Software Requirements Specification

for

Laundry Wala

Version 1.0 (approved)

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Revision History

Name	Date	Reason For Changes	Version

1. Introduction

1.1 Purpose

The purpose of this document is to outline the architecture and provide several views of the system design of the project. This document high- lights the flow of our project in terms of different diagrams, observations, results, and how different services both on the client-side and on the vendor side work and perform as intended

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1.2 Document Conventions

This document uses LM Roman Computer Modern font for heading as a subheading. For normal text font Arial is used. For headings font size 14 is used and for subheading and text font size 11 is used and the subheading is made bold. And for emphasizing points made or used from other publications, we will use bold format conventions. And for the published paper we will mention it with the given link if possible.

1.3 Intended Audience and Reading Suggestions

This Software Design Specification document is intended for:

• Supervisor and Co-coordinator.

• Members of the jury who can have a detailed overview of the project design and architecture.

• Developers who can review the project's features and how different components interact together to give a better insight of where they should target their efforts to improve and add more functionalities to the project.

• Marketing and business management experts that can provide us with valuable insight on the business logic of our project and how can we maximize the efficiency of service as a mediator between the client and the vendor model, and what management and business principals need to implement to make a more well-rounded model.

• Software testers can use this document to generate appropriate test cases and strategies to make testing more effective and organized.

1.4 Product Scope

We plan on providing the customers with a one-stop platform that caters to all of their laundry needs but providing multiple services and facilities within a wide range, ranging from washing, ironing, dry cleaning, chemical wash, and much more. The system would include:
• Secure registration, authentication, and profile management for customers.
• Navigation mechanism so that the location of the customer can be ascertained and pinpointed.
• A service selection system that is easily accessible for the user.
• Order booking and management system that always keeps the user in full control over their order selection and reiteration hence provide complete control of the service that they are buying making a transparent system that is user friendly(**quoted from Mohammed K. Fageha King Abdul-Aziz University**).
• Sales statistics for vendors.
• Wallet features for customers.

1.5 References

https://www.projectmanager.com/blog/project-scope
https://www.researchgate.net/publication/275539061_Significance_of_Scope_in_Project_Success

https://www.researchgate.net/publication/257718824_Managing_Project_Scope_Definition_to_Improve_Stakeholders'_Participation_and_Enhance_Project_Outcome

https://faculty.washington.edu/jtenenbg/courses/360/f04/sessions/schneidermanGoldenRules.html

2. Overall Description

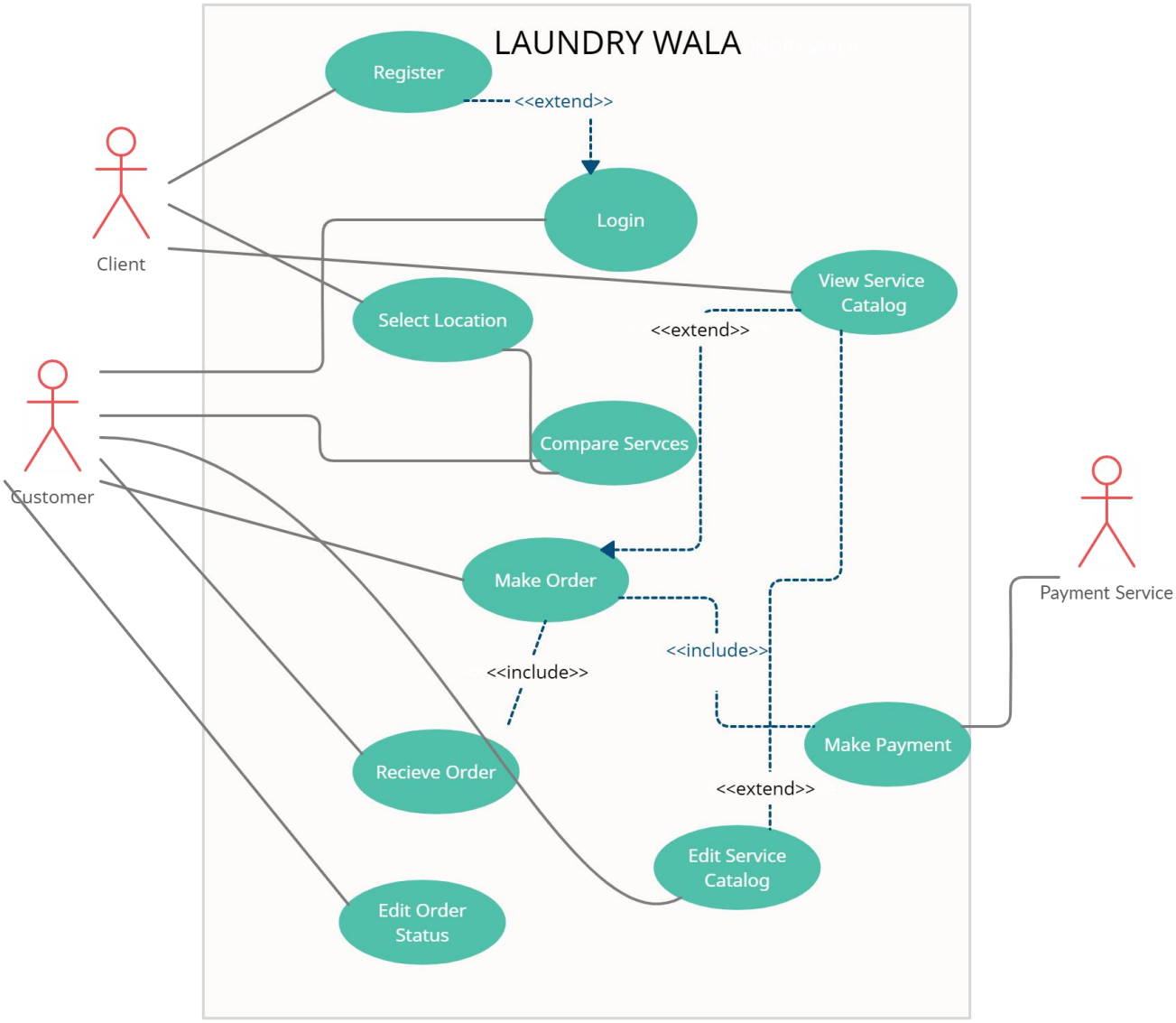
2.1 Product Perspective

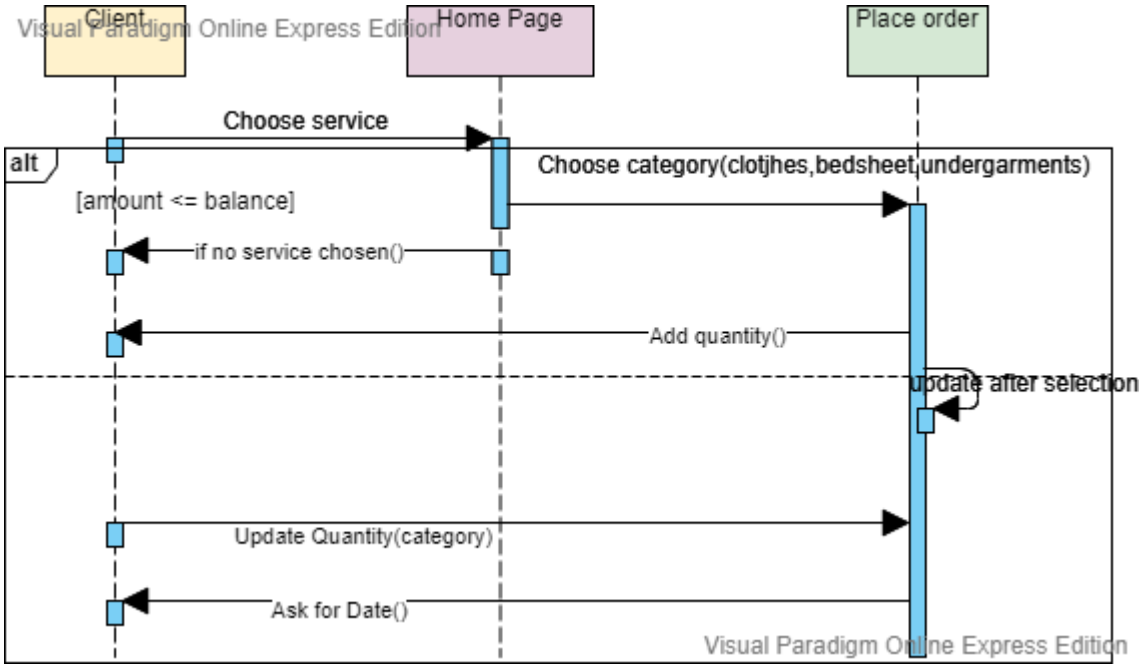
Today the world revolves around convenience due to which the technological landscape has changed. And to cope with this new era, on-demand online services are introduced which range from food, clothing (apparel), electronic appliances, groceries, etc. But there is an extraordinary lack of on-demand online laundry services that baffled us. In our society, they are many households in which women run the household and earn a living for their families' financial security.
These women have a packed schedule between their housework, cooking, cleaning, etc. But new facilities provide these women with relief by delivering those groceries or food on their doorstep. But there is no such facility for laundry available.
Our project's primary purpose is to produce such an application from the ground up that will fill this void, which is built around providing convenient, fast, and safe laundry to all from the comfort of their homes. Hence filling a glaring hole that is present in Pakistan's on-demand online service landscape.

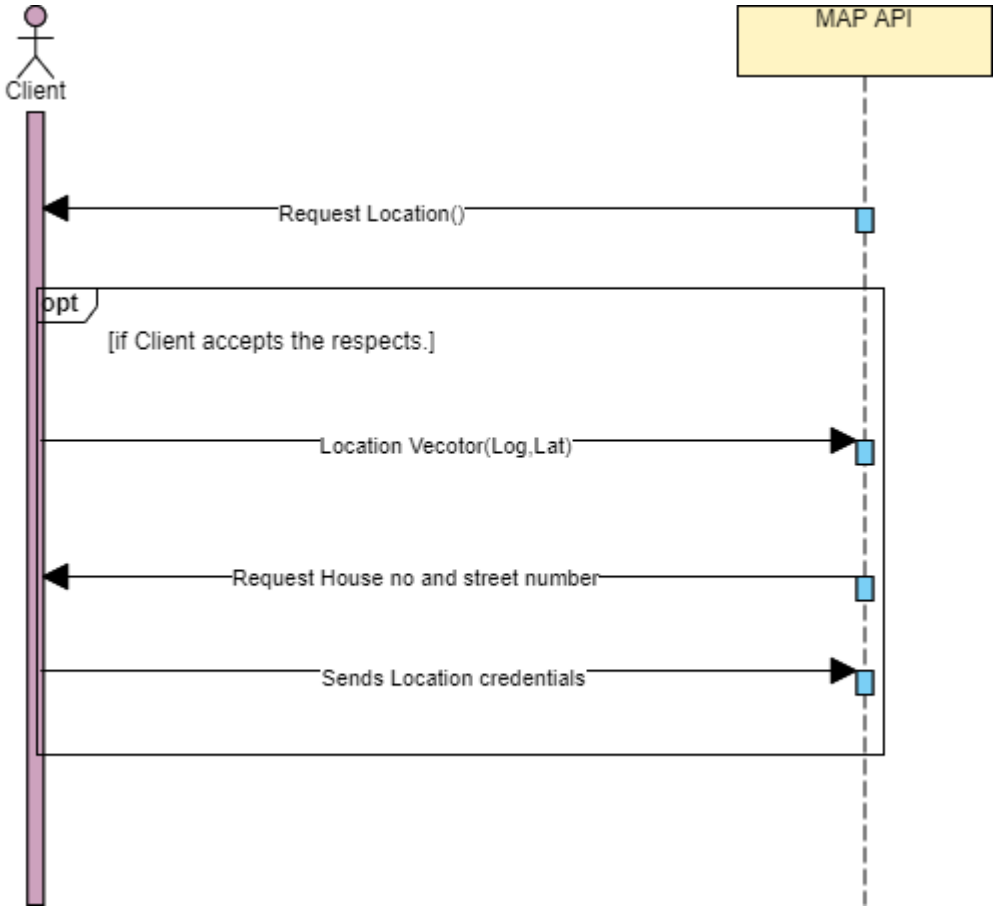
2.1 Product Functions

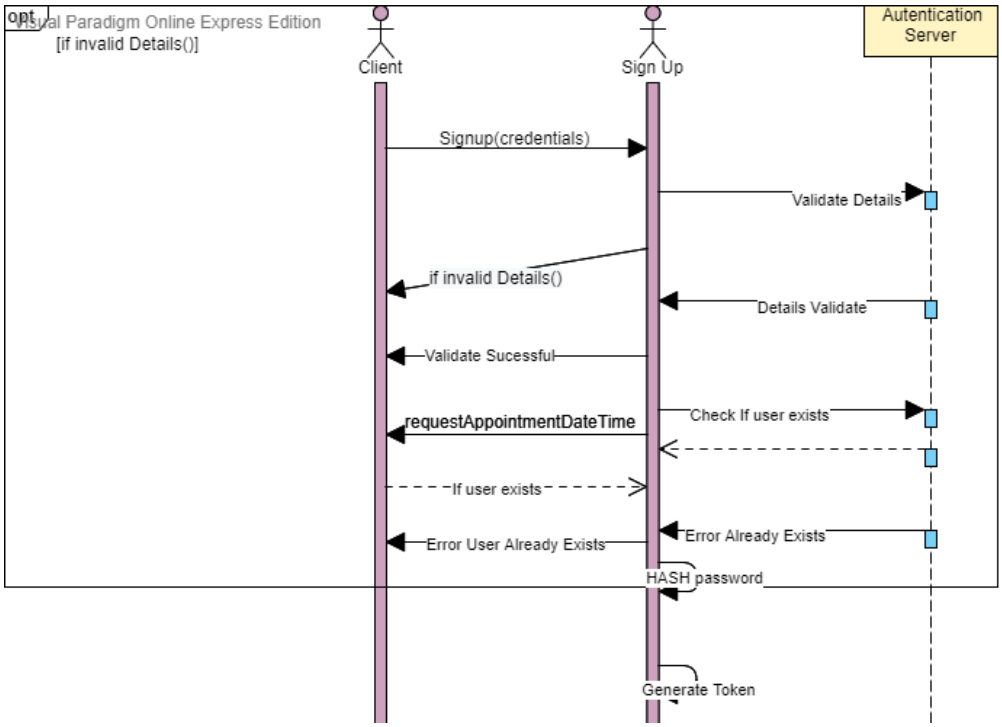
1. *We will start by making the front end of the map our source of inspiration for this*
2. *Peekaboo application and then we will design the functionalities of the app using node.js and react native for mobile application and for the database side we will use*
3. *Hadoop/MongoDB. We will starting creating the client side first and then work our way*
4. *to vendor and admin space using a phased approach in which the UI/UX will be tackled*
5. *first then the backhand using the above mentioned platforms and technologies and then*
6. *database connectivity management and then testing and evaluation phase will begin*
7. *Under proper supervision of our advisor. The software side will be mostly react and*
8. *node.js while using adobe XD to design the UI/UX which will also be used to produce*
9. *landing pages mockup and designs if necessary and also the use of Hadoop/MongoDB*
10. *For database interaction and connectivity. The use of flutter was considered and discussed*
11. *but due to there being less developmental support and incomplete documentation of the*
12. *Platform it was rejected. While on the hardware side our personal devices will be enough*
13. *to get the job done if in any scenario or emergency there is a need for university*
14. *Intervention we will request the relevant staff for the resources.*

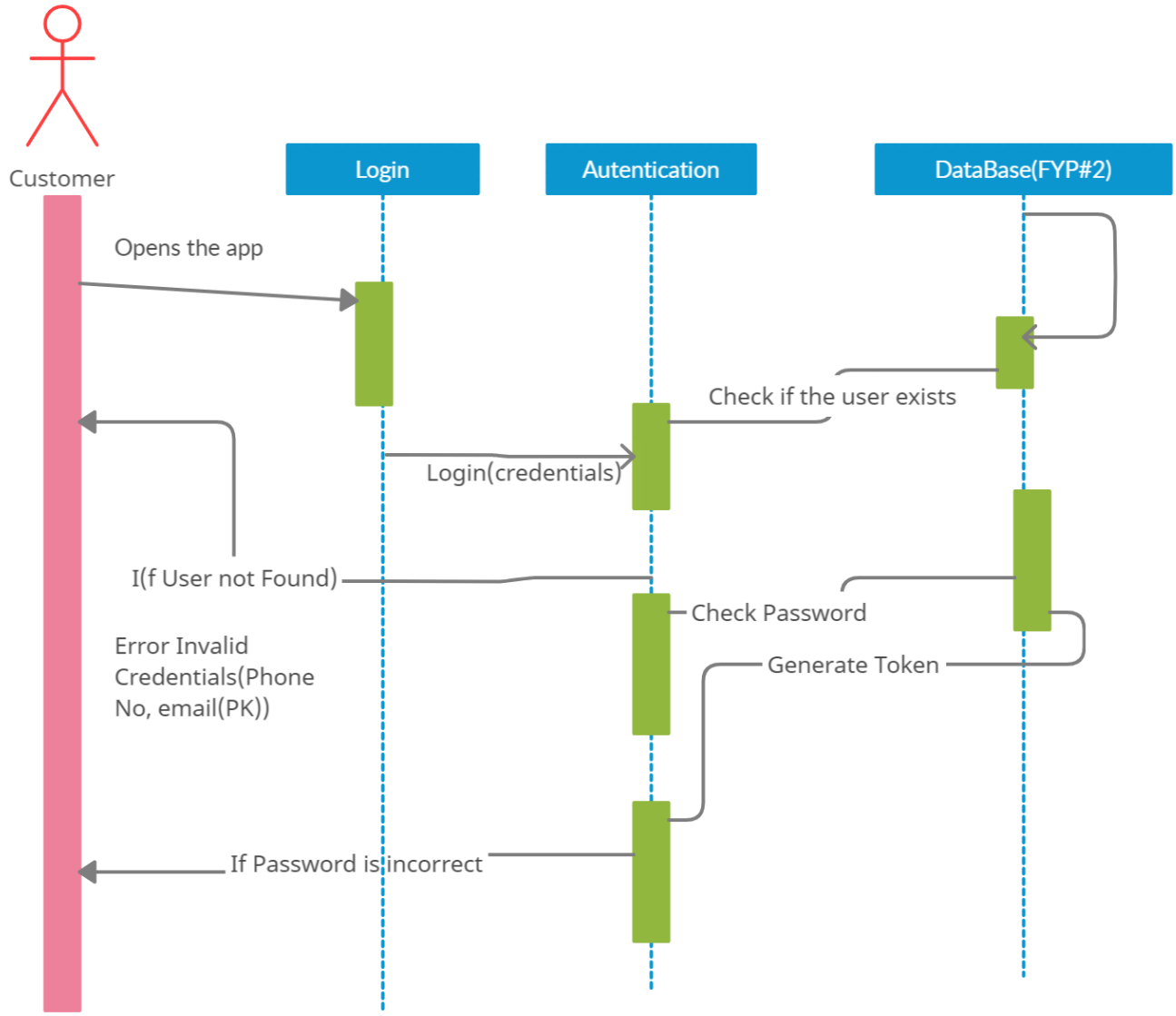
2.2 User Classes and Characteristics




Client
Home Page
Place order
Visual Paradigm Online Express Edition
Choose service
alt
[amount <= balance]
Choose category(clotjhes,bedsheet,undergarments)
if no service chosen()
Add quantity()
Update after selection
Update Quantity(category)
Ask for Date()
Visual Paradigm Online Express Edition


Client
MAP API
Request Location()
opt
[if Client accepts the respects.]
Location Vecotor(Log,Lat)
Request House no and street number
Sends Location credentials


opt
Visual Paradigm Online Express Edition
[if invalid Details()]
Client
Sign Up
Autentication Server
Signup(credentials)
Validate Details
if invalid Details()
Details Validate
Validate Sucessful
requestAppointmentDateTime
Check If user exists
If user exists
Error Already Exists
Error User Already Exists
HASH password
Generate Token



2.3 Operating Environment

Our developmental platform of choice as stated above is React Native mainly because of the platform portability and flexibility. React renders primitive type render to native platform UI. In React a single codebase can be shared across many platforms. With this we can maintain development on two platforms at the same time making our approach to development much more versatile. Our operating system of choice are Android and IOS. Both of these platform dominate the market at this moment in time making up 95% of the total mobile market. But with React Native we could easily port our code for anyone of these platform hence achieving one of most coveted feature in mobile development portability.

For creating the perfect UI/UX design we used React Native in tandem with its Material UI. Material UI provided us with much more designing options then the basic React Native libraries and API's. From a wider array of color, themes, buttons, task bars, layouts, action bars etc. Material UI opened many doors for us in the customization front of the application. We have also applied navigation API that are fundamental to navigation support for an application that uses map guided navigation at a higher scale.

2.4 Design and Implementation Constraints

Physical Constraints: As Laundry, Wala will be a user-centric app we have made many closure statements and pop-ups for the user to know that he is in control and what he can anticipate from the app. For example, we have used confirmation buttons in 4 to 5 locations that are used to deliver a pop up a modal message for conformation to continue to the next screen/ process, but there is no sound related notification being present might be let down form some user, as the practice has become obsolete to add sound pop-up notification in any commercial application of this excluding games.

Hardware Constraints: We have tested our app efficiency and running time on 8 different devices 2 of them belonging to the high-end spectrum, 4 of them being on the medium (budget) spectrum and 2 being on the low end one and thus far we have not encountered any malfunction or performance-related issues. But if a legacy device is used we might face some problems.

Business Logic Constraints: We have tried our best to build a business logic model that is functional around our application and our concept of **Micro Finance** and **Micro Services.** But as there are tax and budget constraints on a logic model in such an app which will be applicable in the market are not available here hence we have used a makeshift model:

Laundry Service Business Model

Factors	Business Model		
	On-Site	**In-Site**	**Marketplace or Aggregation**
Major Activities	• Pick up & delivering • Customer service • Own laundry washup	• Self pick up • Kiosks services • Customer service	• Local laundry washup • Pick up & delivery • Customer service
Workforce	Employees	Employees	Contractors
Infrastructure costs	Yes	Yes	No
Reviewing	Rating & Review	Rating & Review	Rating & Review
Payment	COD/online	Online	COD/online
Challenges	• Schedule • Client retention • Logistics • Delivering issues	• Misplacement of clothes • No logistics • Client retention • Schedule	• Schedule • Partner retention • Logistics • Client retention
Examples	• Wash club • Linux cleaners • Hamperville • Next cleaners		• Cleanly • Mulberrys • DRYV • Startup

Language Constraints:

As it has been stated above we have made Laundry Wala a bilingual oriented application. With the supported language being English and Urdu respectively but as our country is a multi-cultural society with many local languages that don't have mainstream exposure such as Punjabi, Sindhi, and Pashto, etc. We have made a special customer services portal option to deal with such requests.

Programming Language and framework Constraints:
As we have opted for a react-native framework for the development and construction of our application. Snubbing the use of flutter which in theory might be better than react native multiple platforms and operating system integration but due to the lack of documentation and feature support like maps, location pinging, multiple database connections etc. We had voted to use a more mature platform in terms of development and third party recognition and support, hence making our task to achieve multi-platform symmetry more difficult and challenging

2.5 User Documentation

COMPLETE USER MANAUAL:

1: We ask you to read the User Manual carefully before using our services. Following the directions in this manual will protect you from any misuse.
2: In a situation I which you are facing an uncertain situation you can quote any one of these calluses. The instructions should be followed carefully to avoid any unfortunate accidents.

User(s) means any individual or business entity/organization that legally operates in Pakistan or in other countries, uses and has the right to use the Services provided by Laundry Wala. The Services provided by Laundry Wala is a technology-based service which enables the picking up of clothes from households or offices, getting it processed in-house or through third parties, and delivering it back to the customer through the use of internet and / or mobile telecommunications devices. Our Services are available only to those individuals or companies who can form legally binding contracts under the applicable law. Therefore, user(s) must not be a minor as per Pakistan Law; i. e. user(s) must be at least 18 years of age to be eligible to use our Services. Laundry Wala advises its users that while accessing the application, they must follow/abide by the related laws. Laundry Wala is not responsible for the possible consequences caused by your behavior during use of application. Laundry Wala may, in its sole discretion, refuse the service to anyone at any time. If you want more in depth looking and information regarding our services you can contact us at: ***laundrywala@gmail.com*** *. In case of an emergency or any uncertain event you can contact us at* ***customercarelw@gmail.com***

Most content and some of the features on the application are made available to visitors free of charge. However, LaundryWala reserves the right to terminate access to certain areas or features of the application at any time for any reason, with or without notice. LaundryWala also reserves the universal right to deny access to particular users to any/all of its Services without any prior notice/explanation in order to protect the interests of LaundryWala and/or other visitors to the application. LaundryWala reserves the right to limit, deny or create different access to the application and its features with respect to different user(s), or to change any of the features or introduce new features without prior notice.

2.6 Assumptions and Dependencies:

This application is designed with certain assumptions in mind which are follows:

- *The people that are using our application is over 18 years and have ID card issued form the Pakistani government under proper supervision.*
- *The customer has read and agreed to the terms and services we have mentioned in the user manual.*
- *LaundryWala reserves the right to limit, deny or create different access to the application and its*

features with respect to different user(s), or to change any of the features or introduce new features without prior notice

- *Our Services are available only to those individuals or companies who can form legally binding contracts under the applicable law.*
- *Laundry Wala may, in its sole discretion, refuse the service to anyone at any time.*
- *LaundryWala reserves the right to terminate access to certain areas or features of the application at any time for any reason, with or without notice.*
- *LaundryWala also reserves the universal right to deny access to particular users to any/all of its Services without any prior notice/explanation in order to protect the interests of LaundryWala and/or other visitors to the application.*

3. External Interface Requirements

3.1 User Interfaces

In order to provide the best user experience, the interface or the UX will be designed, taking into consideration:

- Better user experience
- Ability to modify order with ease
- Ability to use map and navigation with ease
- Simple and effective tile based UI home panel.
- Minimalist design
- Order management panel that provides the user complete transparency to see the whole process.
- Professor Ben Shneiderman “Eight Golden Rules of interface Design” are used here

3.2 7 +-2 RULE:

This is considered one of the most scared HCI rules of designing a UI/UX. It dictates that should not be no more than 5 to 9 items that a user need to store in their short memory. Cognitive psychology demands that this rule be enacted in all user interfaces to maximize their productivity. And we have followed suit and not used more than 9 attention grapping items, categories and menus at a single page.

3.3 Constant Closure:

Our app provide constant closure at every process indicating to the user what he has accomplished or what he is about to partake keeping the user aware of their actions and their implications.

3.4 Easy Reversal Of Actions

Our app has easy option to navigate back and forth between its interfaces making reversal of action quite easy for the user. If the user wants change its mind at the last second before placing an order he will not be inconvenienced for it.

3.5 Locus Of Control

Our app has always keeps the user at the driving seat and provide a sense of complete control. We have Design the system to make users the initiators of actions rather than the responders.

3.5 Hardware Interfaces

As it has been stated above Laundry Wala is designed to be application that is tailor made for mobile devices and has been given the flexibility to adjust itself to other hardware of the same type. Our application has been tested on many different mobile devices with different specification to give us a better idea of how the hardware interface will will support the software one. As in the case of each and every mobile application the hardware interface will be responsible for providing a computing platform for the program. And will be the instigator for all the essential process of the application.

3.6 Software Interfaces

App for Client:

There will be an android app for the client which will include all the features such as the ability to place an order, write a description about the clothes (number, type) the facility of a tracking map, package selection (Urgent, Normal) and payment method or challan generator. The login in page will have three options which range from Ironing, washing, dry-clean but there will be the options of packages Basic, Standard, Premium. To start the entire process first we need the client to fill out the general info required which includes name, ID (auto generated), email Id and then for conformation we will use the OTP (One Time Password) method. After the login page the client will need to enter its location, then they can proceed to the main-page where they have all the options to cart or add more services or clothes. Cart page will include the invoice of the order the total service which is subjected to the individual rates of the dry cleaners, tax and the amount that the transport service will charge depending on the distance and other factors if applicable after conforming client will be directed towards the payment options page which will include options like paying from a debit card, cash on delivery and other services like jazz cash, easy paisa, etc. The client will have access to a timeline page that will include his order history, ratings and order status. Order status will have the total duration of the order, time remaining, and a progress bar that notify the client the progression of their order

App for Vendor:

For the vendor side, we have to decide after the login in/sign up page in which the vendor will provide the information that is required. After the vendor has filled the fields and press confirm a request will generated to us which will include which will state that the inspection team will arrive at your establishment ASAP to carry out an evaluation process after that the approval request will take two working days to be processed. After getting the approval the vendor will proceed to the login page which will direct them to the main page through which they will have access to order status, accepted order, rating (given by the client) , 3rd party transportation interaction and the ability to contact the admin..

Admin Portal:

The admin panel which will contain a home page. Which will include the fields completed orders, recent orders (7 days or more), revenue generated and in progress orders? The admin panel will have an order detail page which will include two fields' clients' id and vendor id. After they

provide the necessary id it will displace the appropriate details of the client and vendor.

Bike Rider App (NEW):

We decided to provide our rider with a separate app with same design and functionality principals as bykea's partner app. It will include fields such as current pickup, order history, location etc. This app will work as a separate independent platform for our rider to interacted, keep track and manage the pickups/ deliveries and the client, hence providing our rider with the tools to work independently and at their own pace and provide them with a efficient way to keep track of their own task(pickup, delivery) status.

3.7 Communications Interfaces

As we are aiming for a fully functional application we also need a fully functional client/customer handling platform. As we know that each and every micro service oriented application needs a platform through which the client can contact the service providers we have used two emails for this purpose **laundrywala@gmail.com** (For all business related matters and official platform of communication for any new vendor that might be interested to join) and **customercarelw@gmail.com** (for all customer related queries and FAQ's).

Protocols HTTP and HTTPS will both be used here. We also have been working on a marketing communication interface in our application. It will be space In which a vendor can directly leave us a message or suggestion for us to read/ consider. Similarly there will also be a communication interface present in the bike rider application so the rider can contact the administration, client or the vendor whenever he needs hence building a strong communication channel for the rider to coordinate pickup and delivery time with the client and vendor respectively. We also have provided a feedback channel/ option in the customer application which will provide the customer a direct line of communication with service providers and riders. For the administration it can be a review, request or a complaint panel and for the rider it can be used to provide direction and specific pickup instructions.

4. System Features

4.1 Using the map to mark or ping location (for delivery or pickup)

4.1.1 Description and Priority

This feature can be considered one of the most essential feature in terms of user convenience. The user will have the ability to permanently mark his or her location for pickup or delivery hence making the arduous process of guiding the rider every time significantly easier. This feature has become the norm in many of the transport service provider apps but it not present in most of the third party service provider's application that we are competing with.

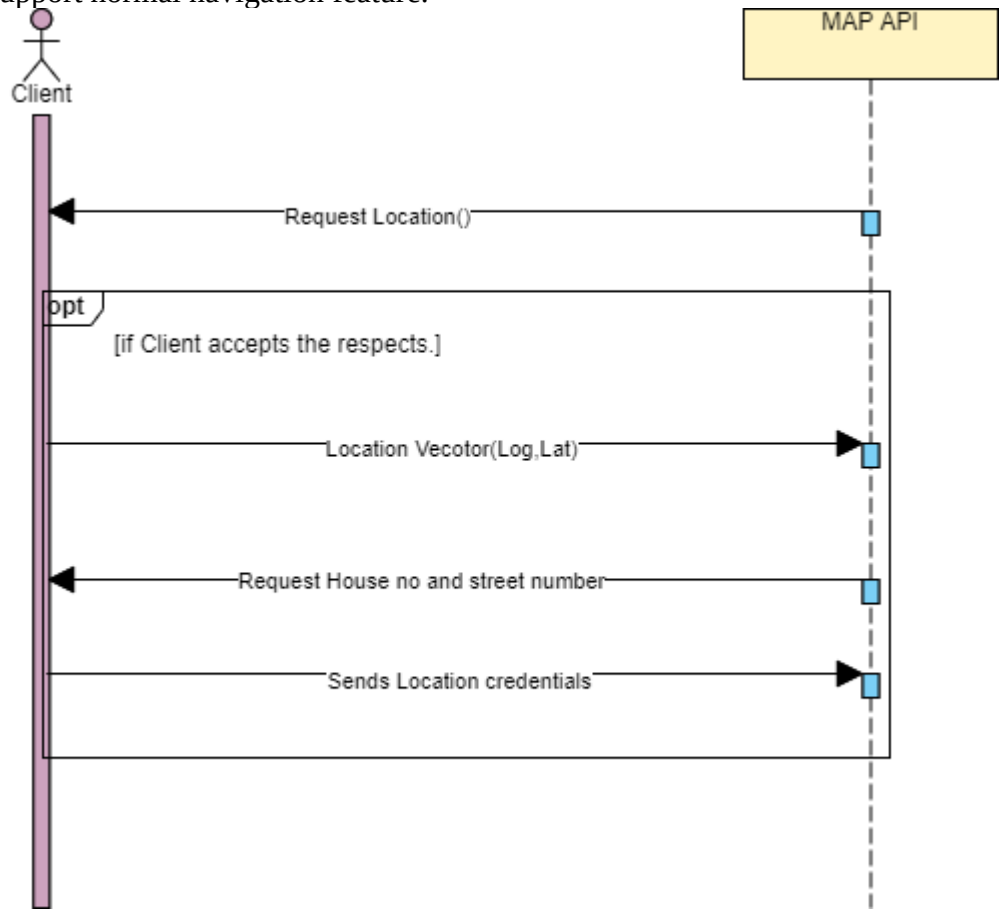
4.1.2 Stimulus/Response Sequences

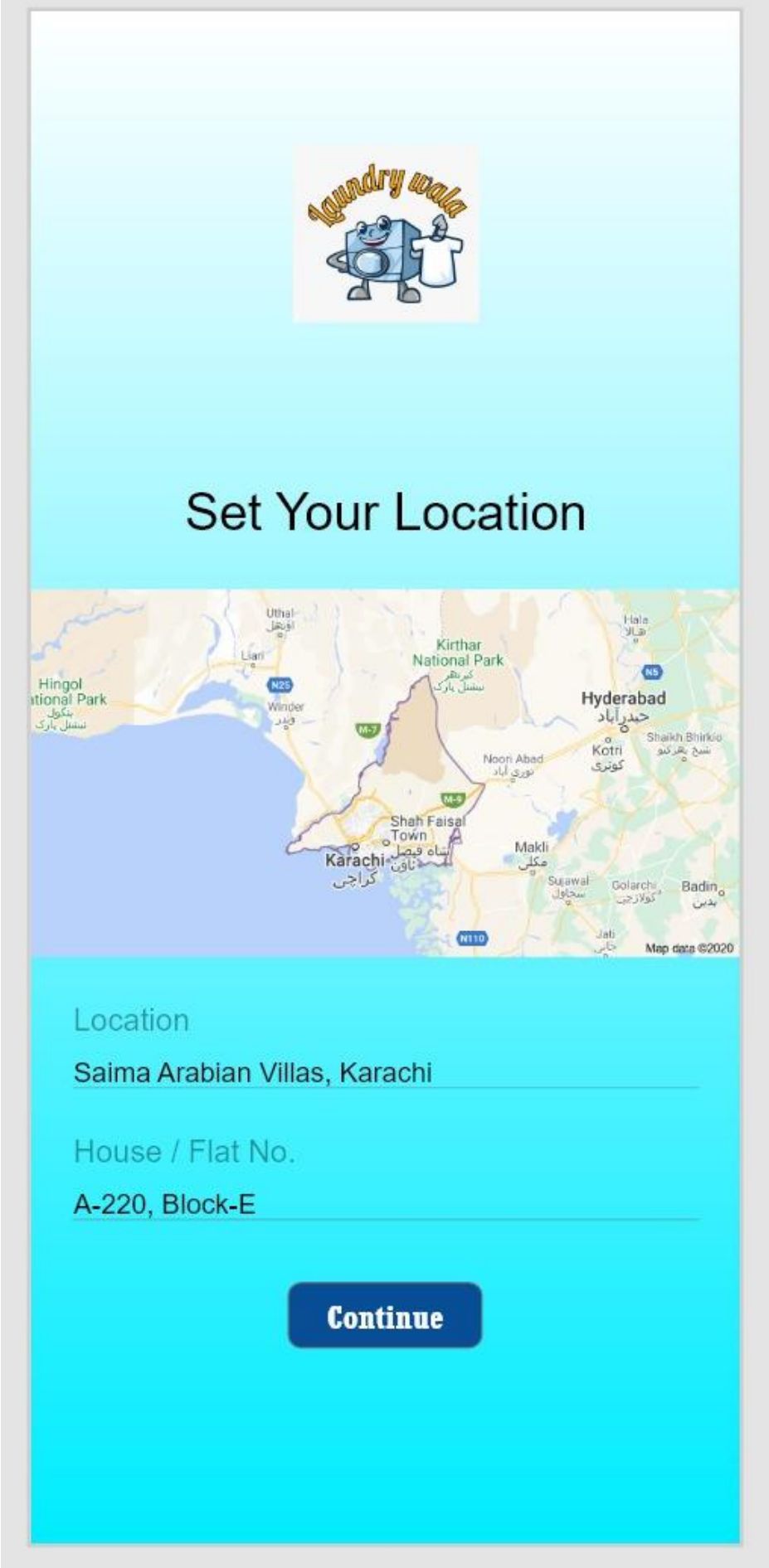
The application will be prompt the user to pick a location for pickup hence in response user will choose the location on the map and then after receiving the input the user can proceed further. After the order is completed the system will again prompt the user to again choose the delivery location. After the delivery is done it will let the user save the delivery location with its personalized identification or name like work, home etc.

4.1.3 Functional Requirements

For this feature to work as intended the user must have a device with location detection capabilities using GPS or other means, device that don't possess such feature will not be applicable. Devices must have at least android version 4 because the navigation services of device older than that cannot be catered to as the support has been terminated by the Android platform for version older than 4.

REQ-1: The device in question must have hardware capable of performing simple navigation related task.
REQ-2: The device in question mustn't have an obsolete version of OS that doesn't support normal navigation feature.




Laundry wala
Set Your Location
Kirthar National Park
Hyderabad
Karachi
Shah Faisal Town
Makli
Noori Abad
Kotri
Badin
Map data ©2020
Location
Saima Arabian Villas, Karachi
House / Flat No.
A-220, Block-E
Continue

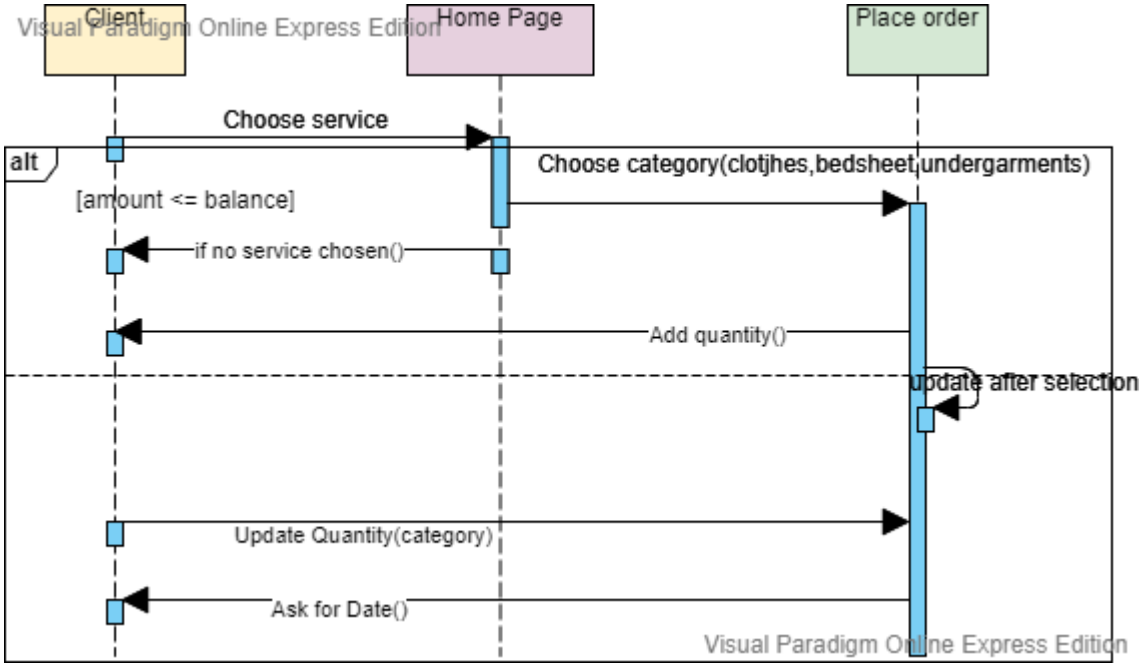
4.2 Transparent Order Management System:

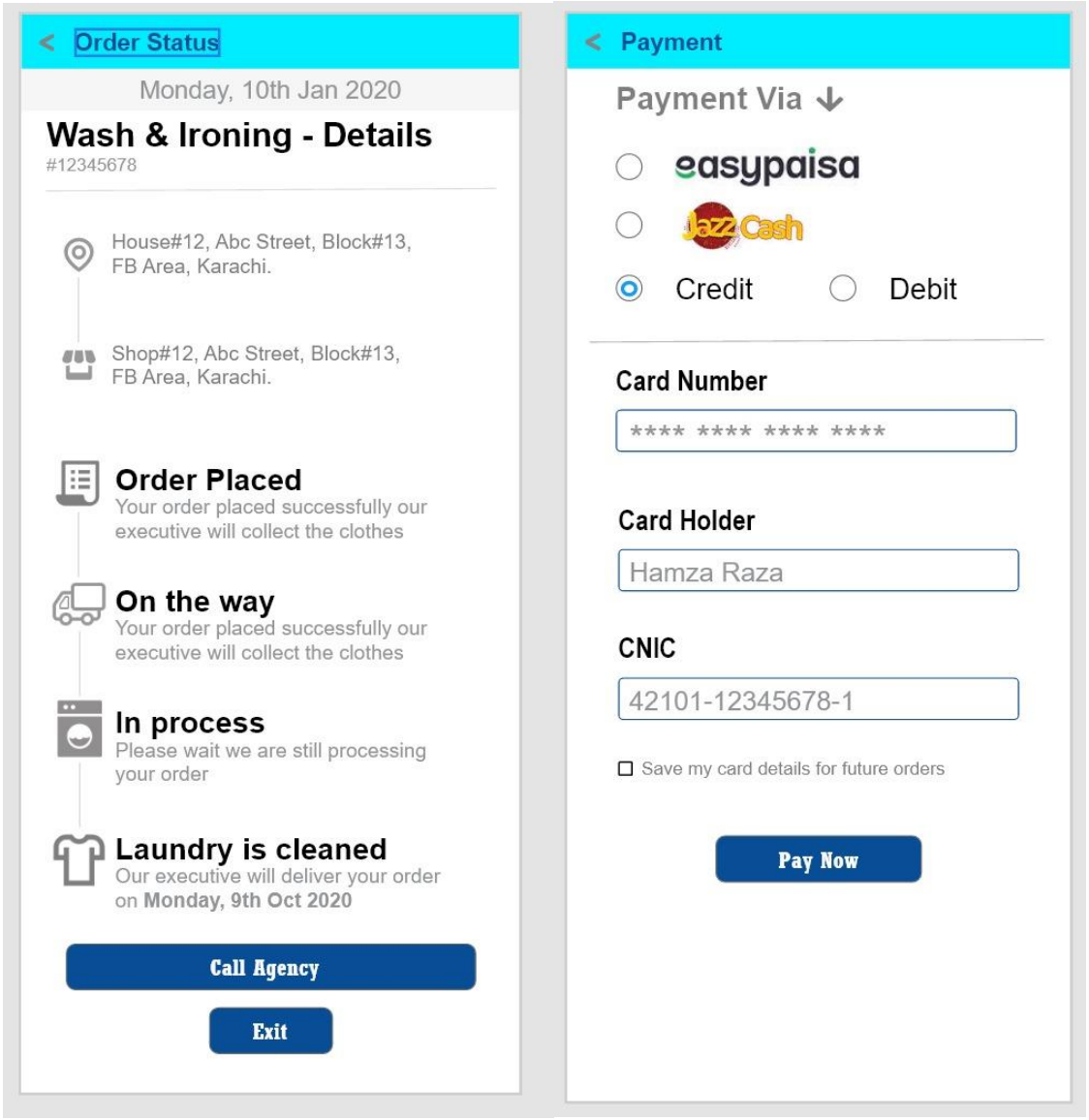
4.2.1 Description and Priority

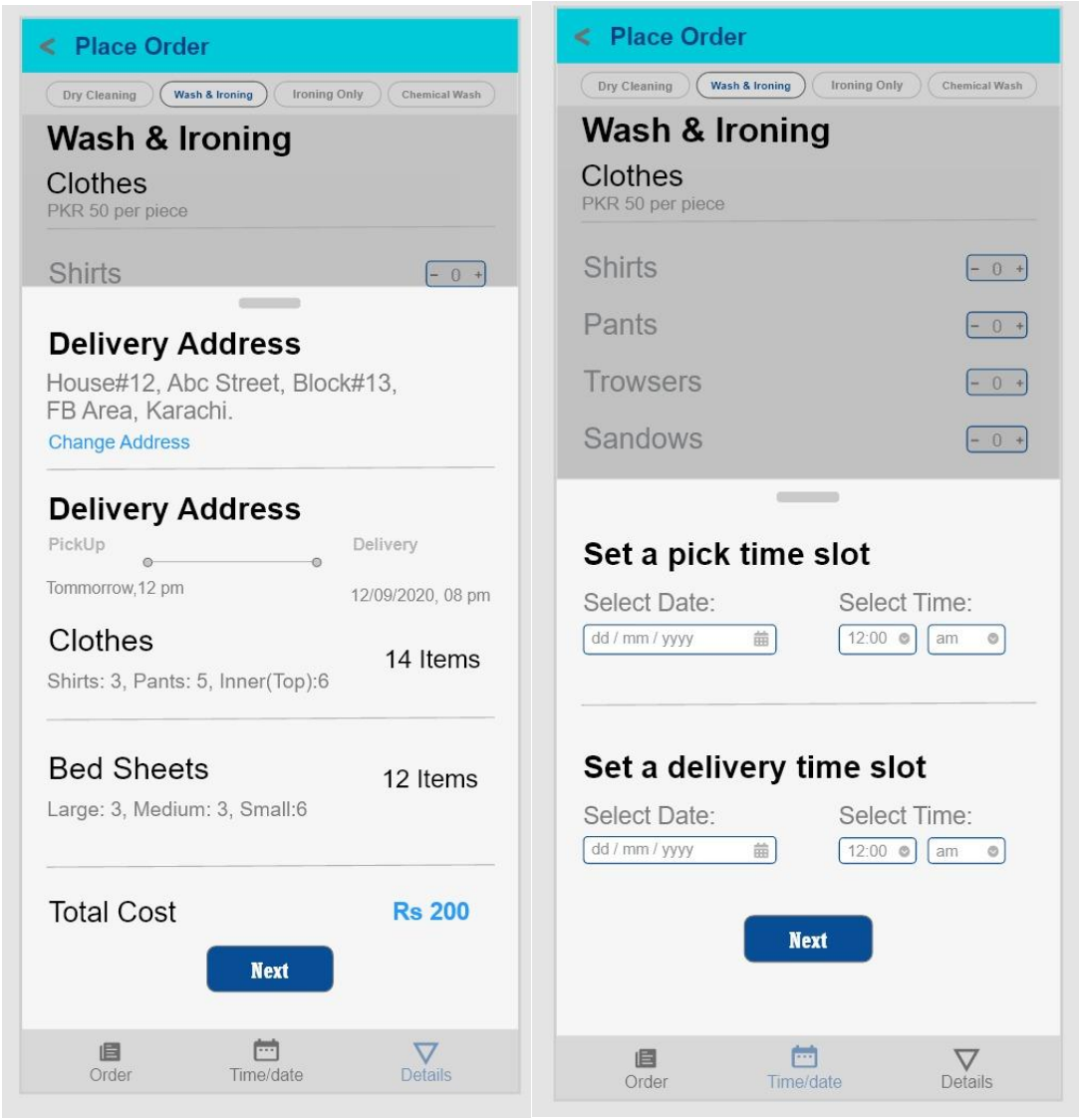
This feature is one of the most discussed features in this project as it coincides with the business philosophy we have set for our application as a product. In the order management panel the user will be able to see the fixed prices of all the products in real time and their total costs at the bottom with all the subjected service price added in it, hence making an order management system that is completely transparent in its approach opposite to many other service provider on the market that don't show service add on and Taxes at the order management screen.

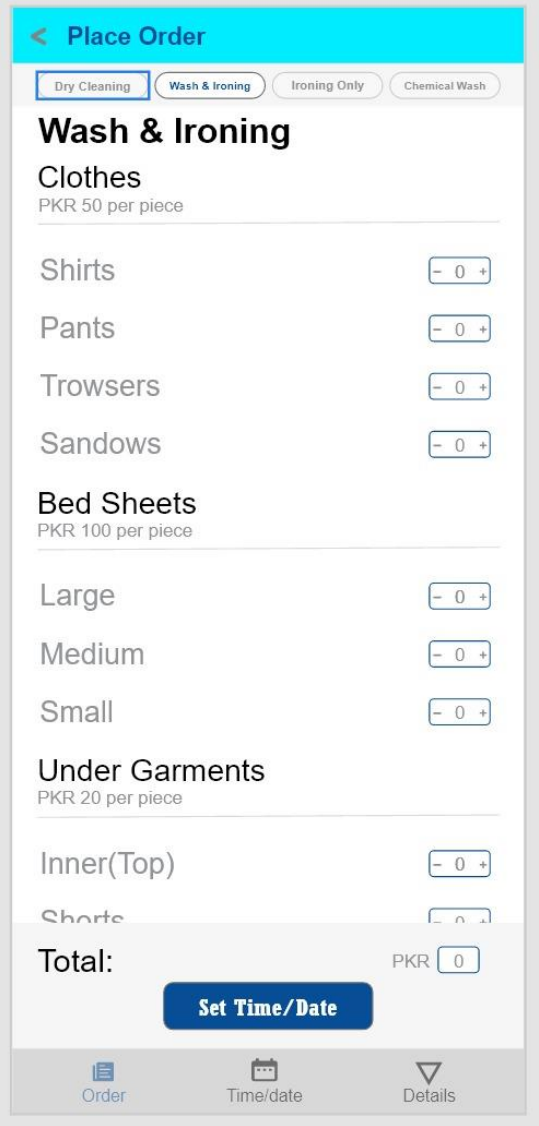
Stimulus/Response Sequences

The application will be prompt the user to pick a service ranging from washing, dry cleaning, ironing etc. And prompting the user to add which sub categories their items belong to like shirts, dresses, and bed sheets etc. After the user selects and adds the item the system keep live track of all the cost associated with the user choice including all add on and tax.




Order Status
Monday, 10th Jan 2020
Wash & Ironing - Details
#12345678
House#12, Abc Street, Block#13, FB Area, Karachi.
Shop#12, Abc Street, Block#13, FB Area, Karachi.
Order Placed
Your order placed successfully our executive will collect the clothes
On the way
Your order placed successfully our executive will collect the clothes
In process
Please wait we are still processing your order
Laundry is cleaned
Our executive will deliver your order on Monday, 9th Oct 2020
Call Agency
Exit
Payment
Payment Via
easypaisa
JazzCash
Credit
Debit
Card Number
**** **** **** ****
Card Holder
Hamza Raza
CNIC
42101-12345678-1
Save my card details for future orders
Pay Now


Place Order
Dry Cleaning
Wash & Ironing
Ironing Only
Chemical Wash
Wash & Ironing
Clothes
PKR 50 per piece
Shirts
0
Delivery Address
House#12, Abc Street, Block#13,
FB Area, Karachi.
Change Address
Delivery Address
PickUp
Delivery
Tommorrow,12 pm
12/09/2020, 08 pm
Clothes
14 Items
Shirts: 3, Pants: 5, Inner(Top):6
Bed Sheets
12 Items
Large: 3, Medium: 3, Small:6
Total Cost
Rs 200
Next
Order
Time/date
Details
Place Order
Dry Cleaning
Wash & Ironing
Ironing Only
Chemical Wash
Wash & Ironing
Clothes
PKR 50 per piece
Shirts
Pants
Trowsers
Sandows
Set a pick time slot
Select Date:
Select Time:
dd / mm / yyyy
12:00
am
Set a delivery time slot
Select Date:
Select Time:
dd / mm / yyyy
12:00
am
Next
Order
Time/date
Details



4.3 Separate Vendor Platform:

4.3.1 Description and Priority

Providing the vendor an independent platform was always one of our top priorities. In which the vendor can review its status and order status simultaneously. Providing the vendor with the ability to monitor and track their and the order progress. This feature includes the fields like order status, order completed etc.

4.3.2 Stimulus/Response Sequences

The application will provide the vendor with updated status of the order in progress hence giving the vendor to start necessary preparation and if necessary intervene. It also provide the vendor with its completed statistics help keeping the vendor track.

4.3.3 Functional Requirements

For this feature to work as intended the vendor must have a device with capabilities of installing and running the application. The vendor must possess that is mainstream enough to be support by the android platform.

REQ-1: The vendor in question must have hardware capable of running the designated vendor application.

REQ-2: For the application to run as intended the vendor must possess a device that is mainstream enough to be support by our platforms.

4.4 Separate Rider Platform:

4.4.1 Description and Priority

Providing the rider an independent platform was always one of our top priorities. In which the vendor can review its status and order status simultaneously. Providing the rider with the ability to monitor and track their and the order progress. This feature includes the fields like order status, order completed etc.

4.4.2 Stimulus/Response Sequences

The application will provide the rider with updated status of the order in progress hence giving the vendor to start necessary preparation and if necessary intervene. It also provide the vendor with its completed statistics help keeping the rider track of his progress.

4.4.3 Functional Requirements

For this feature to work as intended the rider must have a device with capabilities of installing and running the application. The rider must possess that is mainstream enough to be support by the android platform.

REQ-1: The rider in question must have hardware capable of running the designated rider application.
REQ-2: For the application to run as intended the rider must possess a device that is mainstream enough to be support by our platforms.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

For the application to run as intended and as smoothly as possible there are certain requirements That need to be met

1: User needs to have a device that possess sufficient hardware to run the application.
2: User needs to have the sufficient space which is (30MB) for the application to store itself properly.
3: User needs to have a device which supports android OS.
4: User needs to grant permission to the application for access its location and navigation capabilities.
5: User needs to have a device with at least android version 4.0 for the application to run at an optimal level.
6: User needs to have GPS and navigation capabilities for the map to work properly.
7: For the vendor to be able to use the companion vendor app the device need to have sufficient hardware and all of the above mentioned point are also applicable.
8: For the rider to use then transporter companion properly it also must fulfill the above requirements.

5.2 Safety Requirements:

Our complete user safety manual:

User(s) means any individual or business entity/organization that legally operates in Pakistan or in other countries, uses and has the right to use the Services provided by Laundry Wala. The Services provided by Laundry Wala is a technology-based service which enables the picking up of clothes from households or offices, getting it processed in-house or through third parties, and delivering it back to the customer through the use of internet and / or mobile telecommunications devices. Our Services are available only to those individuals or companies who can form legally binding contracts under the applicable law. All of the data personal data the will be used by our designated application will be under safety regulation of the Pakistan government under **Section 8(1) of the Bill states that the Authority shall prescribe standards to protect personal data from any loss, misuse, modification, unauthorized or accidental access or disclosure, alteration, or destruction. ... To the measures taken for ensuring the secure transfer of the personal data**. Therefore, user(s) must not be a minor as per Pakistan Law; i. e. user(s) must be at least 18 years of age to be eligible to use our Services. Laundry Wala advises its users that while accessing the application, they must follow/abide by the related laws. Laundry Wala is not responsible for the possible consequences caused by your behavior during use of website. Laundry Wala may, in its sole discretion, refuse the service to anyone at any time. If you want more in depth looking and information regarding our services you can contact us at: **laundrywala@gmail.com**

. *In case of an emergency or any uncertain event you can contact us at* ***customercarelw@gmail.com***

5.3 Security Requirements:

Our Security clauses in the User Manual
Most content and some of the features on the application are made available to visitors free of charge. However, LaundryWala reserves the right to terminate access to certain areas or features of the website at any time for any reason, with or without notice. LaundryWala also reserves the universal right to deny access to particular users to any/all of its Services without any prior notice/explanation in order to protect the interests of LaundryWala and/or other visitors to the website. LaundryWala reserves the right to limit, deny or create different access to the application and its features with respect to different user(s), or to change any of the features or introduce new features without prior notice.

5.4 Software Quality Attributes

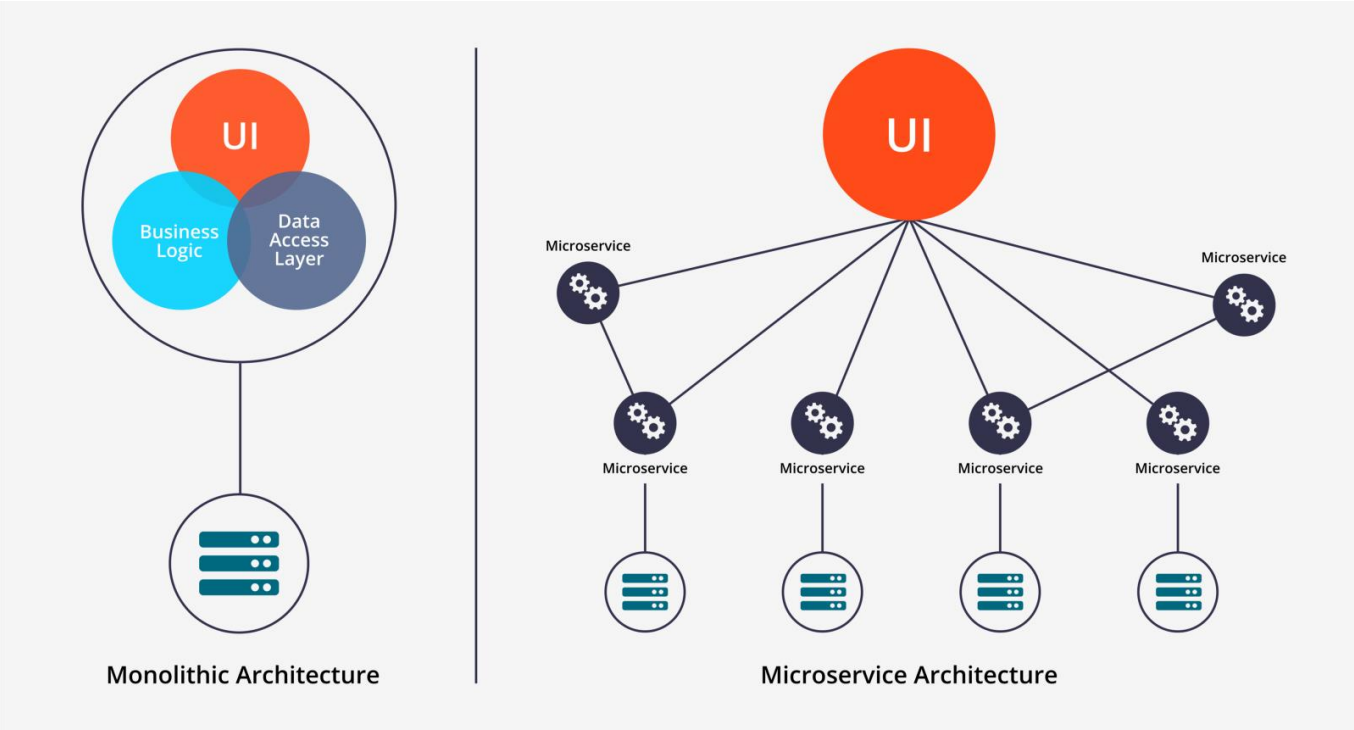
- To make the application more appealing and to make the application more engaging for the user we have used material UI so can have a access to more of the UI/UX oriented facilities of the mentioned API. It also provide the ability to adapt the UI for theme oriented platforms.
- As mentioned above we have implemented a system an easy to use and transparent order management system that allows the user to easily manage and monitor their orders. Hence drastically improving the UI compared to more traditional interfaces.
- Ability to use map and navigation with ease and pinging the current location is one of the most important feature of our application and it drastically improves usability.
- Simple and effective tile based UI home panel that can be reused in our rider application hence also achieving resource reusability.
- Minimalist design of the application provide it with a necessary robustness that is required form a commercial application.
- The ability to pay by using third party services like jazz cash and easy paisa eliminates the need for using a third party payment services.
- Using react native as a developmental platform we have also achieved portability as the react native platform support many different operating systems.

5.5 Business Rules

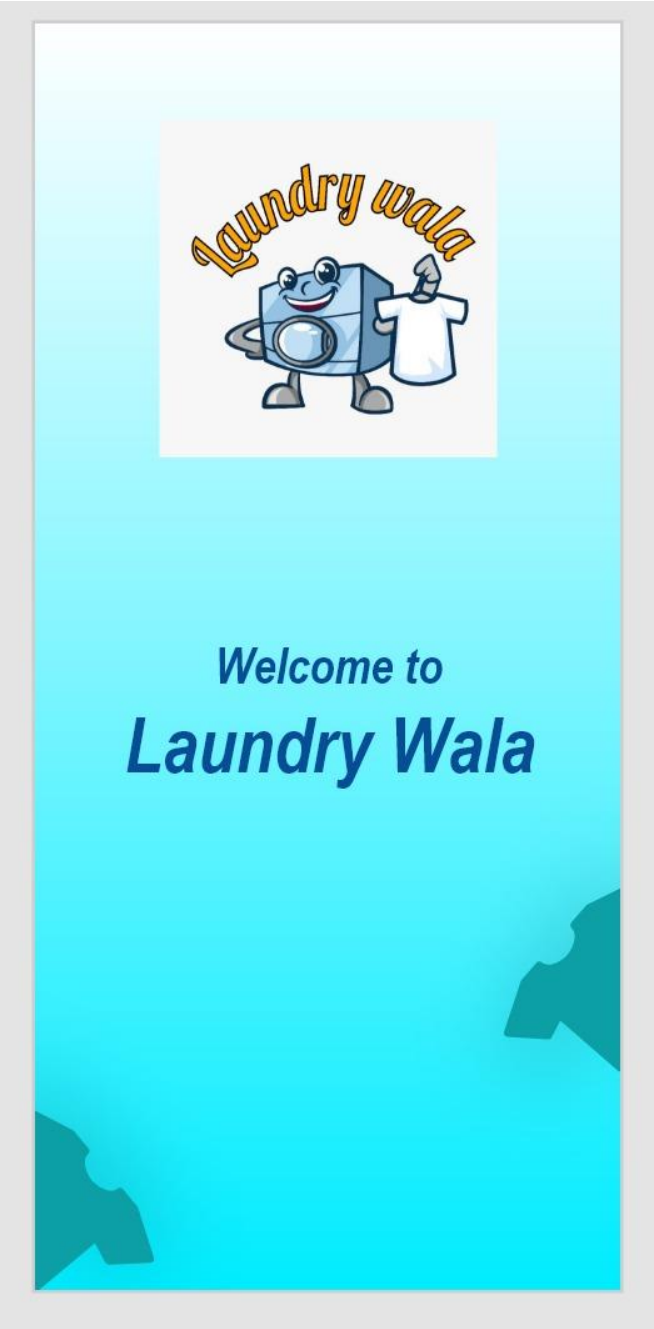
We have opted to use micro service architecture as it was the best model for our application as a business that generates revenue and needs to be maintained and monitored.7

- *In micro services each module acts as a separate entity that can be maintained and used on its own. Our customer application is completely separate from our vendor and rider/ transported application so if wanted to make any changes to any one of these modules we could without any problem hence making the application highly maintainable and testable.*
- *In micro services model all the aspects of the application aren't glued together being loosely coupled.*
- *As we have divided the business model in to three modules customer, vendor and rider/transport we now have the ability and control to deploy them independently.*

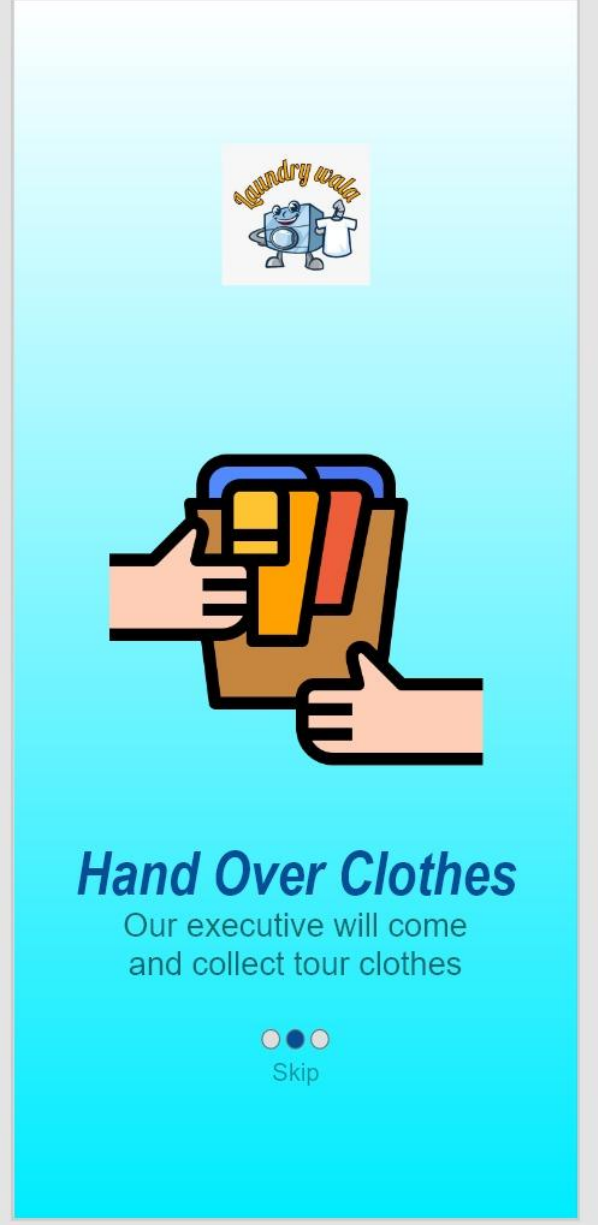
- *In micro services all of the operation and business goals are centered on the functional capabilities of the system. Which will be perfect for us as we have an application that is a third party provider of the designated services and are in close contact with both the vendor and transported.*
- *Principal of micro services is one that is centered on small teams which are flexible but have less depth than a typical corporate team. This will suit us perfectly as we are indeed a small team at moment.*

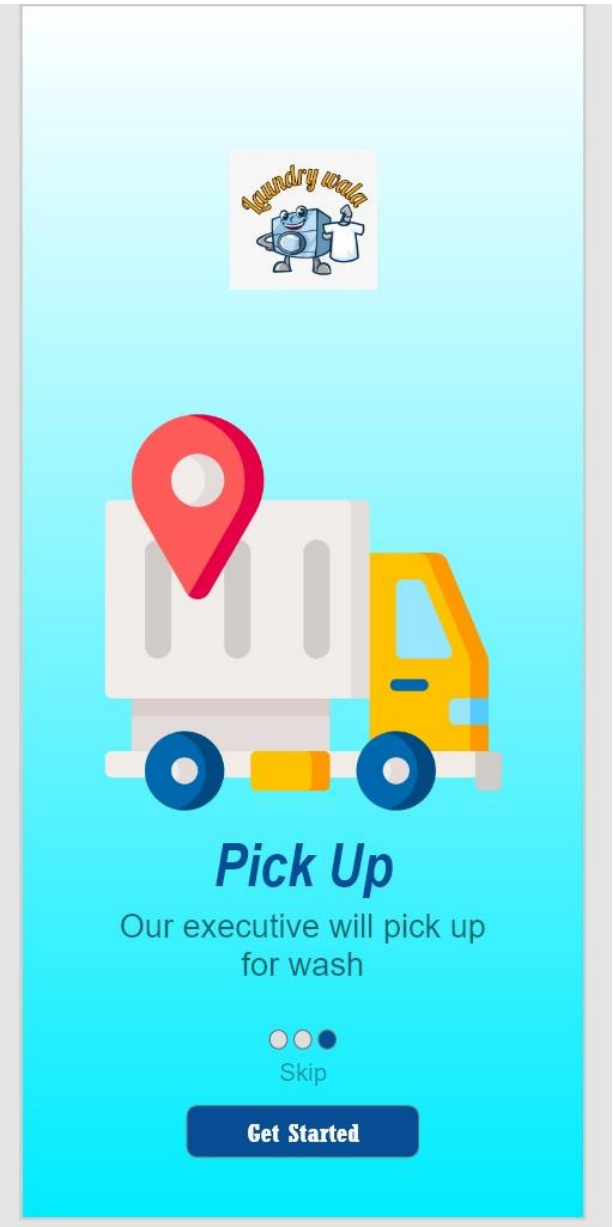


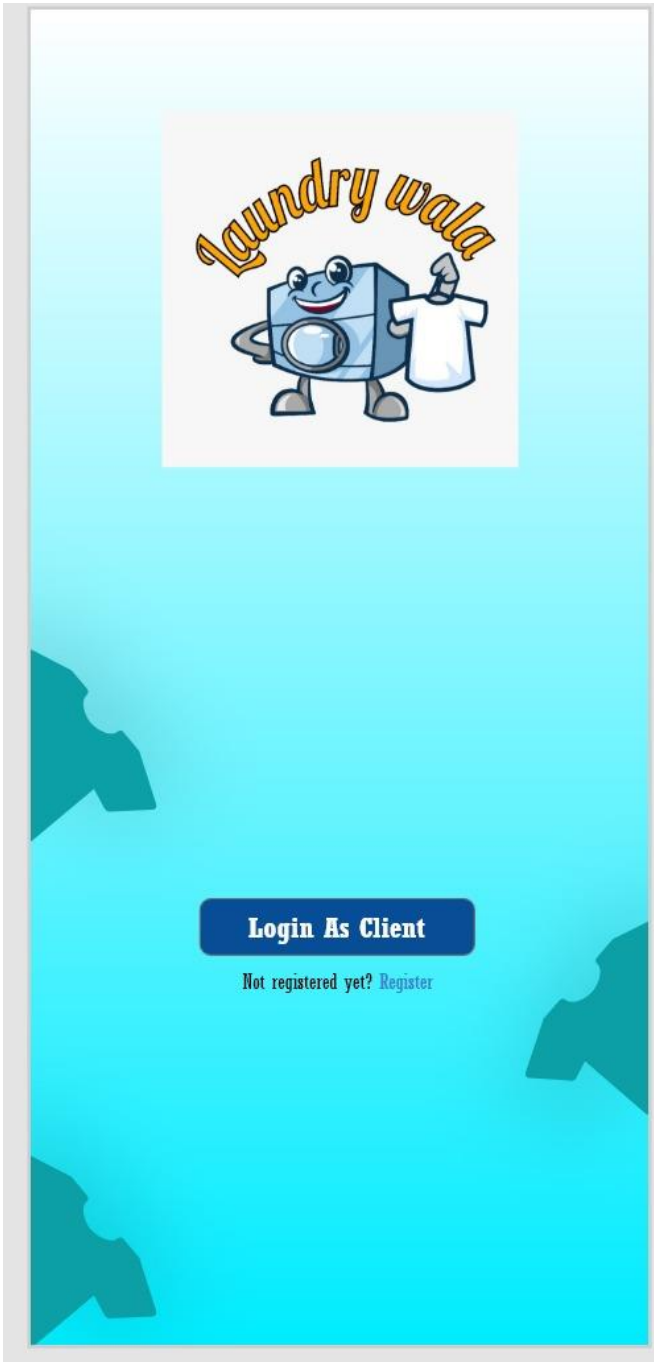
1. Other Requirements Complete UI for the application:

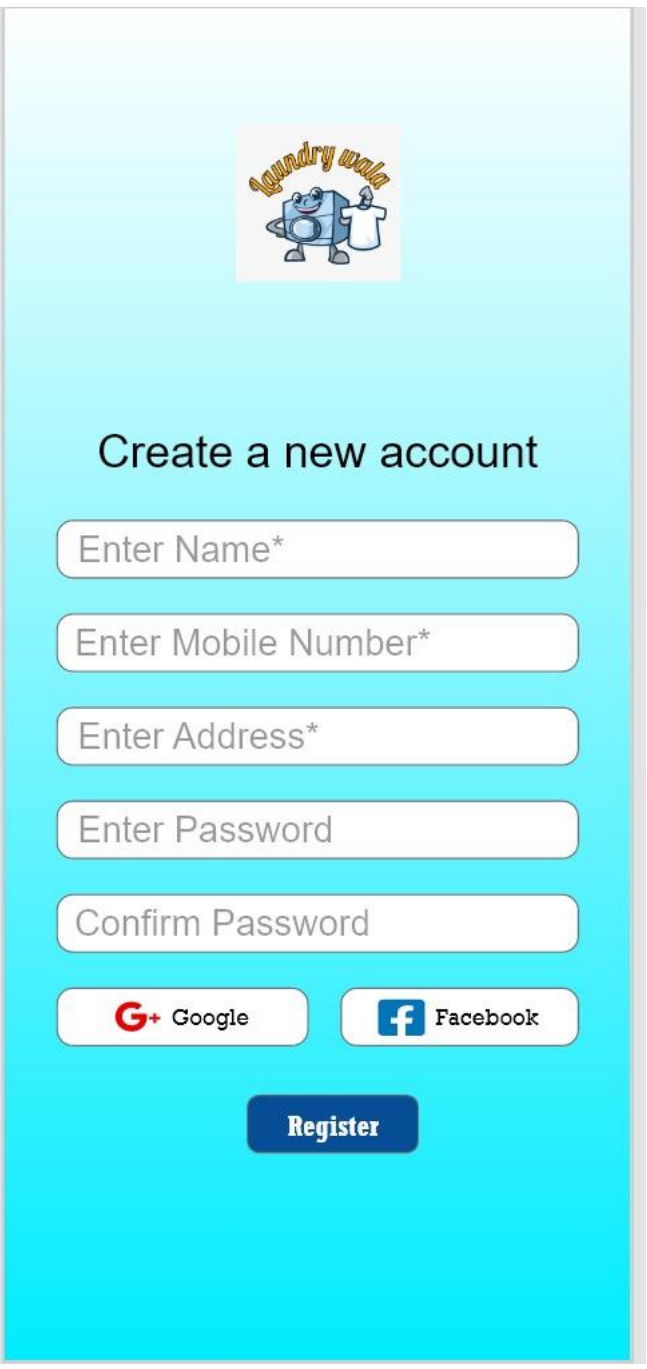

Laundry wala
Welcome to
Laundry Wala

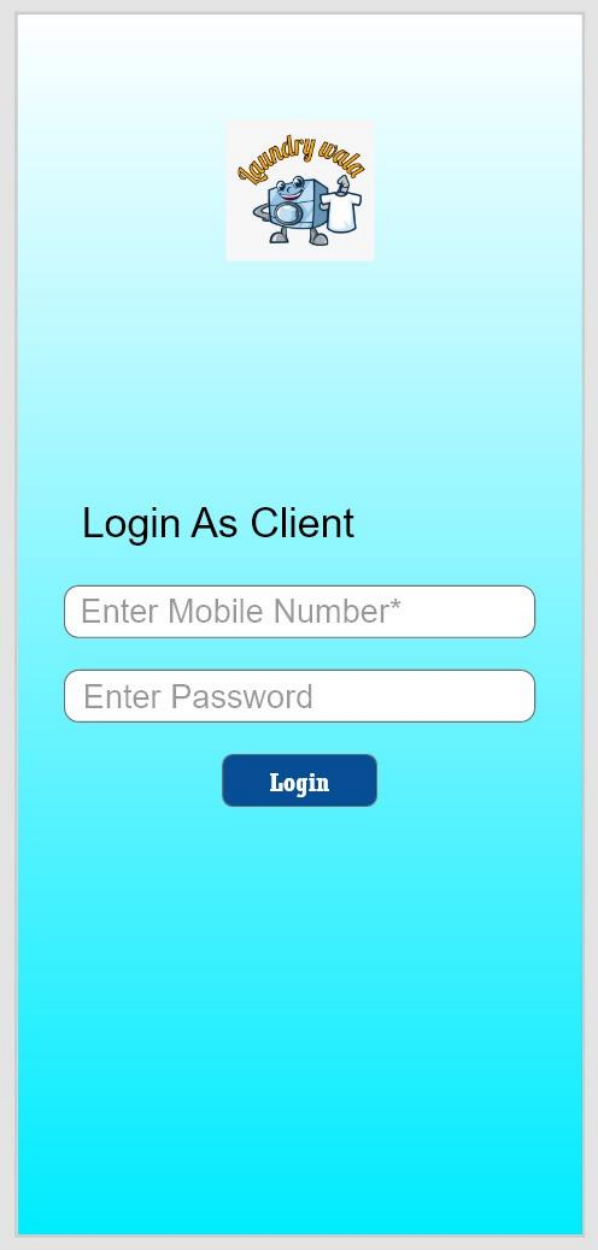

Laundry wala
Create Your Order
Set up delivery date to pick up
Skip

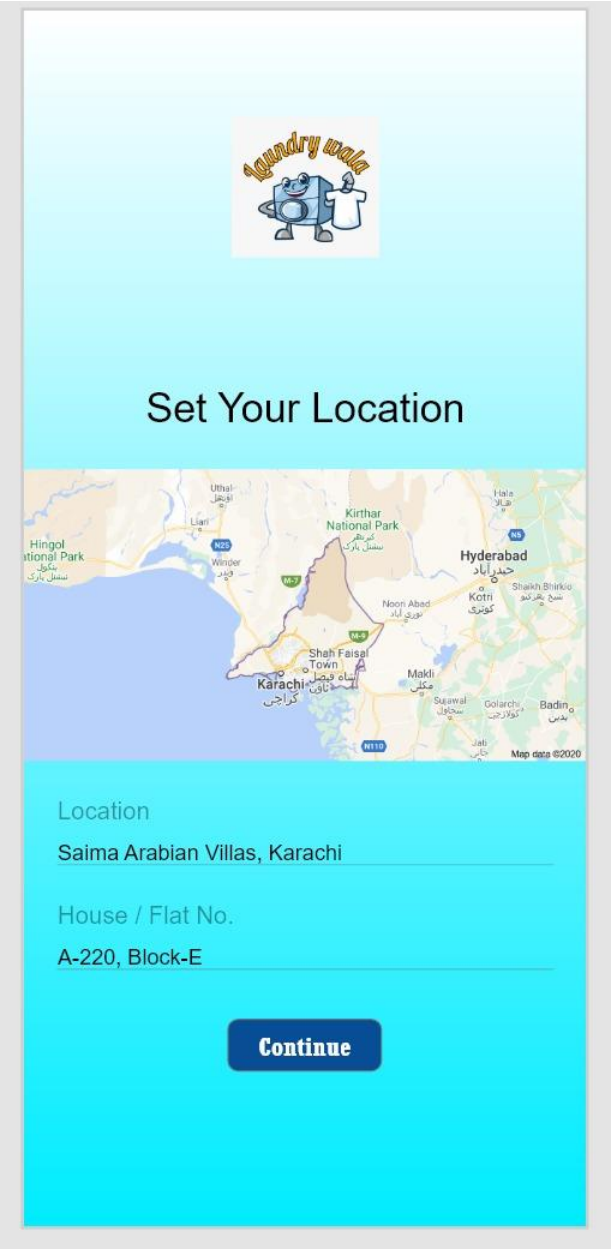

Hand Over Clothes
Our executive will come and collect tour clothes
Skip

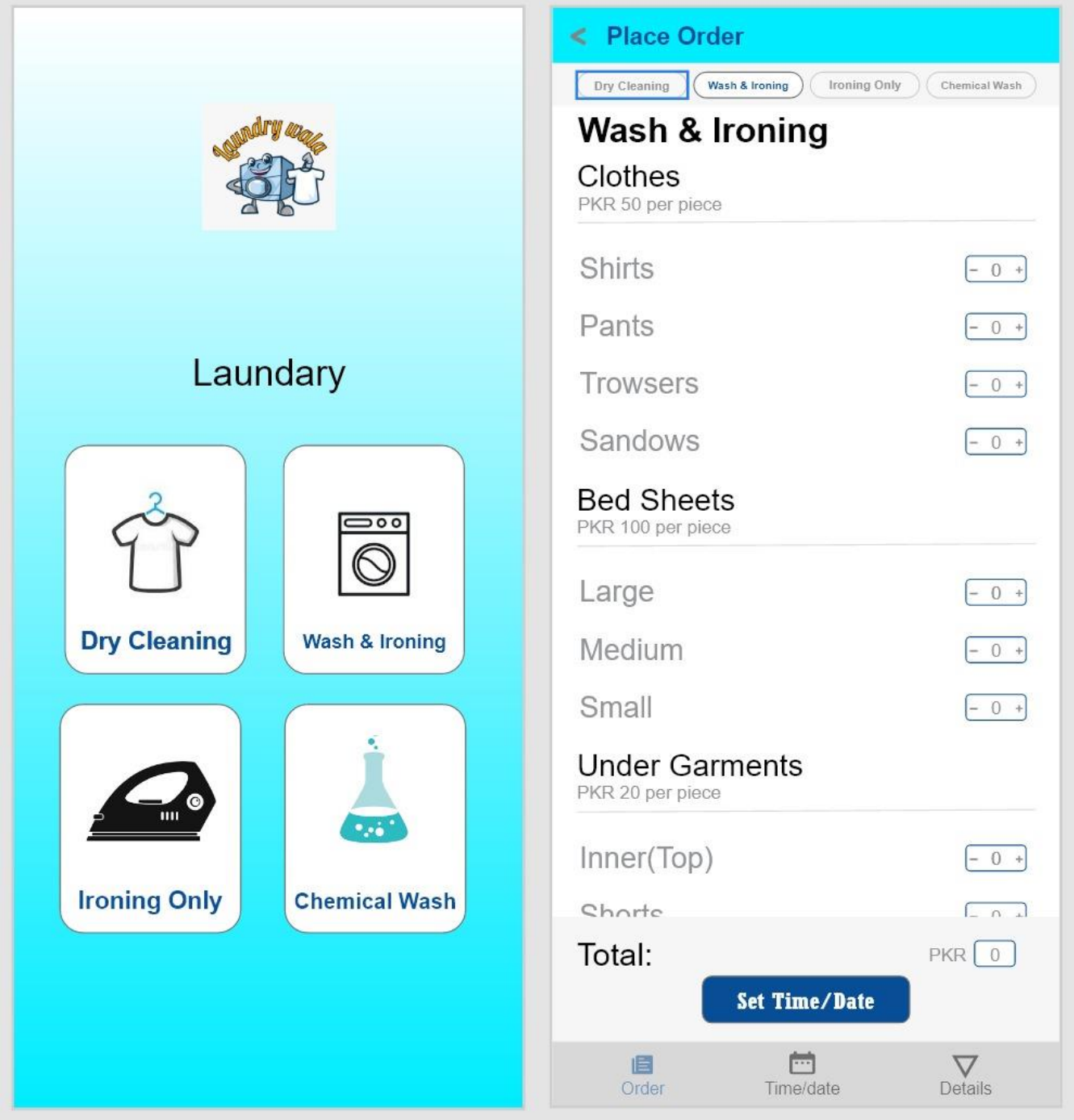

Pick Up
Our executive will pick up for wash
Skip
Get Started

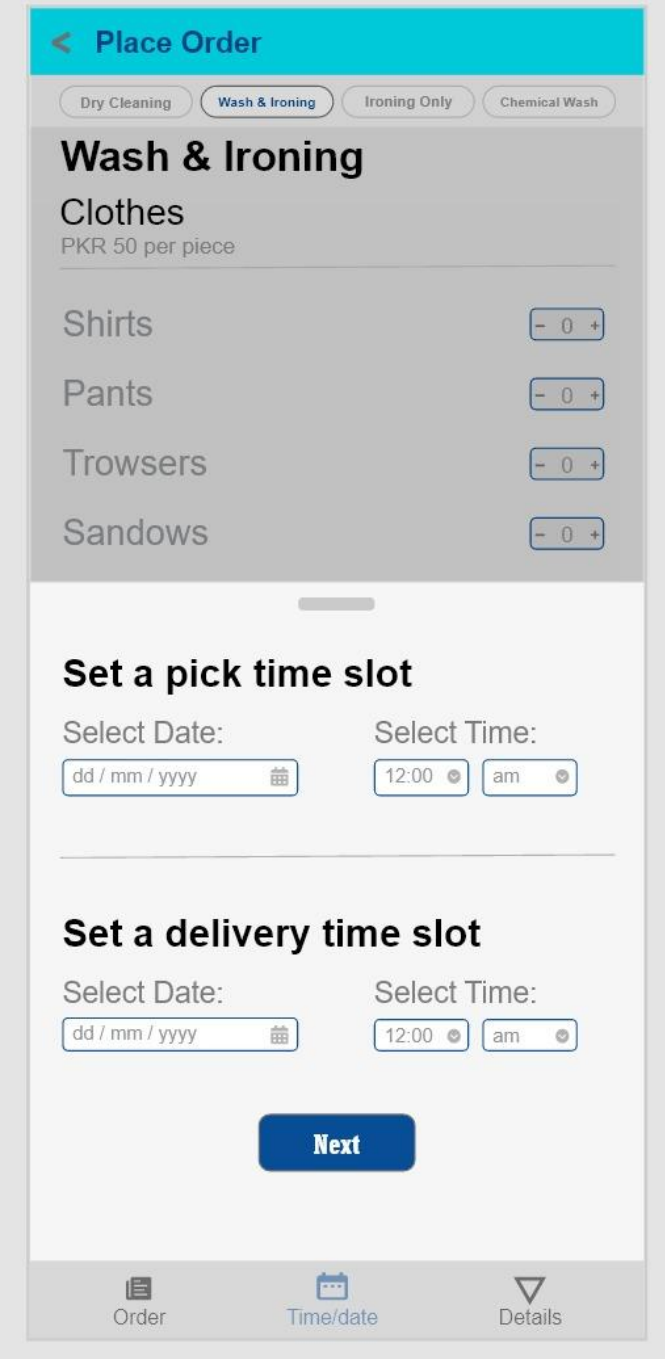

Laundry wala
Login As Client
Not registered yet? Register

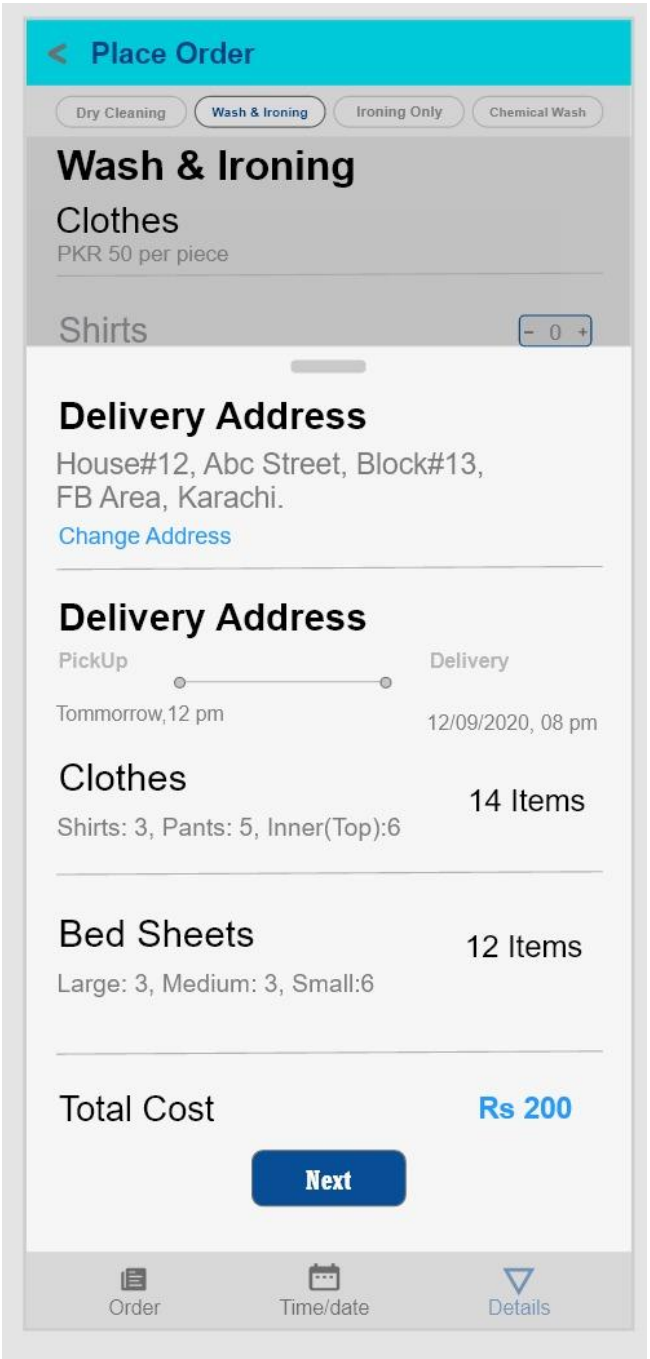

Create a new account
Enter Name*
Enter Mobile Number*
Enter Address*
Enter Password
Confirm Password
Google
Facebook
Register

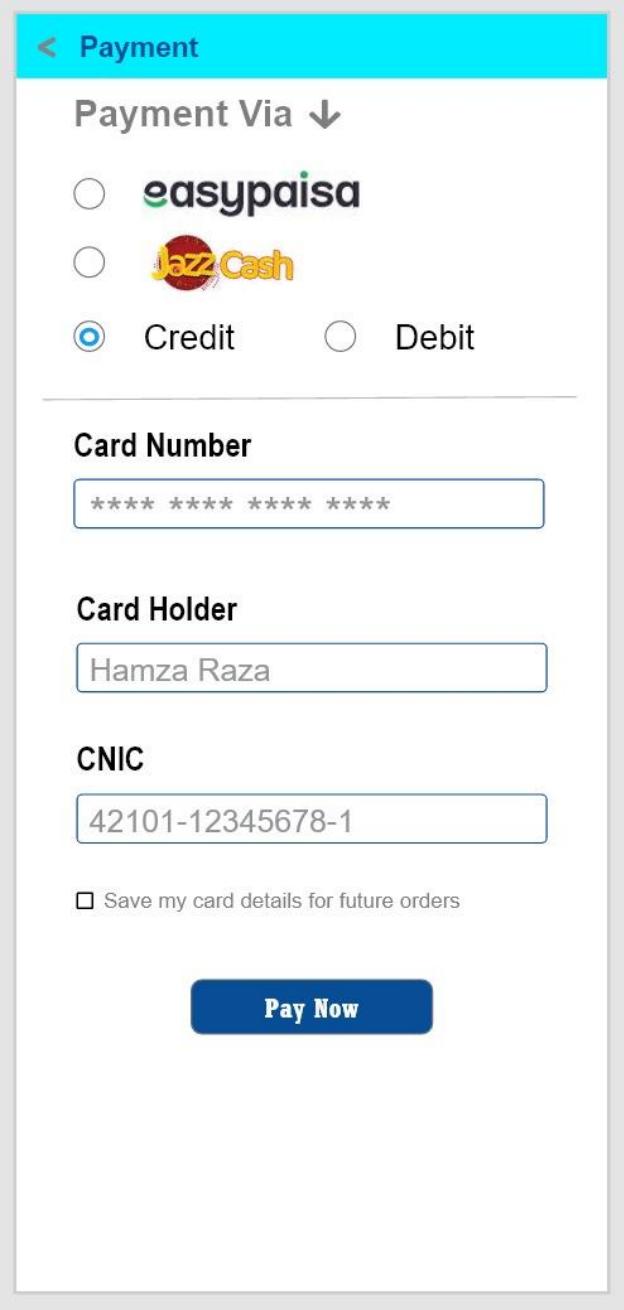

Login As Client
Enter Mobile Number*
Enter Password
Login

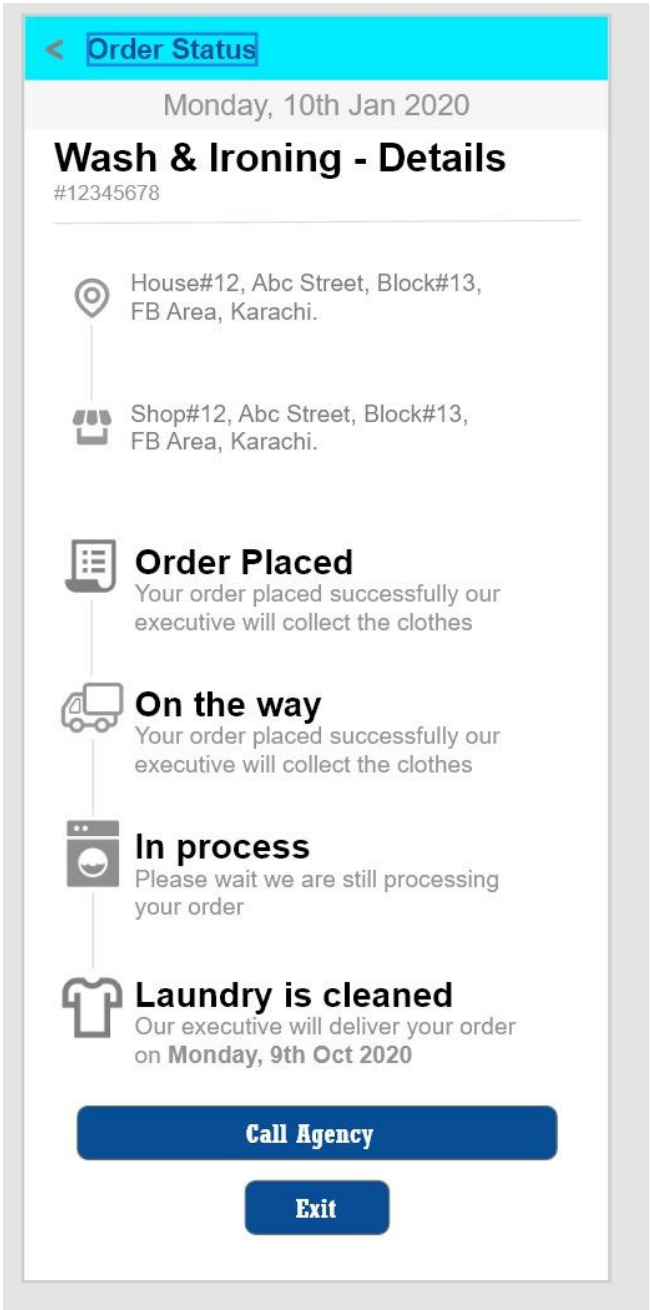

Set Your Location
Kirthar National Park
Hyderabad
Kotri
Shah Faisal Town
Karachi
Makli
Badin
Location
Saima Arabian Villas, Karachi
House / Flat No.
A-220, Block-E
Continue

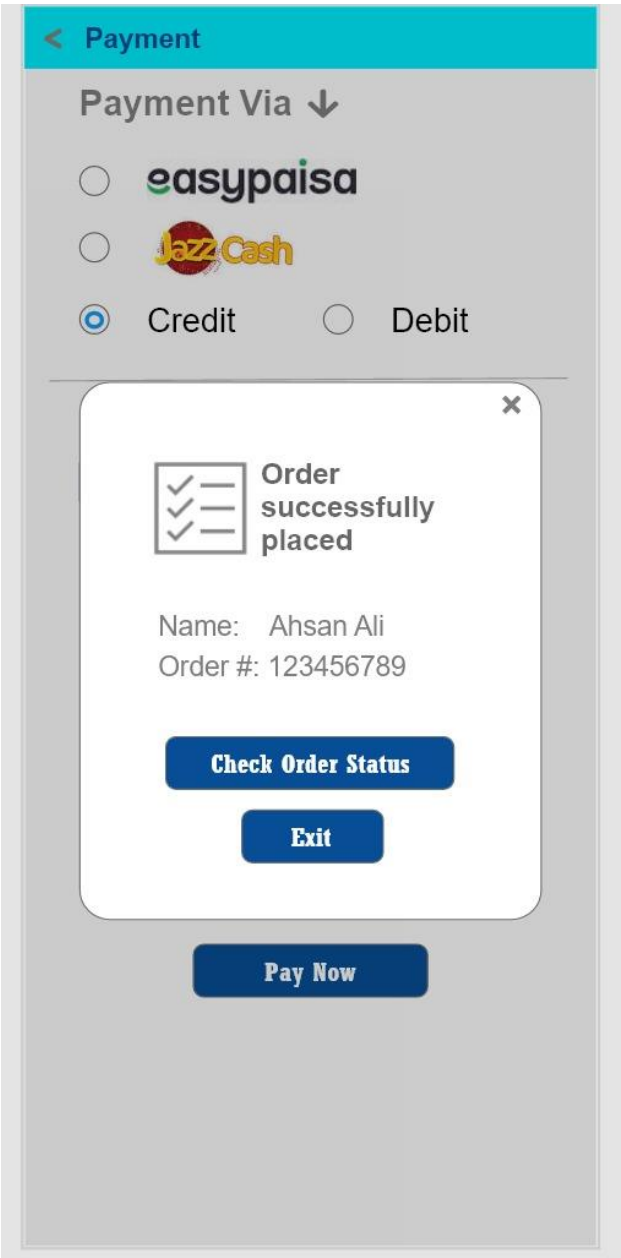

Laundry wala
Laundary
Dry Cleaning
Wash & Ironing
Ironing Only
Chemical Wash
Place Order
Dry Cleaning
Wash & Ironing
Ironing Only
Chemical Wash
Wash & Ironing
Clothes
PKR 50 per piece
Shirts
Pants
Trowsers
Sandows
Bed Sheets
PKR 100 per piece
Large
Medium
Small
Under Garments
PKR 20 per piece
Inner(Top)
Total:
PKR 0
Set Time/Date
Order
Time/date
Details


Place Order
Dry Cleaning
Wash & Ironing
Ironing Only
Chemical Wash
Wash & Ironing
Clothes
PKR 50 per piece
Shirts
Pants
Trowsers
Sandows
Set a pick time slot
Select Date:
dd / mm / yyyy
Select Time:
12:00
am
Set a delivery time slot
Select Date:
dd / mm / yyyy
Select Time:
12:00
am
Next
Order
Time/date
Details

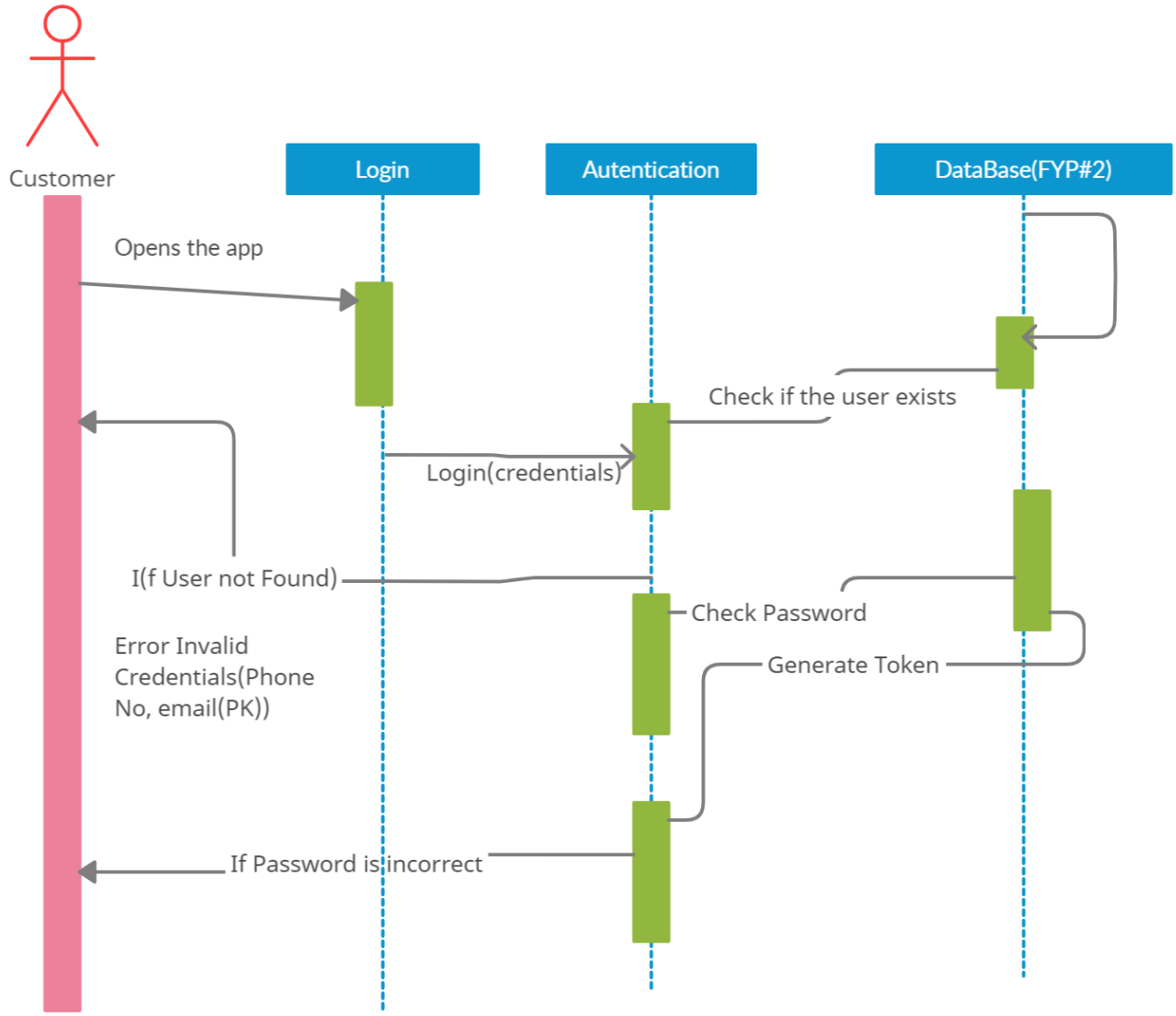

Place Order
Dry Cleaning
Wash & Ironing
Ironing Only
Chemical Wash
Wash & Ironing
Clothes
PKR 50 per piece
Shirts
Delivery Address
House#12, Abc Street, Block#13,
FB Area, Karachi.
Change Address
Delivery Address
PickUp
Delivery
Tommorrow,12 pm
12/09/2020, 08 pm
Clothes
14 Items
Shirts: 3, Pants: 5, Inner(Top):6
Bed Sheets
12 Items
Large: 3, Medium: 3, Small:6
Total Cost
Rs 200
Next
Order
Time/date
Details

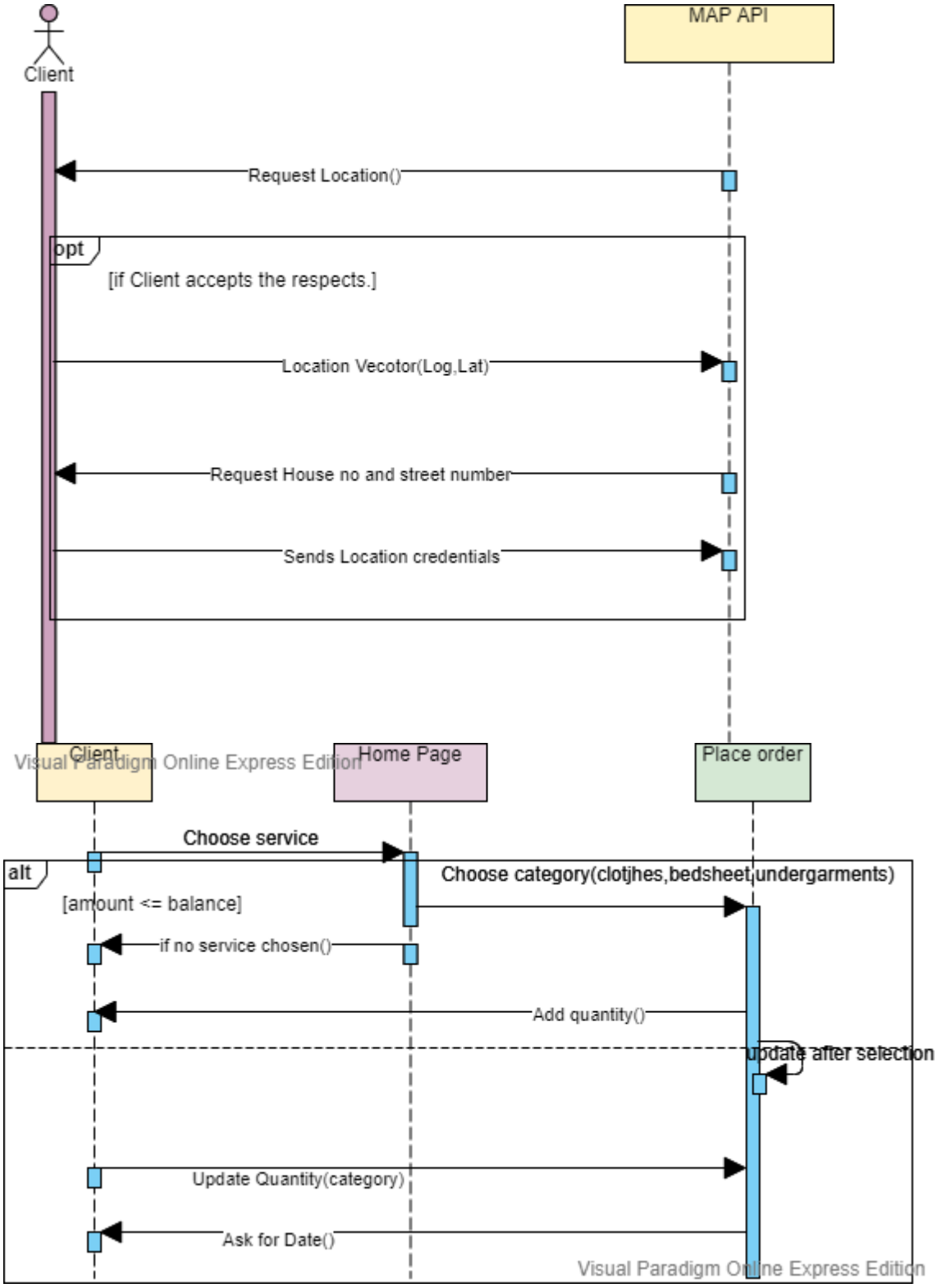

< Payment
Payment Via
easypaisa
JazzCash
Credit
Debit
Card Number
**** **** **** ****
Card Holder
Hamza Raza
CNIC
42101-12345678-1
Save my card details for future orders
Pay Now

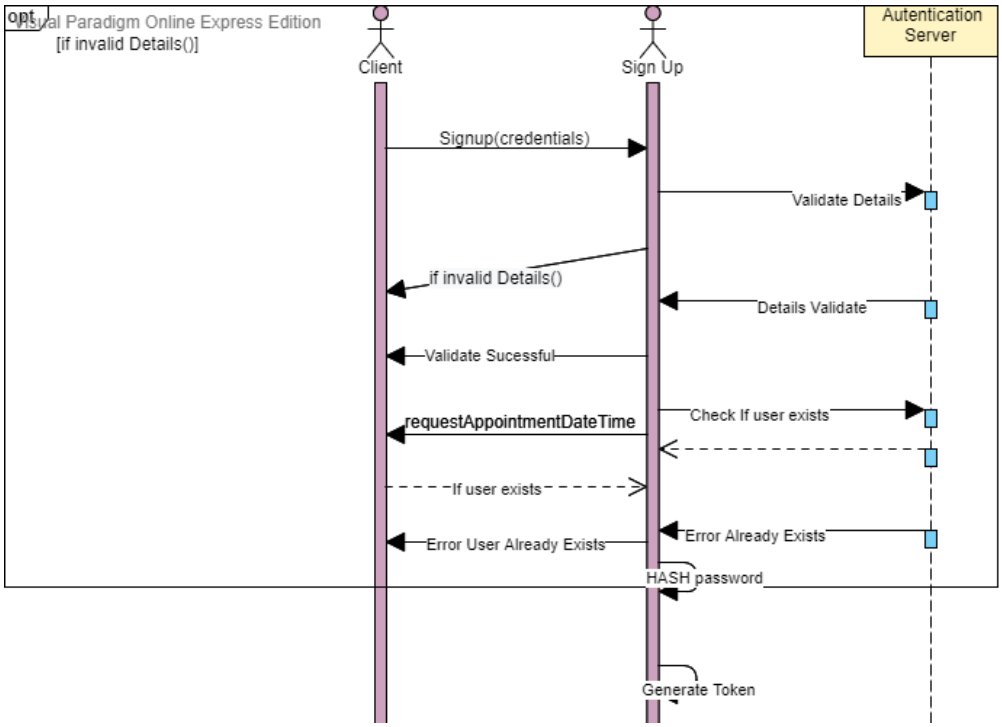

< Order Status
Monday, 10th Jan 2020
Wash & Ironing - Details
#12345678
House#12, Abc Street, Block#13,
FB Area, Karachi.
Shop#12, Abc Street, Block#13,
FB Area, Karachi.
Order Placed
Your order placed successfully our executive will collect the clothes
On the way
Your order placed successfully our executive will collect the clothes
In process
Please wait we are still processing your order
Laundry is cleaned
Our executive will deliver your order on Monday, 9th Oct 2020
Call Agency
Exit

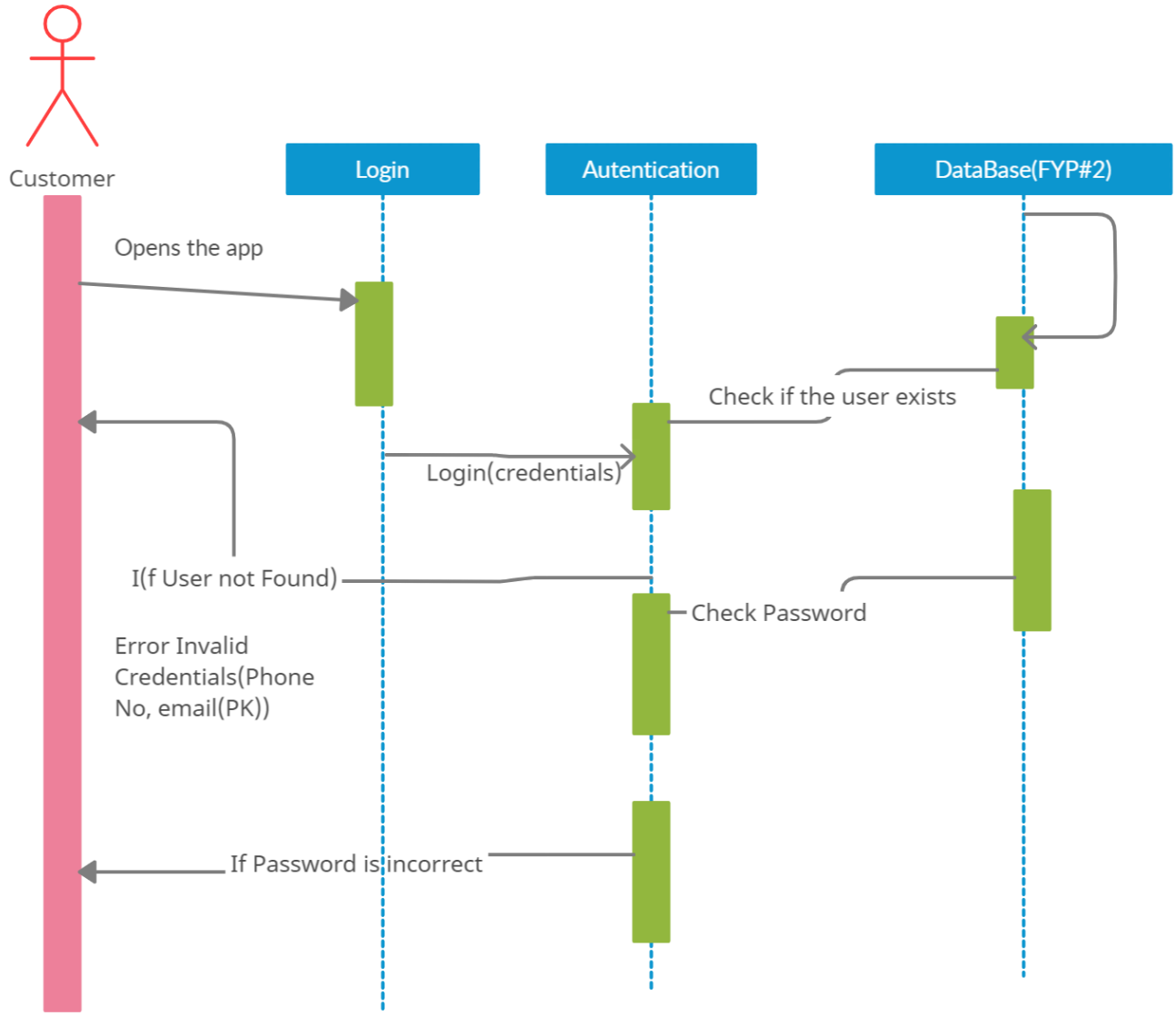


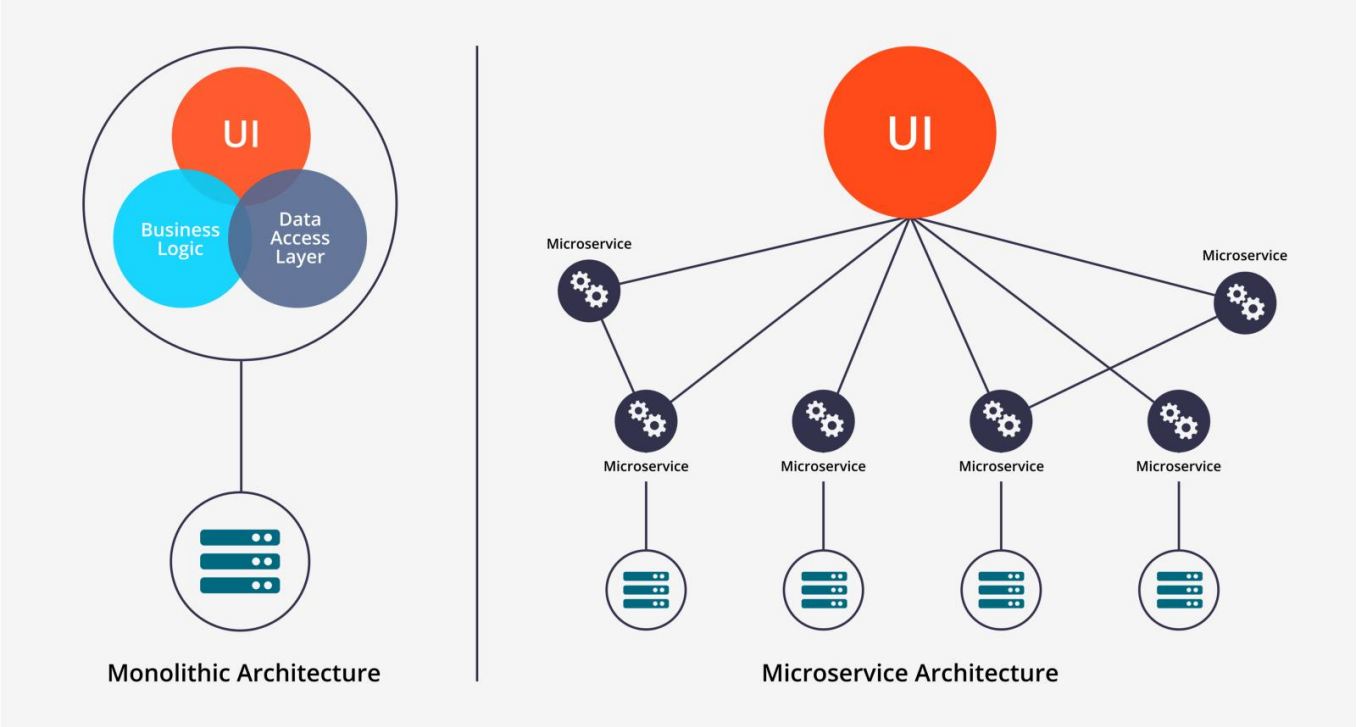
Appendix B: Analysis Models


Customer
Login
Autentication
DataBase(FYP#2)
Opens the app
Check if the user exists
Login(credentials)
I(f User not Found)
Check Password
Error Invalid Credentials(Phone No, email(PK))
Generate Token
If Password is incorrect


Client
MAP API
Request Location()
opt
[if Client accepts the respects.]
Location Vecotor(Log,Lat)
Request House no and street number
Sends Location credentials
Client
Home Page
Place order
Visual Paradigm Online Express Edition
Choose service
alt
[amount <= balance]
Choose category(clotjhes,bedsheet,undergarments)
if no service chosen()
Add quantity()
update after selection
Update Quantity(category)
Ask for Date()
Visual Paradigm Online Express Edition


opt
Visual Paradigm Online Express Edition
[if invalid Details()]
Client
Sign Up
Autentication Server
Signup(credentials)
Validate Details
if invalid Details()
Details Validate
Validate Sucessful
requestAppointmentDateTime
Check If user exists
If user exists
Error Already Exists
Error User Already Exists
HASH password
Generate Token


Customer
Login
Autentication
DataBase(FYP#2)
Opens the app
Check if the user exists
Login(credentials)
I(f User not Found)
Check Password
Error Invalid Credentials(Phone No, email(PK))
If Password is incorrect


UI
Business Logic
Data Access Layer
Monolithic Architecture
UI
Microservice
Microservice
Microservice
Microservice
Microservice
Microservice
Microservice Architecture