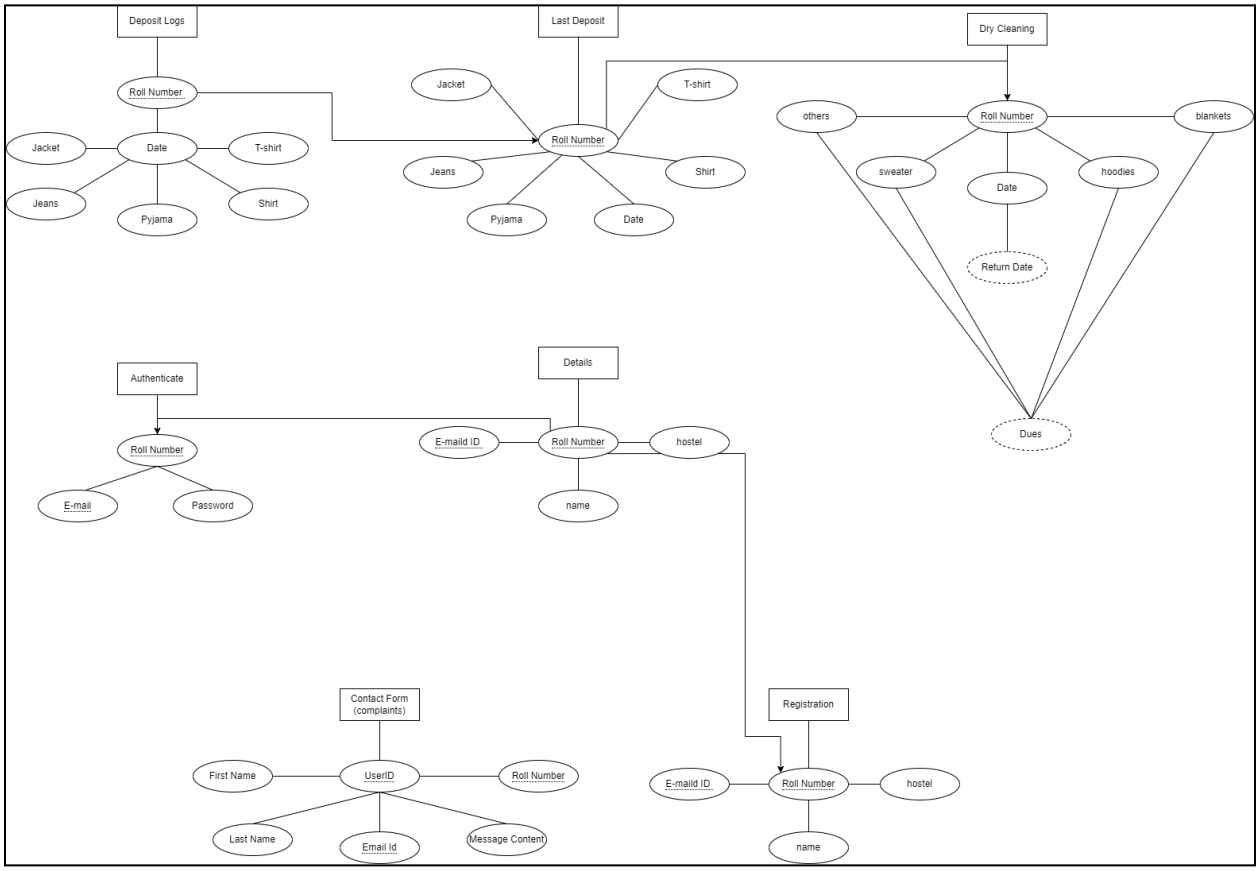
JAVASCRIPT:

JavaScript is a powerful scripting language that can be used to add interactivity, dynamic effects, and functionality to web applications. JavaScript allows developers to create responsive and interactive web applications that can update and display data in real-time without the need for a page refresh, providing a better user experience. JavaScript can be easily integrated with other web technologies such as HTML and CSS, making it easy for developers to create dynamic and interactive web pages. Moreover, JavaScript can be used across different web browsers and operating systems, making it an ideal choice for building cross-platform web applications. JavaScript is an open-source language, and many libraries and frameworks are available for free, reducing development costs.

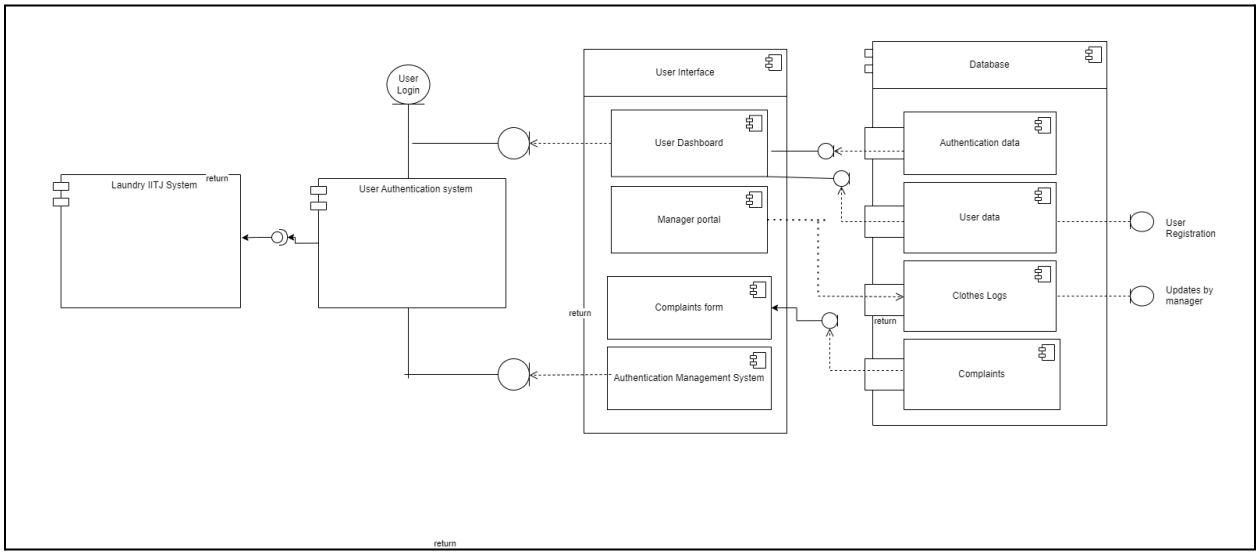
FIREBASE:

To store our database, Firebase has been used. Firebase is a backend-as-a-service (BaaS) platform that provides developers with a range of tools and services to build scalable and secure web applications quickly. Firebase provides real-time data synchronization, which means that any changes made to the data are immediately reflected across all connected devices, making it ideal for building collaborative applications. Moreover, Firebase is designed to scale automatically, which means that as your application grows, Firebase can handle the increased traffic and data storage needs without requiring additional infrastructure or configuration. Additionally, Firebase provides a range of security features, including data encryption, two-factor authentication, and more, to ensure that your web application is secure and protected from cyber threats. Firebase can be easily integrated with other Google Cloud Platform services and third-party APIs, making it easy for developers to add new features and functionality to their web applications.

ENTITY-RELATION DIAGRAM:

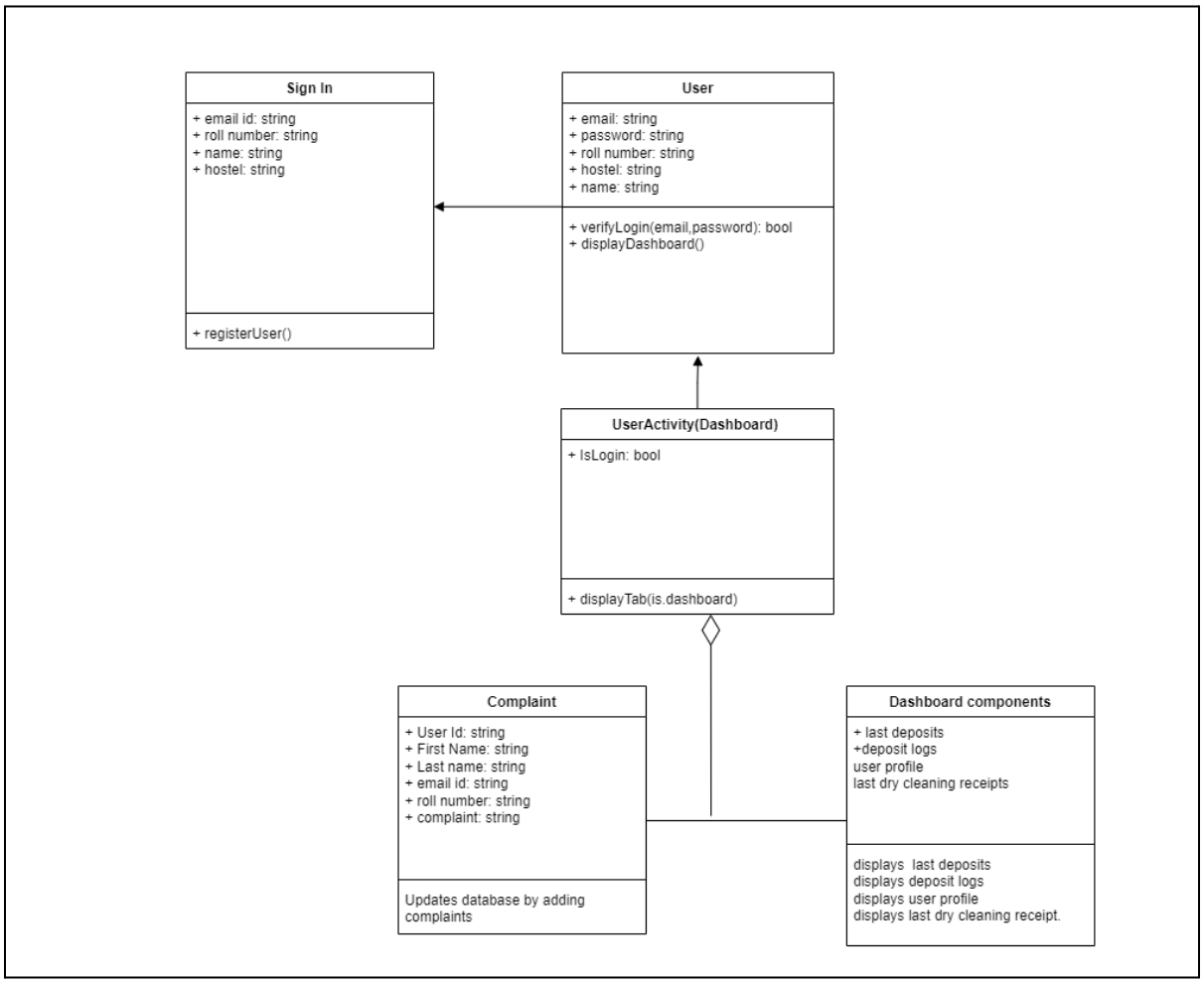


COMPONENT DIAGRAM:



LOW-LEVEL DESIGN

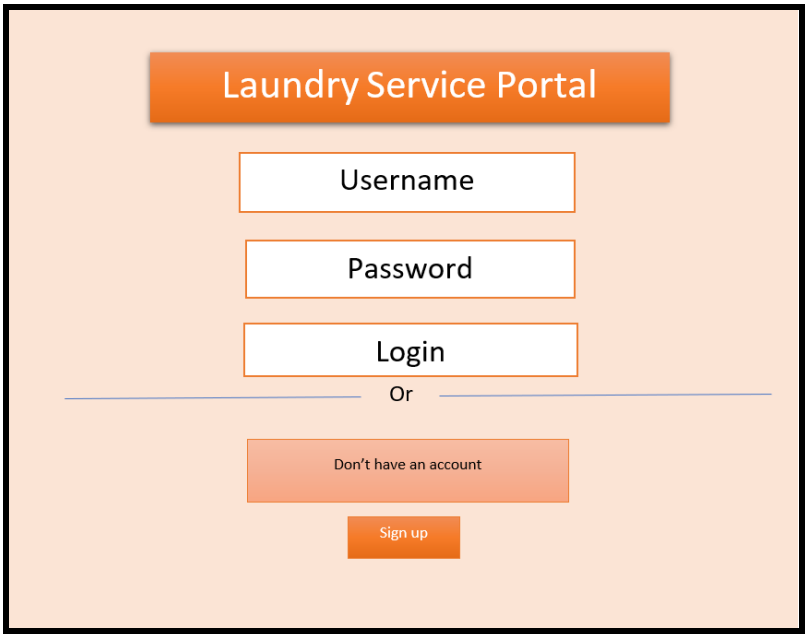
CLASS DIAGRAM:

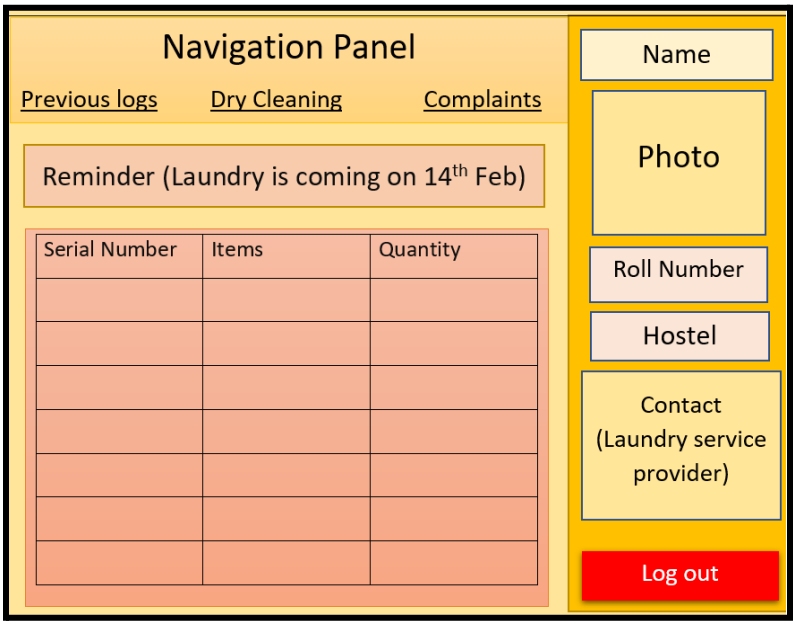


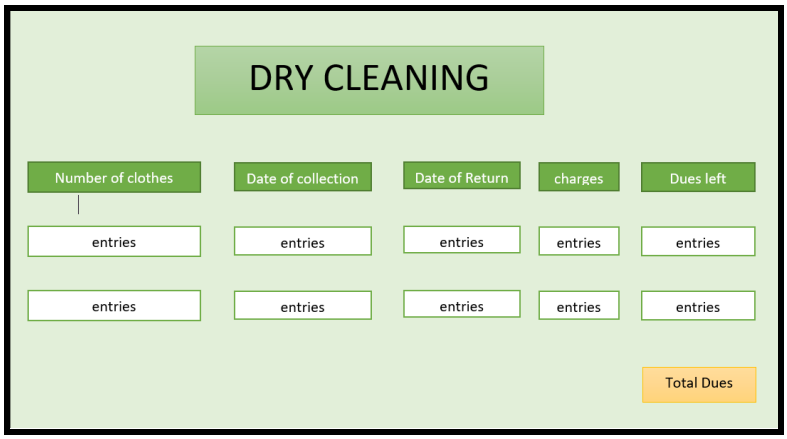
FUNCTIONALITIES SUPPORTED BY LAUNDRY-IITJ

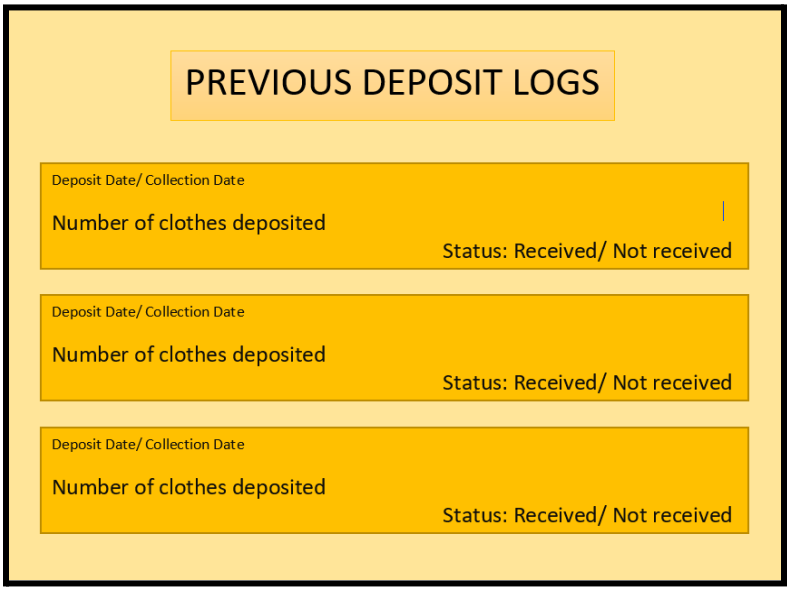
Functionalities	Sub-functionalities
Sign-in	1. Allows the user to sign-in to Laundry-IITJ. 2. Takes user details at the time of sign-in. 3. Check whether the email-id provided is @iitj.ac.in domain or not. 4. Send a verification mail.
Sign-up	1. Allows the user to sign up to their dashboard. 2. Verifies whether the person is authenticated to login or not.
Manager portal to upload information	1. Online slip system: Adding the amounts and type of clothes being added for a student 2. Dry Cleaning: Adding details of dry cleaning for a particular student. How many clothes were being given and of what type.
Dashboard	1. Allows navigation to different webpages. 2. Displays user information. 3. Displays last deposit receipt, last dry cleaning receipt, complaints webpage, about us page, personal information page.
Display of Previous Logs	1. Keep track of the clothes being deposited by each student. 2. Displays the deposit logs on the user portal (for student)
Display of dry cleaning logs	1. Keep track of the clothes being deposited by each student for dry cleaning. 2. Displays the last dry cleaning log on the user portal (for students). 3. Calculates the dues for each student for dry cleaning. 4. We have also provided a QR to enable payments.
My account (personal settings)	1. Allows the user to view his profile. 2. Allows the user to update their profile picture. 3. Allows the user to update their password.
Complaint portal	1. Enables the user to address their problems to the laundry manager.

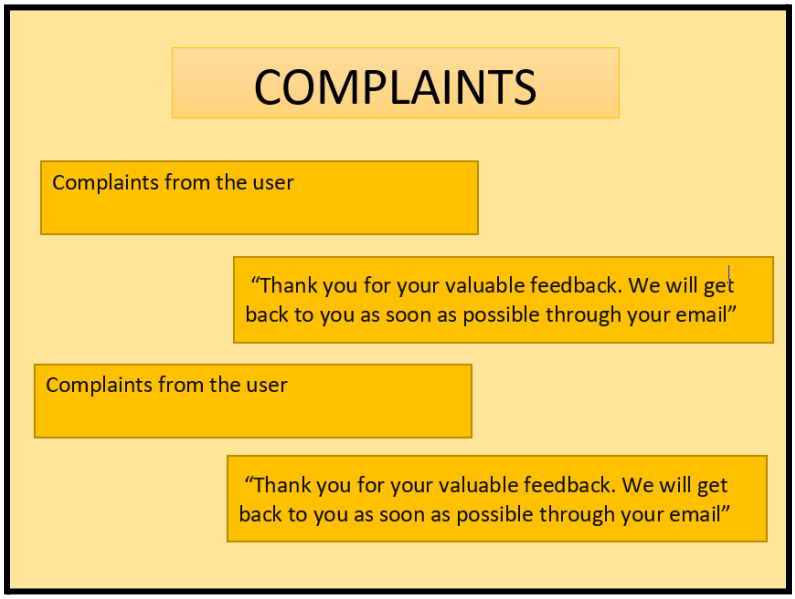
FRONT-END LAYOUT (SCHEMATIC)






DRY CLEANING
Number of clothes
Date of collection
Date of Return
charges
Dues left
entries
entries
entries
entries
entries
entries
entries
entries
entries
entries
Total Dues


PREVIOUS DEPOSIT LOGS
Deposit Date/ Collection Date
Number of clothes deposited
Status: Received/ Not received
Deposit Date/ Collection Date
Number of clothes deposited
Status: Received/ Not received
Deposit Date/ Collection Date
Number of clothes deposited
Status: Received/ Not received

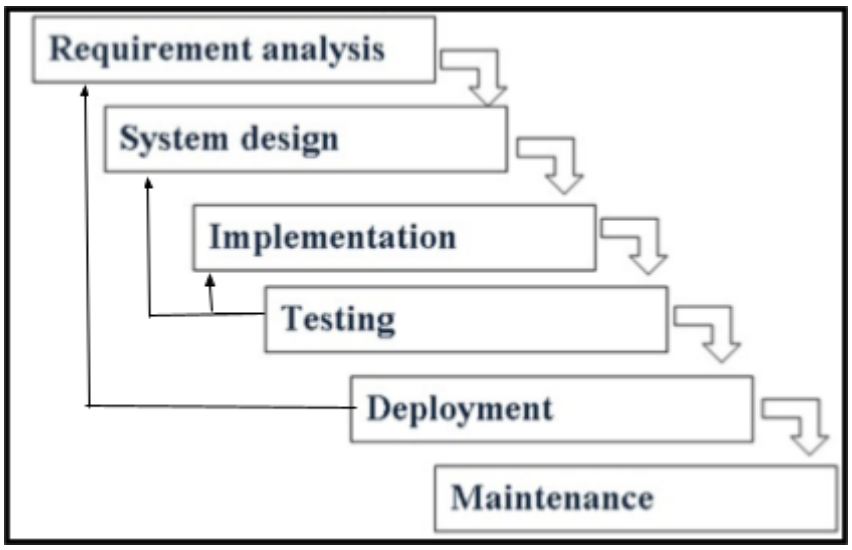

COMPLAINTS
Complaints from the user
"Thank you for your valuable feedback. We will get back to you as soon as possible through your email"
Complaints from the user
"Thank you for your valuable feedback. We will get back to you as soon as possible through your email"

FUNCTIONALITY

- Functional Completeness: The system serves all the purposes discussed in the problem statement. In case of any issue faced by the user, he or she may contact the admin (functionality provider). A robust complaint portal is also being made to ensure that all problems get resolved.
- Accountability and authenticity: With a secure database of all previous deposits, non-delivery of clothes by service provider and non payment of dues by student cannot be repudiated. A login system ensures authenticity of each user.
- Usability: The utility is intended to be easy to use, with a comfortable user interface involving built-in buttons and Navbars.

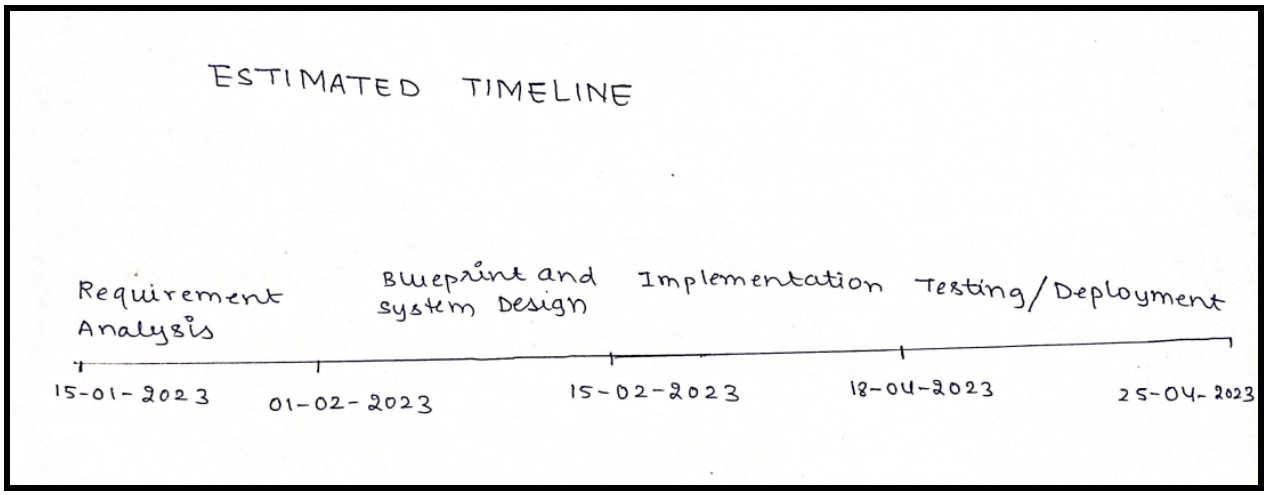
PROJECT MODELING

The development phase of the project will be implemented through a waterfall model.

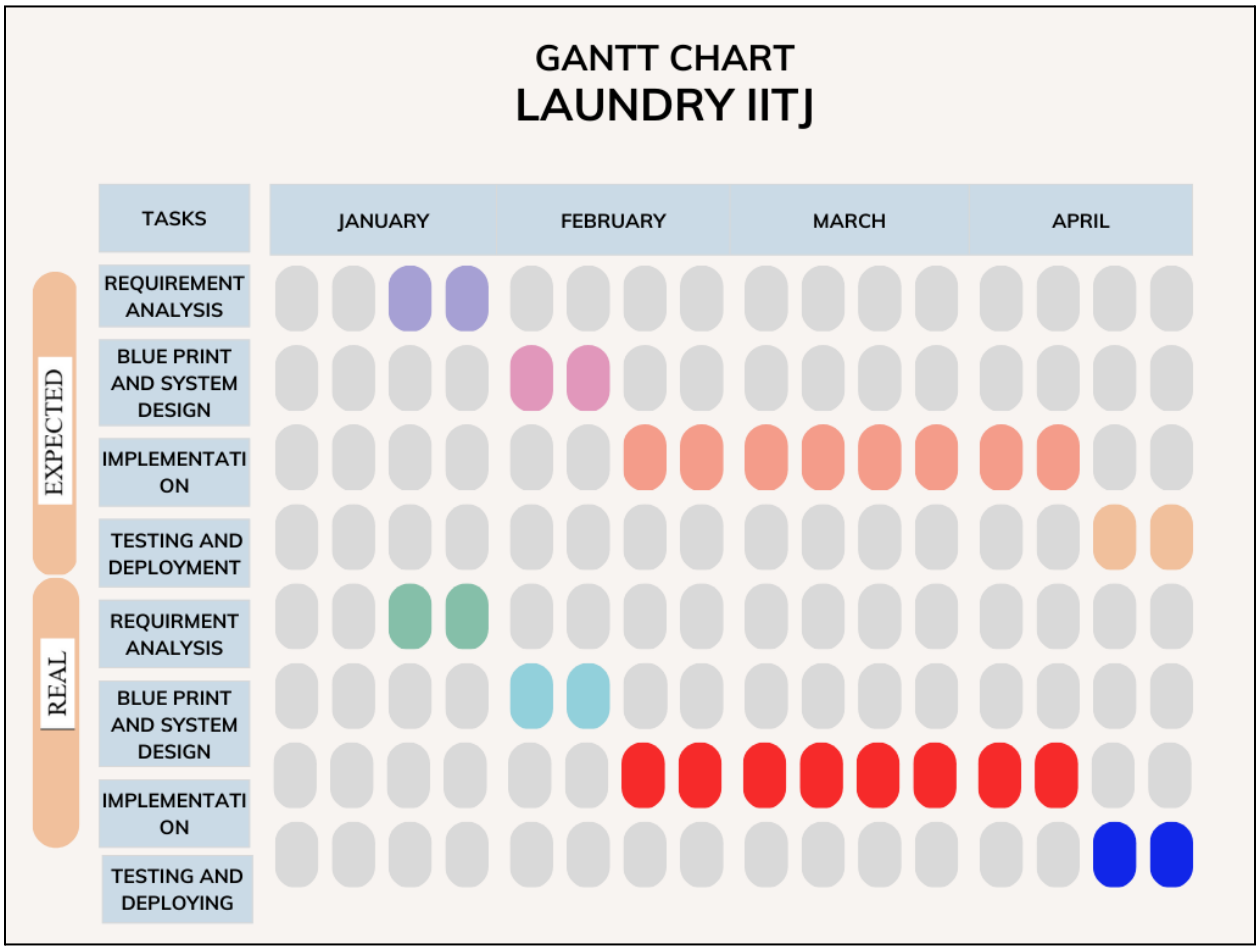


ESTIMATED TIME

Requirement analysis - 2 weeks (completed)
System and blueprint design - 2 weeks
Implementation - March, April
Testing, Deployment - first week of May


ESTIMATED TIMELINE
Requirement Analysis
Blueprint and system Design
Implementation
Testing/Deployment
15-01-2023
01-02-2023
15-02-2023
18-04-2023
25-04-2023

GANTT CHART:


GANTT CHART
LAUNDRY IITJ
TASKS
JANUARY
FEBRUARY
MARCH
APRIL
EXPECTED
REQUIREMENT ANALYSIS
BLUE PRINT AND SYSTEM DESIGN
IMPLEMENTATION
TESTING AND DEPLOYMENT
REAL
REQUIRMENT ANALYSIS
BLUE PRINT AND SYSTEM DESIGN
IMPLEMENTATION
TESTING AND DEPLOYING

	Features planned initially	Features provided
To the student	1. Number of clothes deposited 2. Logs of previously deposited and received clothes 3. Complaint portal 4. Can view reminders	**Sign-in** 1. Allows the user to sign-in to Laundry-IITJ. 2. Takes user details at the time of sign-in. 3. Check whether the email-id provided is @iitj.ac.in domain or not. 4. Send a verification mail. **Sign-up** 1. Allows the user to sign up to their dashboard. 2. Verifies whether the person is authenticated to login or not. **Dashboard** 1. Allows navigation to different webpages. 2. Displays user information. 3. Displays last deposit receipt, last dry cleaning receipt, complaints webpage, about us page, personal information page. **Display of Previous Logs** 1. Keep track of the clothes being deposited by each student. 2. Displays the deposit logs on the user portal (for student) **Display of dry cleaning logs** 1. Keep track of the clothes being deposited by each student for dry cleaning. 2. Displays the last dry cleaning log on the user portal (for students). 3. Calculates the dues for each student for dry cleaning. **My account (personal settings)** 1. Allows the user to view his profile. 2. Allows the user to update their profile picture. 3. Allows the user to update their password. **Complaint Portal** 1. Enables the user to address their problems to the laundry manager.
To the laundry manager	1. To Issue Reminders 2. View and address complaints 3. Maintain a database with logs. 4. Load calculation	1. Online slip system: Adding the amounts and type of clothes being added for a student 2. Dry Cleaning: Adding details of dry cleaning for a particular student. How many clothes were being given and of what type.
To the student	1. Dry clean payment window	1. We have also provided a QR to enable payments in the Dry Cleaning page.