PHARMA DELIVERY

# Design Document

# Design and Implementation of Mobile Applications

Gasperini Marco - Danese Giancarlo
10533178 - 10521031

**https://github.com/marcuz1996/PharmaDelivery**

A.A. 2020/2021 - Prof. Luciano Baresi

## Contents

# 1 Document Structure

- `Introduction`: This section introduces the Design Document. It explains the Purpose, the Scope and the conventions of the document.
- `Use Cases Analysis`: This section introduces the Use Case analysis for the system. It contains the most relevant examined Use Cases.
- `Architectural Design`: This section describes the components used for the system and the relations between them, providing information about their deployment and how they work. It also specifies the architectural styles and the design patterns chosen to design the system.
- `Third Party Interaction`: This section introduces the interaction of PharmaDelivery with the listed Third Party APIs and services and their functionalities.
- `User Interface Design`: This section provides an overview on how the User Interface looks like. This section will be accurate enough to explain all our decisions about the design and the UI of the Mobile Application.
- `Implementation and Integration`: This section contains the order of the system's sub-components implementation and their integration.
- `Testing`: This section describes the test cases submitted to the Application.
- `System Attributes`: This section gives a general evaluation of the developed system based on the most important properties of IT systems.

# 2 Introduction

## 2.1 Purpose

This document represents the Design Document (DD) for PharmaDelivery mobile Application. The purpose of this document is to provide an overall guidance to the architecture of the software product and the interaction between all the developed components of the system, followed by the requirements and the goals that the software must satisfy.

## 2.2 Scope

PharmaDelivery is an online medicines order and delivery service where users can pay their purchases directly through the application. This application acts as an intermediary between independent pharmacies and customers making it easier for people to buy medicines.

## 2.3 Definition, Acronyms, Abbreviations

### 2.3.1 Definitions

- `User`: any client of the service, a person that logs in the system and uses it.
- `User Device`: any compatible device with the PharmaDelivery Application, mainly smartphones.
- `App`: abbreviation for the PharmaDelivery Mobile Application.

### 2.3.2 Acronyms

- DD: Design Document.
- API: Application Programming Interface.
- GPS: Global Positioning System.

## 2.4 Used Tools

- *Github*: https://github.com/
- *TexMaker*: https://www.xm1math.net/texmaker/
- *UnDraw*: https://undraw.co/
- *Figma*: https://figma.com/
- *Visual Studio Code*: https://code.visualstudio.com
- *Canva*: https://www.canva.com/
- *DrawIO*: https://www.draw.io/

## 2.5 Domain Assumptions

- [D1]: Users' devices support the GPS technology.
- [D2]: Users' devices support receiving push notifications.
- [D3]: Users' devices always have an internet connection available during the interaction with the system.
- [D4]: User's devices support the Mobile Application.
- [D5]: It is possible to retrieve the current time from the Users' devices.

## 2.6 Functional Requirements

The system provides to Users a simple and User-friendly interface to:

- [R1]: Register and Login/Logout from the Application.
- [R2]: Change their profile settings.
- [R3]: View Pharmacies from the map or from the list.
- [R4]: Filter product by category.
- [R5]: Pay for their purchases.
- [R6]: View their purchases history and their active delivery.
- [R7]: Consult information about PharmaDelivery.
- [R8]: Save their favourite/most purchased products.
- [R9]: Receive notifications on their purchases.
- [R10]: Choose and add the products to the cart.
- [R11]: Handle their shopping cart.
- [R12]: View product filtered by text input in the SearchBar.
- [R13]: Read information about the products they want buy.

# 3 Use Cases Analysis

In this section we will provide a list of the most relevant Use cases of the system, for a total of 6 of them:

## 3.1 Registration

| | |
|---|---|
| **Name** | Register to PharmaDelivery |
| **Actor** | Visitor |
| **Requirement** | [R1] |
| **Entry Condition** | The Visitor has installed the Mobile Application on his/her device |
| **Events Flow** | 1. The Visitor fills all fields in the Registration Screen(s)<br>2. The Visitor taps on the "SignUp" button<br>3. The system checks data validity<br>4. The system stores the new User's data |
| **Exit Conditions** | The Visitor has registered to PharmaDelivery |
| **Exceptions** | 1. The Visitor inserted an e-mail that is already used by another account<br>2. The Visitor inserted an invalid e-mail<br>3. Some fields are not filled<br>4. The Visitor inserted a password that does not satisfy the security rules |

## 3.2 Login

| | |
|---|---|
| **Name** | User Login |
| **Actor** | User |
| **Requirement** | [R1] |
| **Entry Condition** | The User is on the Login Screen of the Mobile Application |
| **Events Flow** | 1. The User enters the Email<br>2. The User enters the password<br>3. The User taps on the "Log in" button<br>4. The system checks the validity of the provided data |
| **Exit Conditions** | The User is logged in |
| **Exceptions** | 1. The User is not registered<br>2. The User inserted a wrong Username<br>3. The User inserted a wrong Password<br>4. Some fields are not filled |

## 3.3 Select product by category

| | |
|---|---|
| **Name** | Product Selection by Category |
| **Actor** | User |
| **Requirement** | [R4] |
| **Entry Condition** | The User is on the Home Screen of the Mobile Application |
| **Events Flow** | 1. The User taps on one category on the slider at the top of the page<br>2. The User scrolls through the filtered products<br>3. The User taps the shopping cart icon |
| **Exit Conditions** | The User has correctly added the product to the shopping cart |
| **Exceptions** | 1. The User doesn't find the product he/she is looking for<br>2. There are no products belonging to that category |

## 3.4 Find information about product

| | |
|---|---|
| **Name** | Find product information |
| **Actor** | User |
| **Requirement** | [R13] |
| **Entry Condition** | The User is on the Home Screen |
| **Events Flow** | 1. The User scrolls the view where products are displayed<br>2. The User taps the product that interests him/her<br>3. The User scrolls down below the image of product<br>4. The User reads the product information |
| **Exit Conditions** | The User has successfully find the information |
| **Exceptions** | 1. The product has no information<br>2. The product the User is looking for doesn't exists |

## 3.5 Products Payment

| | |
|---|---|
| **Name** | Pay for a list of Products |
| **Actor** | User |
| **Requirement** | [R5] |
| **Entry Condition** | The User has added products to the cart |
| **Events Flow** | 1. The User taps on the cart icon on the header or on the cart tab on the drawer menu<br>2. The User taps on the "Buy" button at the end of the page<br>3. The User provides his/her delivery information<br>4. The User taps on the "Proceed to payment" button<br>5. The system redirects the User to the corresponding payment page<br>6. The User inserts his payment data and taps on the "Pay" button<br>7. The system checks for the result of the payment<br>8. The system stores the payment data and sends the User back to Home Screen |
| **Exit Conditions** | The User has successfully paid the products |
| **Exceptions** | 1. Some payment fields are not filled<br>2. Some payment fields are wrong<br>3. The payment failed<br>4. The User canceled the payment |

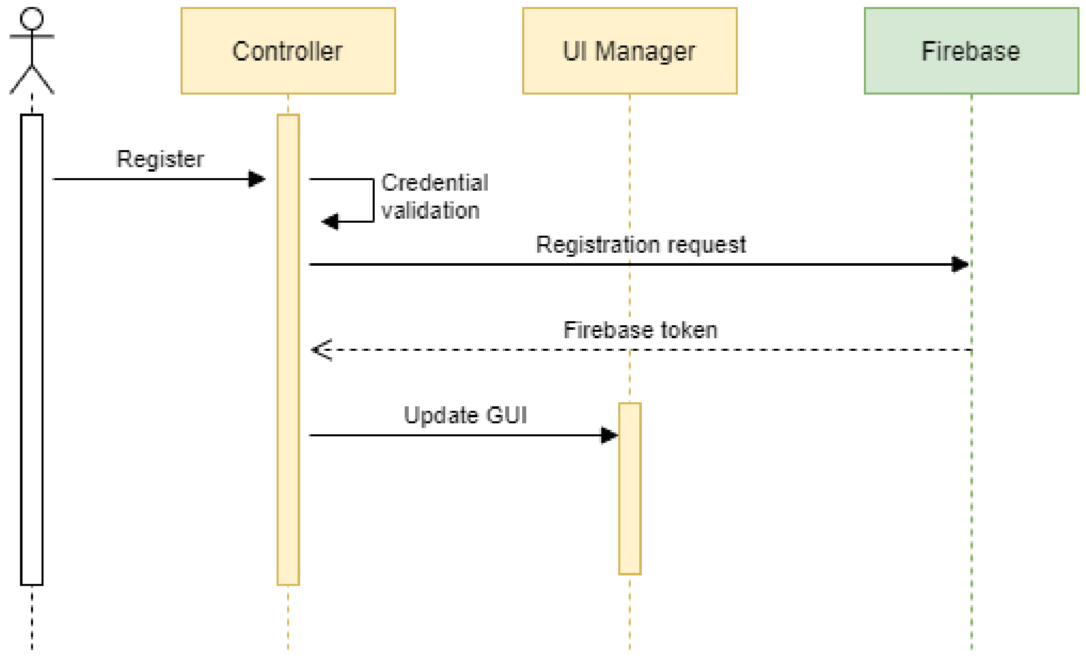
## 3.6 Search Product by Pharmacy

| | |
|---|---|
| **Name** | Looking for a Product filtered by Pharmacy |
| **Actor** | User |
| **Requirement** | [R3] |
| **Entry Condition** | The User is on Home Screen |
| **Events Flow** | 1. The User taps on the map tab in the menu<br>2. The User taps on the marker<br>3. The system displays the information about that pharmacy<br>4. The User taps on the "Go to pharmacy" button<br>5. The system shows the products available in that pharmacy<br>6. The User finds the product he/she is looking for |
| **Exit Conditions** | The User has successfully found the Product |
| **Exceptions** | 1. The User tapped on the map without hitting the marker<br>2. The Pharmacy that user is looking for isn't affiliated with PharmaDelivery |

# 4 Sequence Diagrams

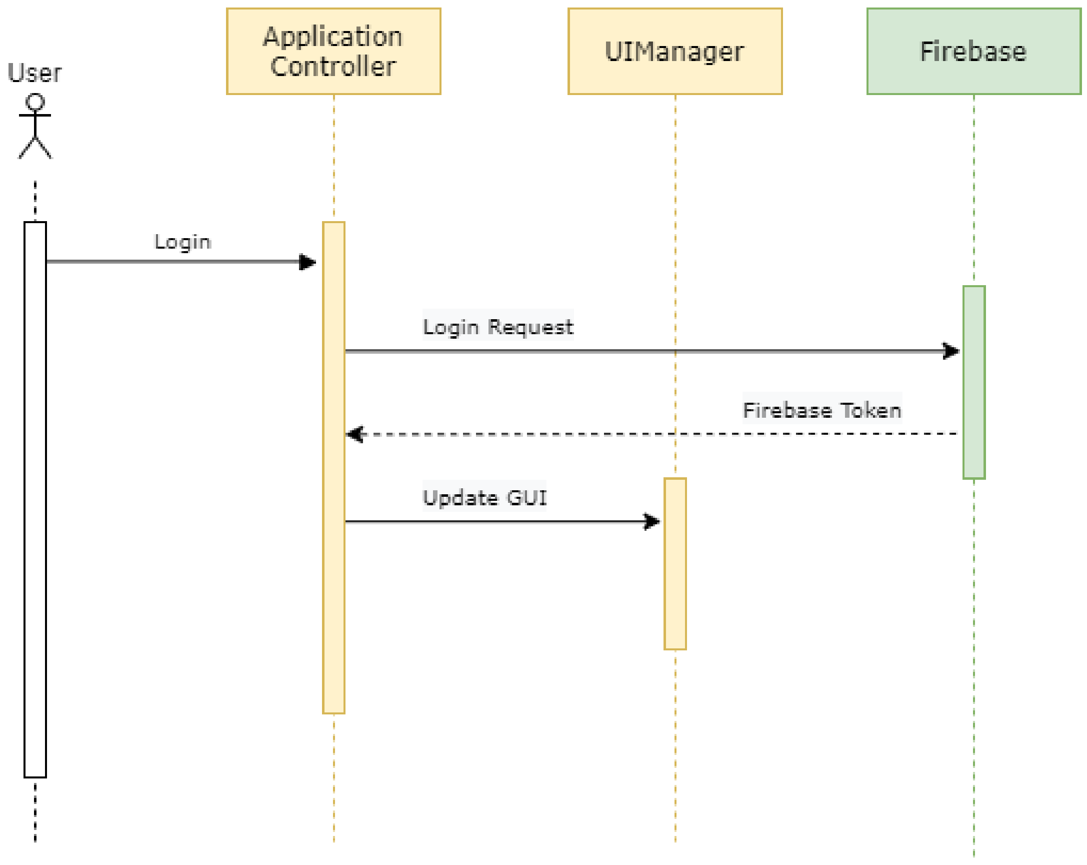
## 4.1 Registration

The ”Registration” process begins when the User inserts his/her credentials in the Signup Screen. Once pressed the ”SIGNUP” button, the Application will log into the Firebase Database, storing the User’s data. Once this procedure is completed, the system will update the GUI, bringing the new registered User to the Login Page.
If something goes wrong during the process, an error message will be displayed to the User.



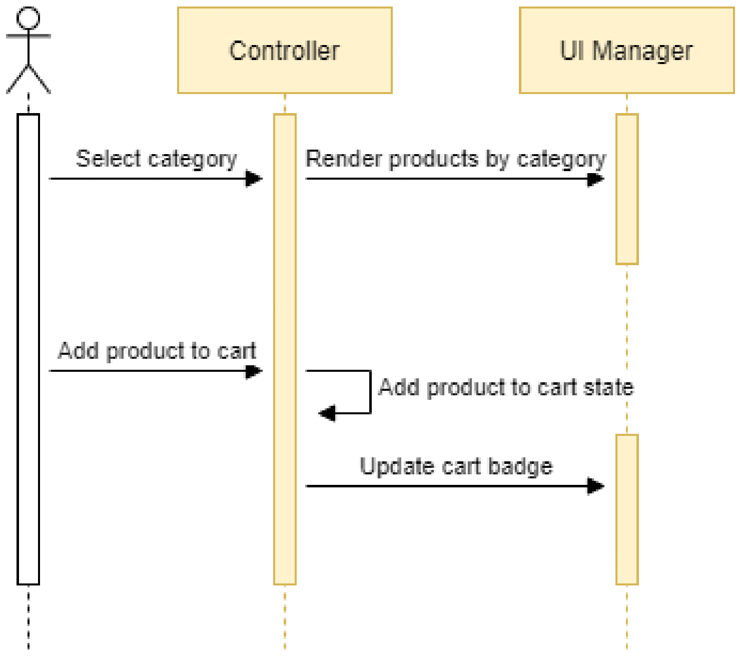
## 4.2 Login

The ”Login” process begins when the User inserts his/her email and password and presses on the Login button. Once pressed, the Application will log into the Firebase Database. Once this procedure is completed, the system will update the GUI, bringing the logged in User to the Home page.
If something goes wrong during the process, an error message will be displayed to the User.



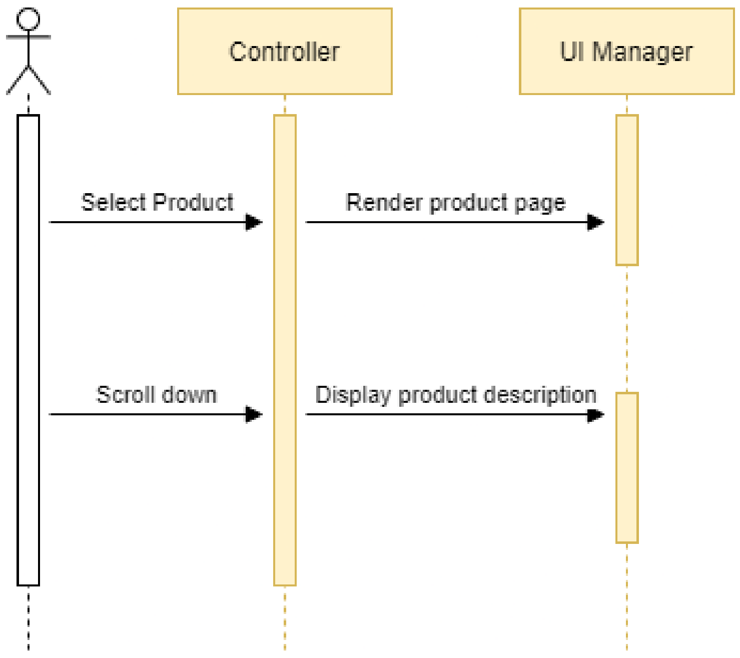
## 4.3 Select product by category

The "Add Products to Shopping Cart" process is a key part in the process of purchasing multiple products through the app. It can be done by casual selecting products or with a selection by category. In the second case we first select the category we are interested in and then we add the product to the shopping cart.



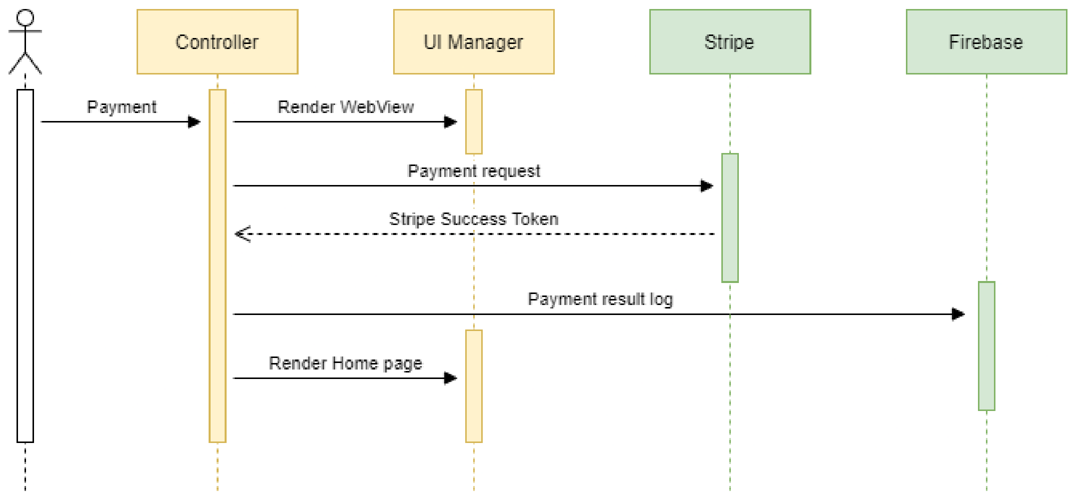
## 4.4 Find information about product

The ”Find information about Product” process begins when the User wants to add some products to his/her shopping cart. In order to read a complete description about the products we sell, he/she must select the product, click on it and then all the information about it will be displayed on the screen.



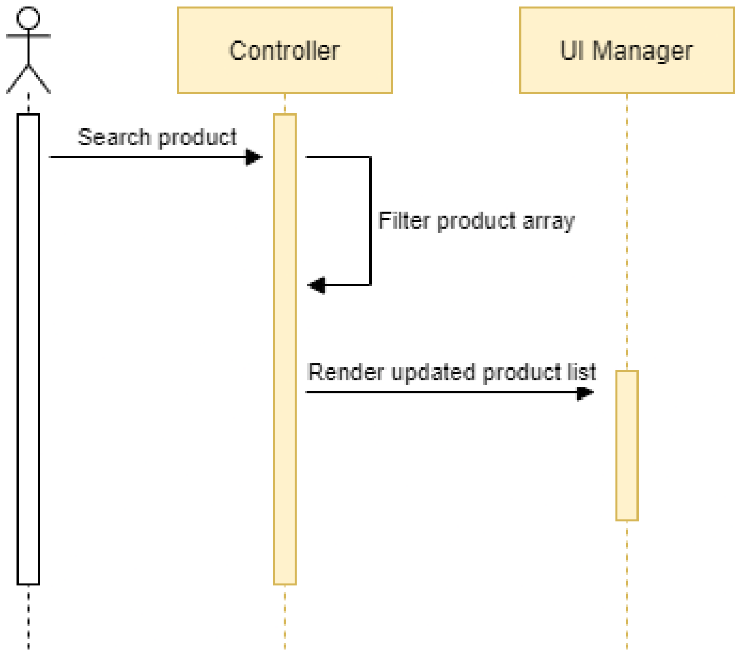
## 4.5 Products Payment

The ”Payment” process begins when the User presses on the Buy/Quick Buy button. In the first case, once pressed, the User is redirected to the delivery information page and then to the Stripe WebView to continue in the payment process. After being redirected to the WebView, the User is expected to provide credit card information to continue the payment process. The Application will then store the payment results into the Firebase Database. Once this procedure is completed, the system will update the GUI, bringing back the User to the Home page.
If something goes wrong during the process, an error message will be displayed to the User and under the profile page the payment will result failed.



## 4.6 Search Product by Pharmacy

The ”Search Product by Pharmacy” process begins when the User wants to buy a product. When he/she is in the Home page he/she will see a SearchBar at the top of the page. When he/she inserts text input in the SearchBar, the products are then filtered and displayed to the User.



# 5 Architectural Design

Our Application is composed by two main components: a Front End, developed with the React Native Framework, and a Back End that relies on Firebase, and in particular on Firebase Real-time Database and Cloud Firestore.
These two components are highly connected: in fact, the Mobile Application has the role to show to the User all the data stored in the Database, and also to respond to the User's behaviour.

## 5.1 Front End: Mobile Application

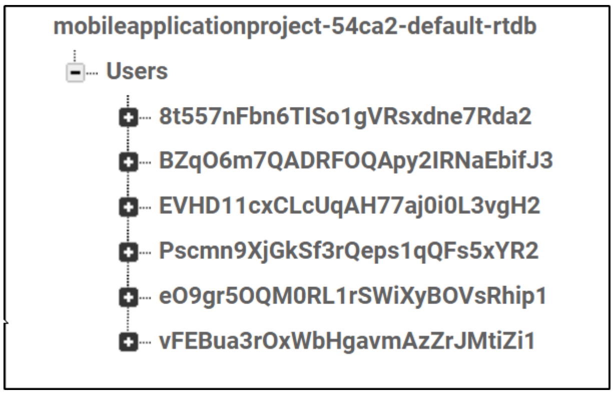
The Mobile Application is a React Native Application composed by several screens, each one will be described in the User Interface Design Section. A **Cross-Platform** Framework has been identified as the smartest choice in this case, in order to reach the largest number of Users.
The Application is obviously **Multi-Threaded**. This is because we need to be able to handle all User actions and at the same time to keep the products and the user information updated, without having blocking instructions and therefore performing all the actions in parallel.
The Mobile Application is composed of a total of 16 screens, including sub-screens (better described in Section 7), and the most important ones are:

- Home
- Product
- Profile
- Shopping Cart

## 5.2 Back End: Firebase

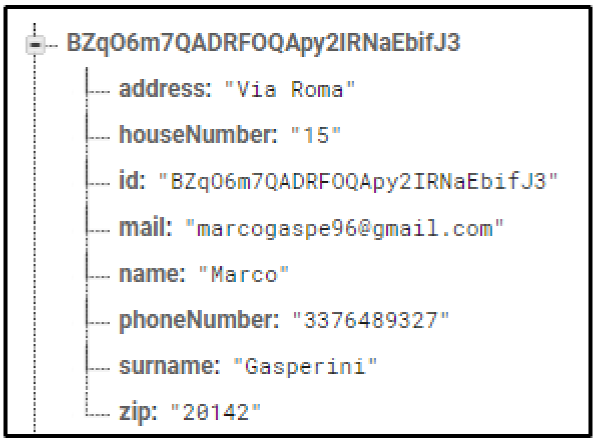
The Firebase Back End is where all the Products, Pharmacies data and Users data/information are stored. The Back End is also in charge of Authentication and User Session Management (a well implemented and tested functionality of Firebase).
The main data that has been stored is the Product data: every product has name, description, price, category, identifier, available quantity and list of pharmacies in which it is present.
Since Firebase is a NoSQL Database we have a JSON-style structure.

**Real Time Database** We use Real-time-Database to store user information.



```
mobileapplicationproject-54ca2-default-rtdb
  Users
    8t557nFbn6TISo1gVRsxdne7Rda2
    BZqO6m7QADRFOQApy2IRNaEbifJ3
    EVHD11cxCLcUqAH77aj0i0L3vgH2
    Pscmn9XjGkSf3rQeps1qQFs5xYR2
    eO9gr5OQM0RL1rSWiXyBOVsRhip1
    vFEBua3rOxWbHgavmAzZrJMtiZi1
```

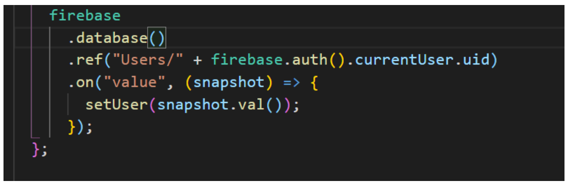
**Real Time Database Detail** User information stored in Real-Time-Database are: address, id, name, surname, phone number, zip, house number and email.



```
BZqO6m7QADRFOQApy2IRNaEbifJ3
  address: "Via Roma"
  houseNumber: "15"
  id: "BZqO6m7QADRFOQApy2IRNaEbifJ3"
  mail: "marcogaspe96@gmail.com"
  name: "Marco"
  phoneNumber: "3376489327"
  surname: "Gasperini"
  zip: "20142"
```

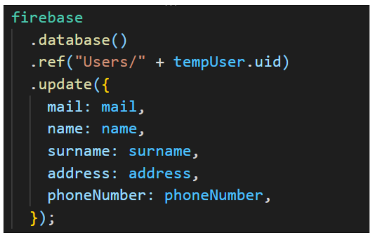
**Communication** The communication with the Realtime Database is implemented through three main methods: `on()`, `update()` and `set()`.

- on() is used to read data about Users when they decide to pass through quick buy and they do not provide shipping information.
- update() is used to update User's data through profile screen section where a User can modify his address, phone number and email.
- set() is used to save data relative to a registration of User.



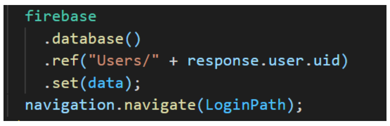
```
  firebase
    .database()
    .ref("Users/" + firebase.auth().currentUser.uid)
    .on("value", (snapshot) => {
      setUser(snapshot.val());
    });
};
```

Example of on() function execution in the Profile Screen



```
firebase
  .database()
  .ref("Users/" + tempUser.uid)
  .update({
    mail: mail,
    name: name,
    surname: surname,
    address: address,
    phoneNumber: phoneNumber,
  });
```

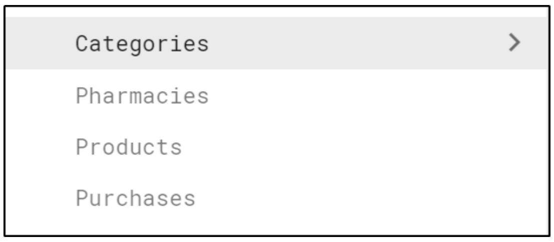
Example of update() function execution in the Profile Screen



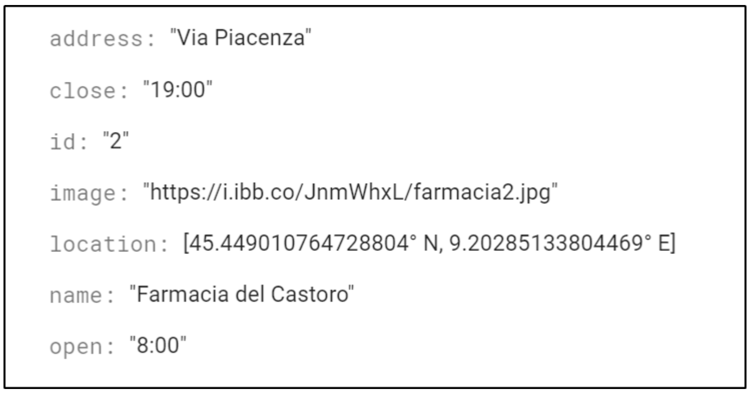
```
firebase
  .database()
  .ref("Users/" + response.user.uid)
  .set(data);
navigation.navigate(LoginPath);
```

Example of set() function execution in the Signup Screen

**Cloud Firestore** We use Cloud Firestore of Firebase to store: **Pharmacies**, **Products**, **Categories** and **Purchases**.

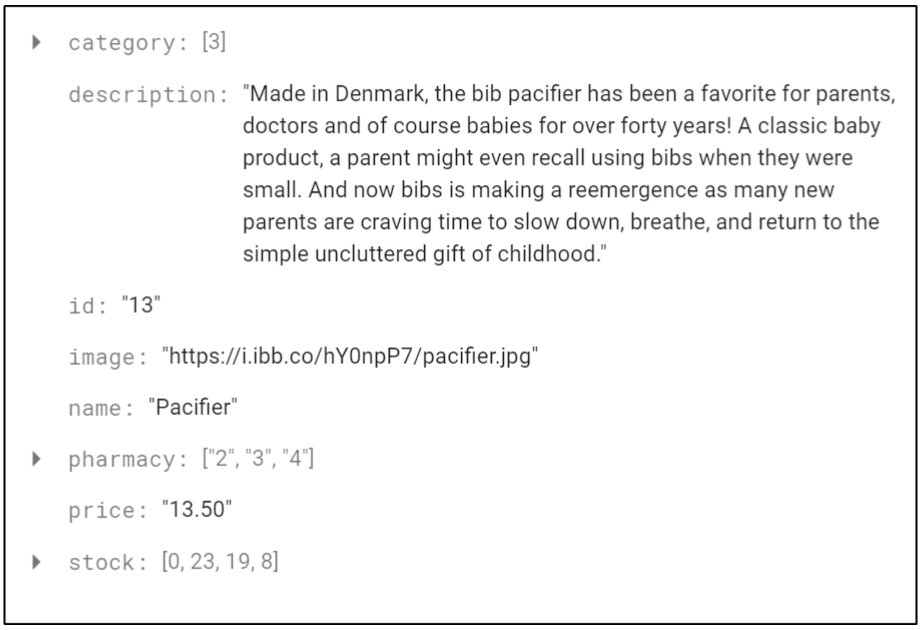


**Pharmacies** In this collection all the Pharmacies details are stored such as the name of the Pharmacy, the address, the geo-location, the URL of the pharmacy's main image and the timetable.



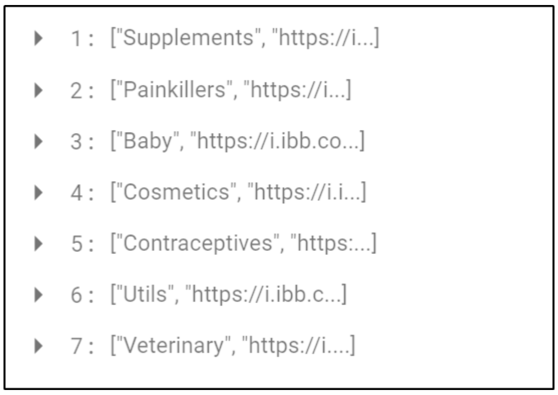
```
address: "Via Piacenza"
close: "19:00"
id: "2"
image: "https://i.ibb.co/JnmWhxL/farmacia2.jpg"
location: [45.449010764728804° N, 9.20285133804469° E]
name: "Farmacia del Castoro"
open: "8:00"
```

**Products** In this collection all the Products details are stored such as the name, the category, the description, the URL of it's image, the pharmacy in which that product is available, the price and the stock in each pharmacy.



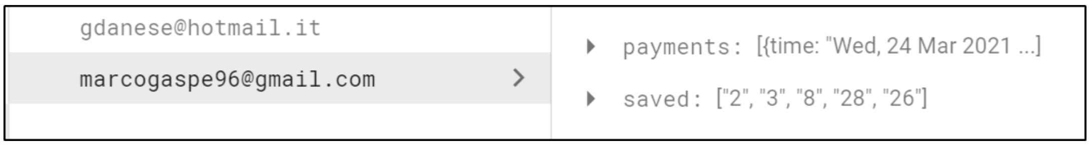
```
▸ category: [3]
  description: "Made in Denmark, the bib pacifier has been a favorite for parents,
               doctors and of course babies for over forty years! A classic baby
               product, a parent might even recall using bibs when they were
               small. And now bibs is making a reemergence as many new
               parents are craving time to slow down, breathe, and return to the
               simple uncluttered gift of childhood."
  id: "13"
  image: "https://i.ibb.co/hY0npP7/pacifier.jpg"
  name: "Pacifier"
▸ pharmacy: ["2", "3", "4"]
  price: "13.50"
▸ stock: [0, 23, 19, 8]
```

**Categories** In this collection all the Categories are stored in an array where each cell is made by the name of the category and the URL of the relative image.



```
▸ 1: ["Supplements", "https://i...]
▸ 2: ["Painkillers", "https://i...]
▸ 3: ["Baby", "https://i.ibb.co...]
▸ 4: ["Cosmetics", "https://i.i...]
▸ 5: ["Contraceptives", "https:...]
▸ 6: ["Utils", "https://i.ibb.c...]
▸ 7: ["Veterinary", "https://i....]
```

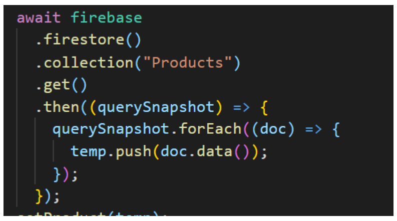
**Categories** In this collection all the Purchases and the saved elements are stored in an array. Each purchase has a payment with timestamp fields and a status.



```
gdanese@hotmail.it                ▸ payments: [{time: "Wed, 24 Mar 2021 ...]
marcogaspe96@gmail.com    >       ▸ saved: ["2", "3", "8", "28", "26"]
```

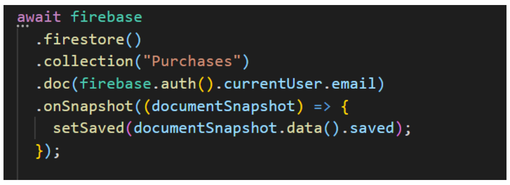
**Communication** The communication with the Cloud Firestore is implemented through three main methods: `get()`, `onSnapshot()` and `update()`.

- get() is used to retrieve the content of a single document or collection only once. It's a kind of "get and forget".
- onSnapshot() is used to set a listener on a collection. When a listener is set, Cloud Firestore sends your listener an initial snapshot of the data, and then another snapshot each time the document changes.
- update() is used to update database data: both new inserts of objects and/or the modification of a database item.



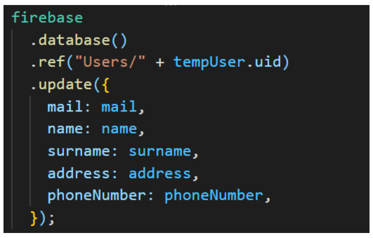
```
await firebase
  .firestore()
  .collection("Products")
  .get()
  .then((querySnapshot) => {
    querySnapshot.forEach((doc) => {
      temp.push(doc.data());
    });
  });
```

Example of get() function execution in the Home Screen



```
await firebase
  .firestore()
  .collection("Purchases")
  .doc(firebase.auth().currentUser.email)
  .onSnapshot((documentSnapshot) => {
    setSaved(documentSnapshot.data().saved);
  });
```

Example of onSnapshot() function execution in the Product Screen



```
firebase
  .database()
  .ref("Users/" + tempUser.uid)
  .update({
    mail: mail,
    name: name,
    surname: surname,
    address: address,
    phoneNumber: phoneNumber,
  });
```

Example of set() function execution in the Product Screen

## 5.3 Architectural styles and patterns

### 5.3.1 Design Patterns

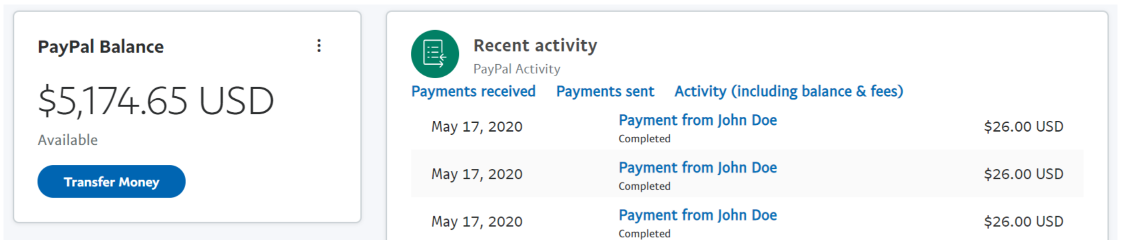
- `Model-View-Controller Pattern`: a software design pattern commonly used for developing User interfaces which divides the related Application logic into three interconnected elements. This is done to separate internal representations of information from the ways information is presented to and accepted from the User.

Following the MVC Architectural Pattern, it decouples these major components allowing code reuse and parallel development.
In PharmaDelivery, we can say that the `Mobile App` represents both the **View** and the **Controller** of the system, while the entire `Back End` and in particular the Database represents the **Model**. That means, the Application shows the relevant data to the User, and provides the possibility to choose among some options to modify the shown data: it behaves like a Controller, calling fetch methods to update the Server-side data.
It is worth to mention that, in some cases, the MVC Pattern with a local copy on the Client side has been used: this is because relying on fetch methods every-time and considering that the User modifies only a small amount of data, it would have been too heavy from a computational point of view, and also very bandwidth-consuming.

## 6 Third Party interaction

### 6.1 PayPal

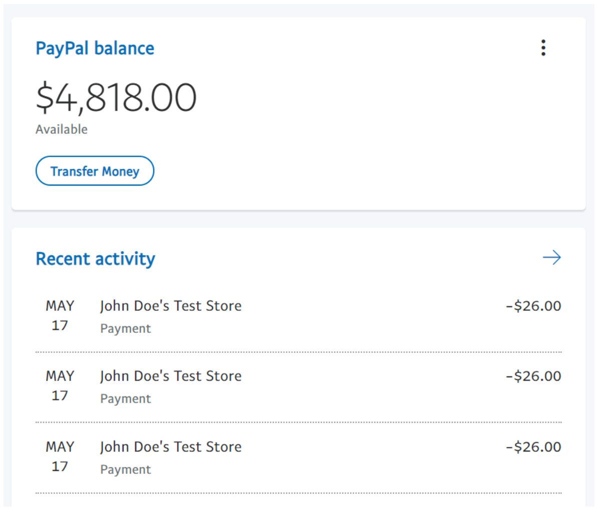
In order to handle PayPal payments, we had to set up a PayPal Developer account, and also two different sandbox accounts (one as a Merchant and one as a Customer). Due to the lack of documentation of React Native-PayPal libraries and components, we were forced to implement the payment through a WebView and calls to bare PayPal APIs, using POST fetch requests.
As shown in the images below, test payments have been performed in order to transfer money from the Customer account to the Merchant account.



$5,174.65 USD
Available

| | | |
|---|---|---|
| May 17, 2020 | Payment from John Doe<br>Completed | $26.00 USD |
| May 17, 2020 | Payment from John Doe<br>Completed | $26.00 USD |
| May 17, 2020 | Payment from John Doe<br>Completed | $26.00 USD |

Merchant account history of received payments



PayPal balance

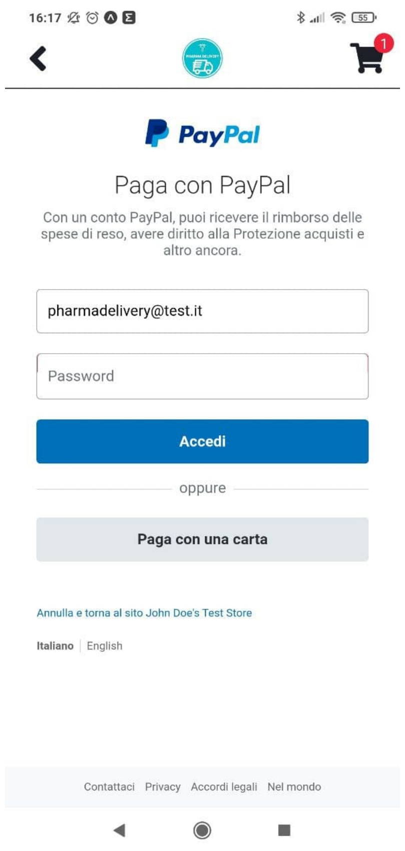
$4,818.00
Available

Recent activity

| | | |
|---|---|---|
| MAY 17 | John Doe's Test Store<br>Payment | -$26.00 |
| MAY 17 | John Doe's Test Store<br>Payment | -$26.00 |
| MAY 17 | John Doe's Test Store<br>Payment | -$26.00 |

Customer account history of processed payments

**Limitations** Being a Developer account, the main limitation is that the actual User of the Mobile Application can't use his/her real personal PayPal account.


16:17

Paga con PayPal

Con un conto PayPal, puoi ricevere il rimborso delle spese di reso, avere diritto alla Protezione acquisti e altro ancora.

pharmadelivery@test.it

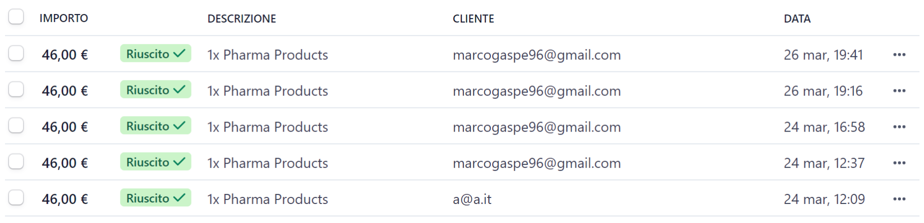
Password

Accedi
oppure
Paga con una carta
Annulla e torna al sito John Doe's Test Store
Italiano | English
Contattaci Privacy Accordi legali Nel mondo

Screenshot of PayPal integration in PharmaDelivery

## 6.2 Stripe

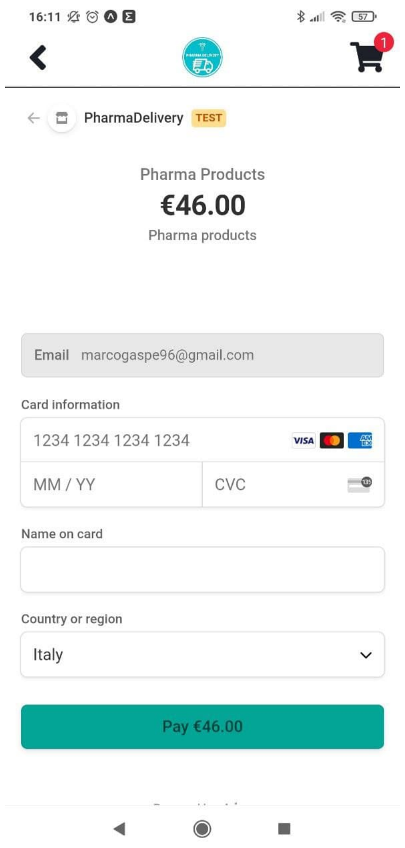
Stripe implementation in React Native is far from being cross-platform, and this is the reason why we had to follow the same approach of PayPal implementation, using a WebView to call the Stripe Checkout APIs and proceed to the payment.



| IMPORTO | | DESCRIZIONE | CLIENTE | DATA | |
|---|---|---|---|---|---|
| 46,00 € | Riuscito ✓ | 1x Pharma Products | marcogaspe96@gmail.com | 26 mar, 19:41 | ··· |
| 46,00 € | Riuscito ✓ | 1x Pharma Products | marcogaspe96@gmail.com | 26 mar, 19:16 | ··· |
| 46,00 € | Riuscito ✓ | 1x Pharma Products | marcogaspe96@gmail.com | 24 mar, 16:58 | ··· |
| 46,00 € | Riuscito ✓ | 1x Pharma Products | marcogaspe96@gmail.com | 24 mar, 12:37 | ··· |
| 46,00 € | Riuscito ✓ | 1x Pharma Products | a@a.it | 24 mar, 12:09 | ··· |

History of payments received or deleted by Users

**Limitations** Our Stripe account is a developer one, and thus the actual User should insert Test Card data instead of his/her real Card data.


16:11

PharmaDelivery TEST

Pharma Products

€46.00

Pharma products

Email marcogaspe96@gmail.com

Card information

1234 1234 1234 1234

MM / YY

CVC

Name on card

Country or region

Italy

Pay €46.00

Screenshot of Stripe integration in PharmaDelivery

## 6.3 Redux

The Redux implementation is one of the core elements of the system. In fact, PharmaDelivery has to handle a high amount of data often shared between all the screens: Redux is the perfect choice, separating and simplifying the local state management from the global state management.
Our Mobile Application follows the recommended usage with one single **store**, several **actions** to change the store state and a **reducer** to specify how the actions transform the store state.

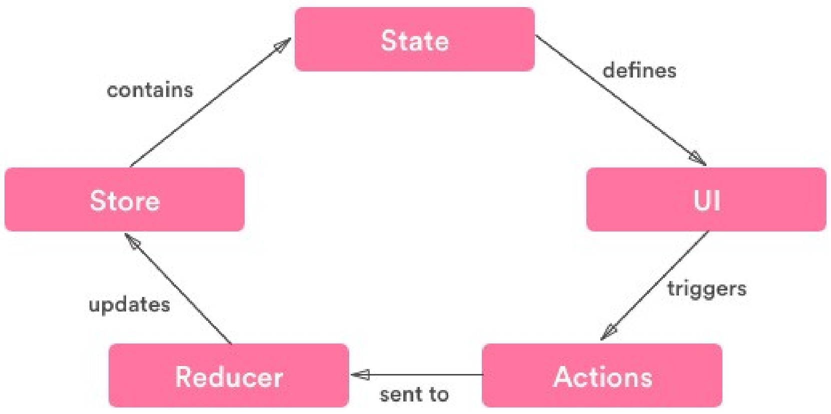
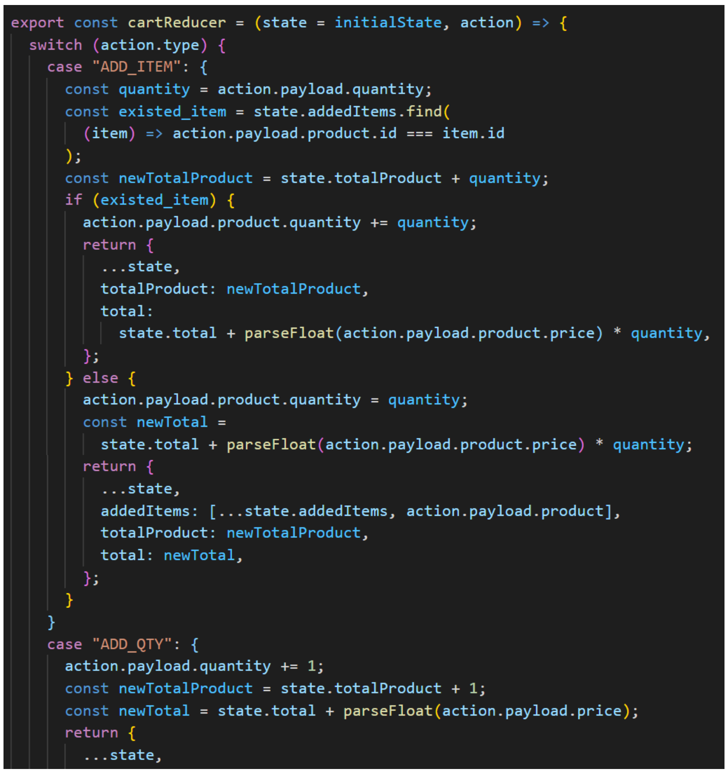


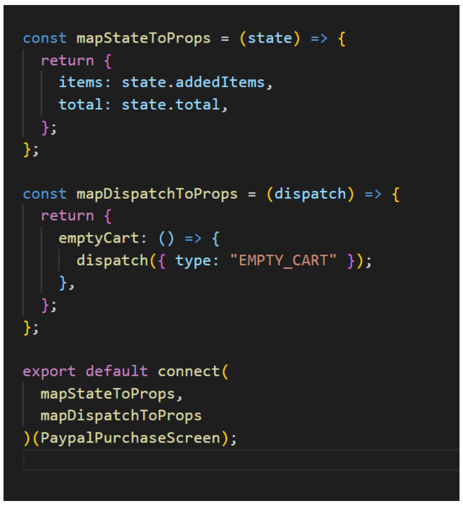
Figure 1: Redux well-known workflow



```
export const cartReducer = (state = initialState, action) => {
  switch (action.type) {
    case "ADD_ITEM": {
      const quantity = action.payload.quantity;
      const existed_item = state.addedItems.find(
        (item) => action.payload.product.id === item.id
      );
      const newTotalProduct = state.totalProduct + quantity;
      if (existed_item) {
        action.payload.product.quantity += quantity;
        return {
          ...state,
          totalProduct: newTotalProduct,
          total:
            state.total + parseFloat(action.payload.product.price) * quantity,
        };
      } else {
        action.payload.product.quantity = quantity;
        const newTotal =
          state.total + parseFloat(action.payload.product.price) * quantity;
        return {
          ...state,
          addedItems: [...state.addedItems, action.payload.product],
          totalProduct: newTotalProduct,
          total: newTotal,
        };
      }
    }
    case "ADD_QTY": {
      action.payload.quantity += 1;
      const newTotalProduct = state.totalProduct + 1;
      const newTotal = state.total + parseFloat(action.payload.price);
      return {
        ...state,
```

Figure 2: Part of the Redux Reducer definition

Every Screen that needs to read or write data from the store is connected with it through the *connect* function, making the screen able to access the store values and to dispatch actions.



```
const mapStateToProps = (state) => {
  return {
    items: state.addedItems,
    total: state.total,
  };
};

const mapDispatchToProps = (dispatch) => {
  return {
    emptyCart: () => {
      dispatch({ type: "EMPTY_CART" });
    },
  };
};

export default connect(
  mapStateToProps,
  mapDispatchToProps
)(PaypalPurchaseScreen);
```

Figure 3: State and Actions linking in Details Screen

# 7 User Interface Design

In this section we will describe, page by page, all the Screens of the Mobile Application (showing how the Application behaves on different screen sizes) and their functionalities, along with the decisions we made to provide a clear and intuitive User Experience.
The default iOS-based device used for our screens is iPhone X, while the Android-based one is the Redmi Note 7. On top of it, we will present some screenshots taken from an Android-based tablet, that is the Teclast M30 10.1 inch, to demonstrate how the Application behaves both on small and big screens.

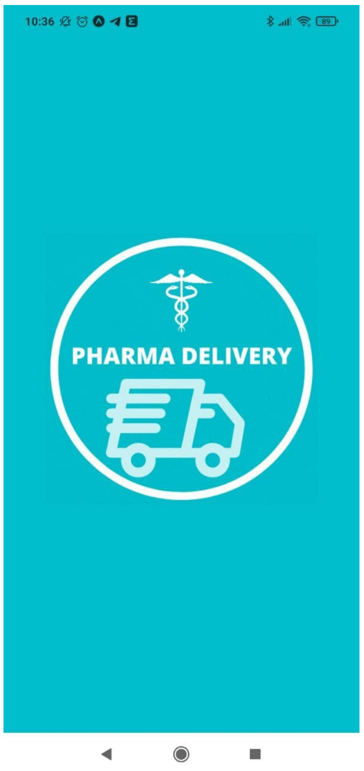
## 7.1 Fonts

**Helvetica Bold**

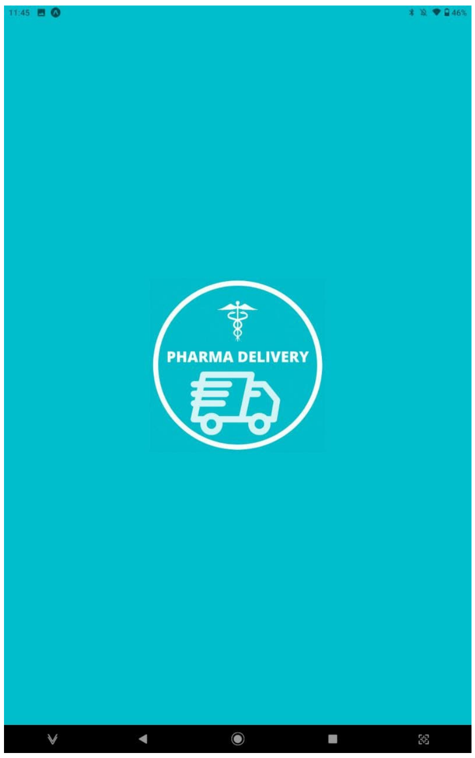
**Montserrat Bold**

Montserrat

## 7.2 Intro Screen

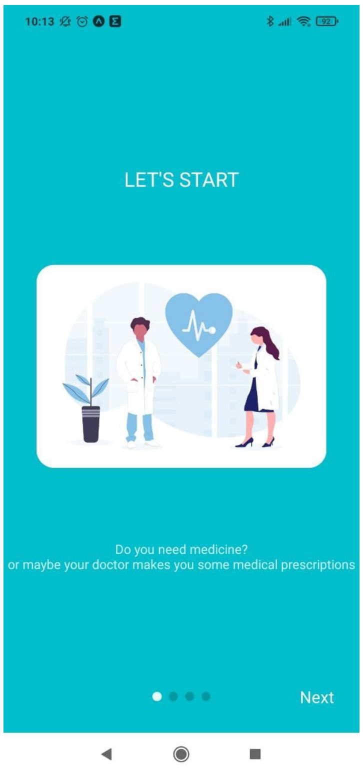


Redmi Note 7

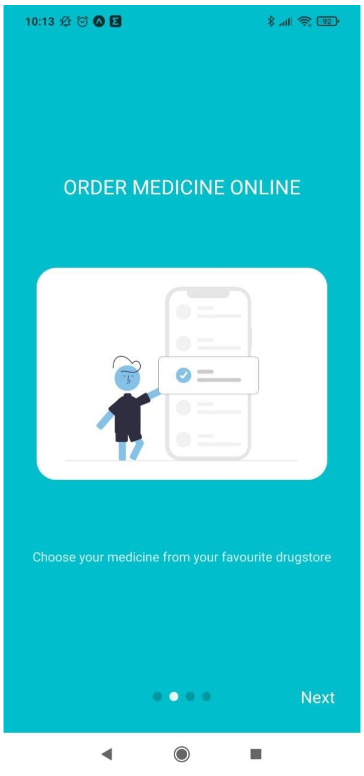


Teclast M30 10.1 inch

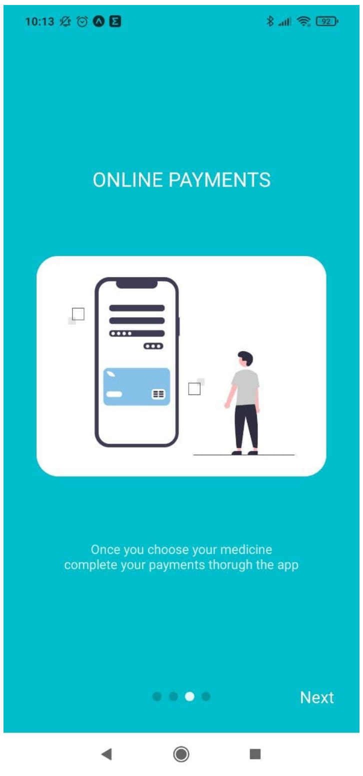
## 7.3 Welcome Screen



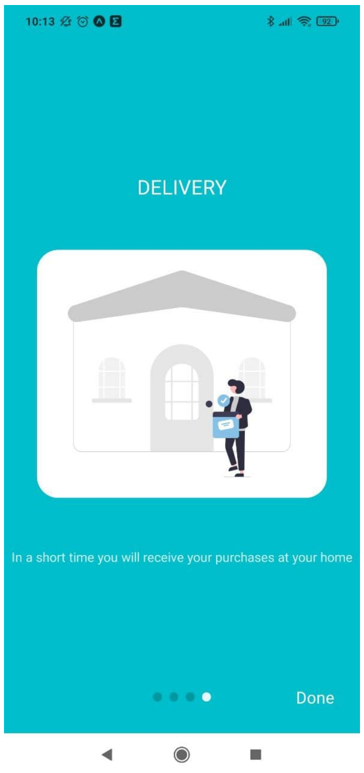
Welcome



Order


10:13
ONLINE PAYMENTS
Once you choose your medicine
complete your payments thorugh the app
Next

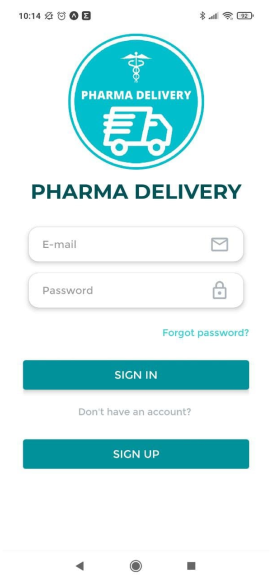
Payment


10:13
DELIVERY
In a short time you will receive your purchases at your home
Done

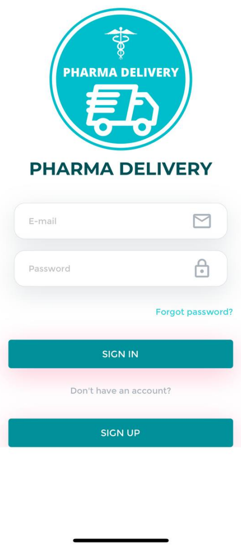
Delivery

## 7.4 Login Screen

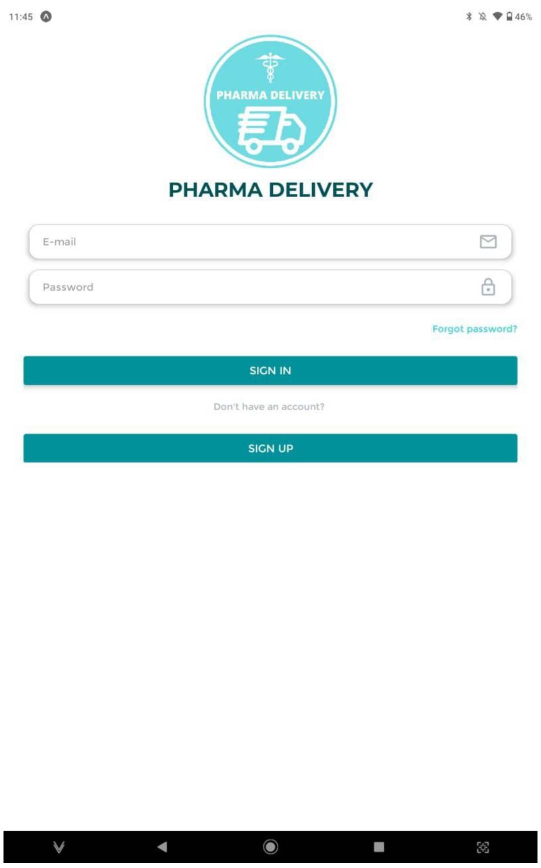
Our Users can login into the Application through this screen by filling the text input with their email and password. Whether they forgot their password, they can reset it by clicking on the "Forgot Password?" link. Whether credentials are wrong, an error message is shown.



Redmi Note 7



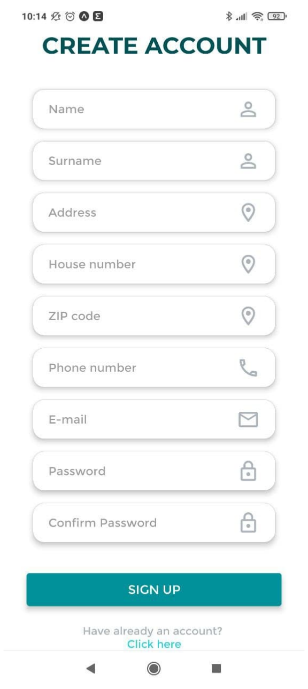
iPhone X



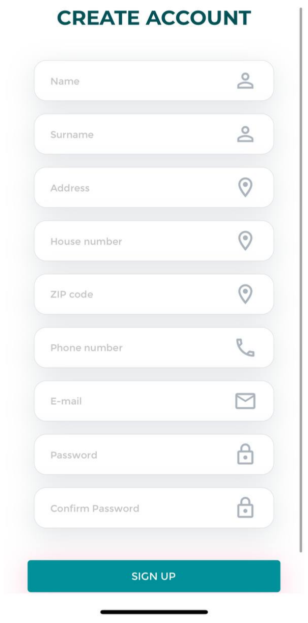
Teclast M30 10.1 inch

## 7.5 Registration Screen

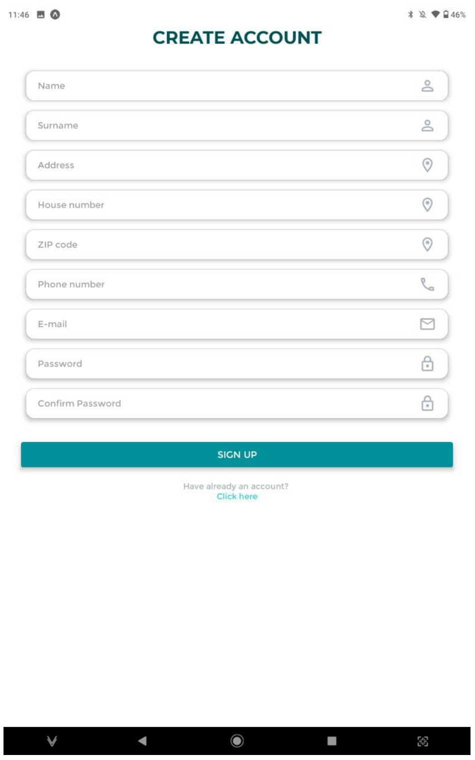
The following is the Registration screen. You must provide your data and a check is done on the user input. An invalid ZIP and an invalid e-mail will not be accepted, just like a weak password or a wrong repetition of it.



Redmi Note 7

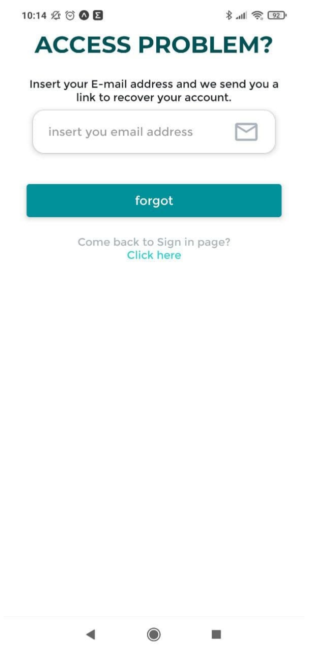


iPhone X



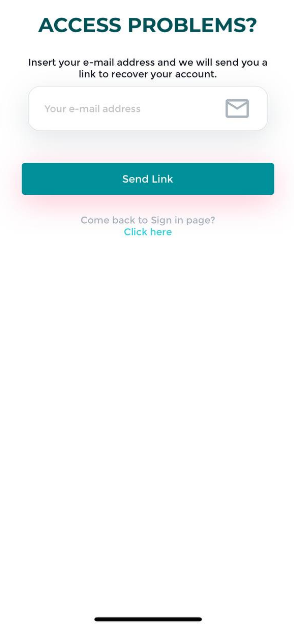
Teclast M30 10.1 inch

## 7.6 Forgot Password Screen


ACCESS PROBLEM?

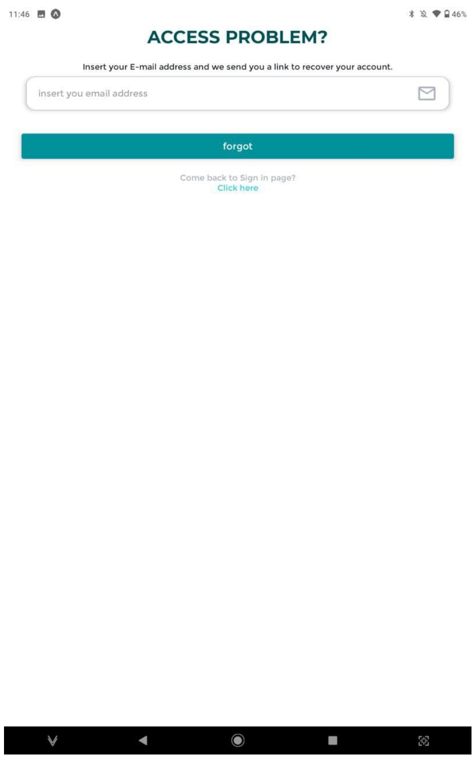
Insert your E-mail address and we send you a link to recover your account.

Redmi Note 7


ACCESS PROBLEMS?

Insert your e-mail address and we will send you a link to recover your account.

iPhoneX


ACCESS PROBLEM?

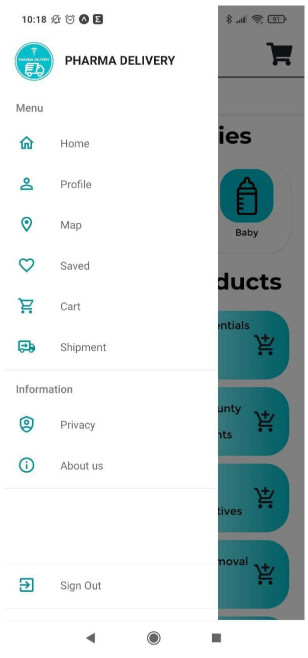
Insert your E-mail address and we send you a link to recover your account.

Teclast M30 10.1 inch

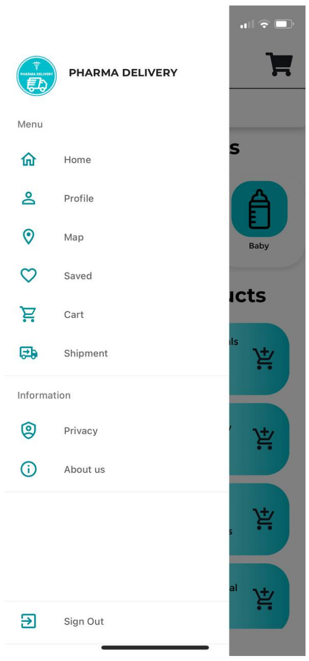
## 7.7 Drawer Menu

We chose to use a Drawer Navigator instead of a Bottom one because we need more space to display all the links to the screens. Here is a list of the links in our drawer menu:

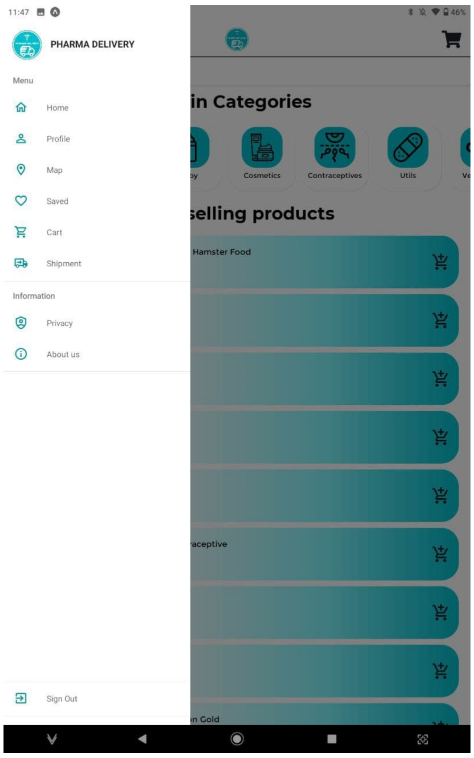
- **Home**
- **Profile**
- **Map**
- **Saved**
- **Cart**
- **Shipment**
- **Privacy**
- **About Us**
- **Sign Out**



Redmi Note 7



iPhoneX

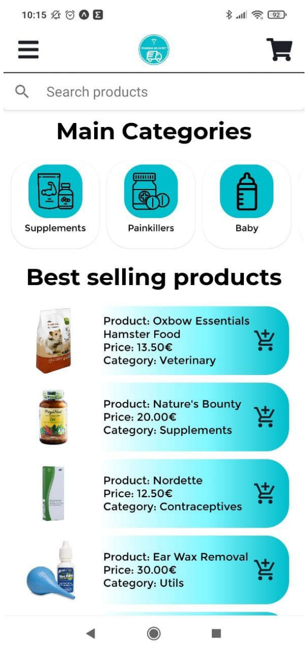


Teclast M30 10.1 inch

## 7.8 Home Screen

Home screen is made up of several components:

- **All products**: a list of available products is shown with the possibility to add product to the cart or to see the product's details.
- **Search bar**: Users can look for products through a search bar.
- **Categories**: Users can look for products by filtering it by categories.



Main Categories

Best selling products

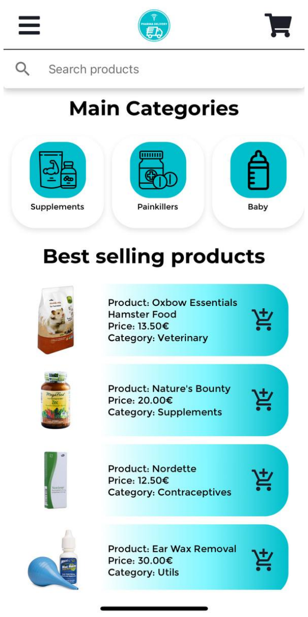
Product: Oxbow Essentials Hamster Food
Price: 13.50€
Category: Veterinary

Product: Nature's Bounty
Price: 20.00€
Category: Supplements

Product: Nordette
Price: 12.50€
Category: Contraceptives

Product: Ear Wax Removal
Price: 30.00€
Category: Utils

Redmi Note 7



Main Categories

Best selling products

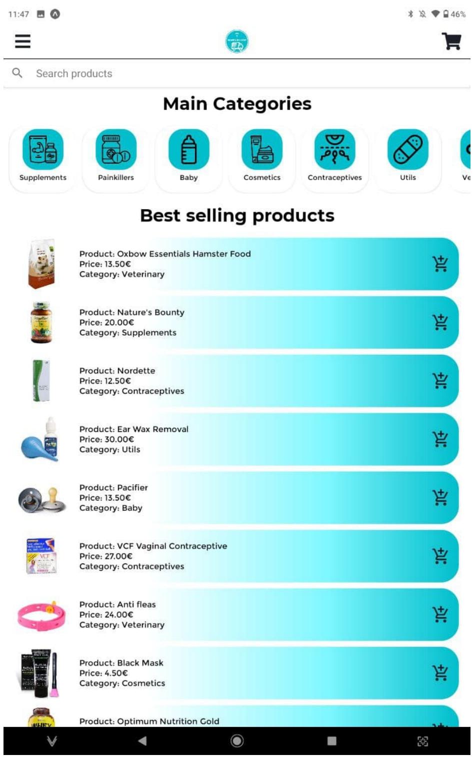
Product: Oxbow Essentials Hamster Food
Price: 13.50€
Category: Veterinary

Product: Nature's Bounty
Price: 20.00€
Category: Supplements

Product: Nordette
Price: 12.50€
Category: Contraceptives

Product: Ear Wax Removal
Price: 30.00€
Category: Utils

iPhoneX



Main Categories

Best selling products

Product: Oxbow Essentials Hamster Food
Price: 13.50€
Category: Veterinary

Product: Nature's Bounty
Price: 20.00€
Category: Supplements

Product: Nordette
Price: 12.50€
Category: Contraceptives

Product: Ear Wax Removal
Price: 30.00€
Category: Utils

Product: Pacifier
Price: 13.50€
Category: Baby

Product: VCF Vaginal Contraceptive
Price: 27.00€
Category: Contraceptives

Product: Anti fleas
Price: 24.00€
Category: Veterinary

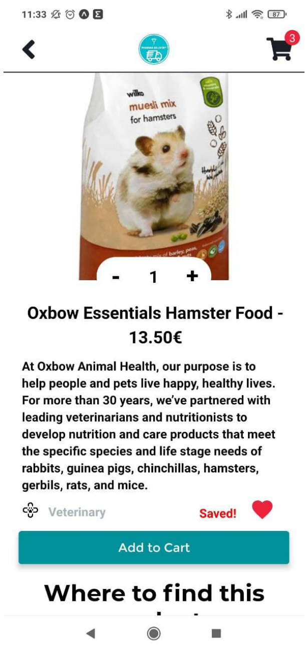
Product: Black Mask
Price: 4.50€
Category: Cosmetics

Product: Optimum Nutrition Gold

Teclast M30 10.1 inch

## 7.9 Product Screen

From this screen, Users can read the description (with general information, price and category) about a product, and they can also increase or decrease the quantity of the product to add to the cart. They can add the product to their favourite list and finally they can see in which pharmacy that specific product is available.


11:33

Oxbow Essentials Hamster Food - 13.50€

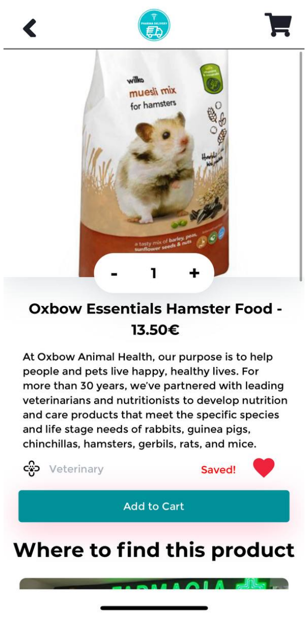
At Oxbow Animal Health, our purpose is to help people and pets live happy, healthy lives. For more than 30 years, we've partnered with leading veterinarians and nutritionists to develop nutrition and care products that meet the specific species and life stage needs of rabbits, guinea pigs, chinchillas, hamsters, gerbils, rats, and mice.

Veterinary Saved!

Add to Cart

Where to find this

Redmi Note 7



Oxbow Essentials Hamster Food - 13.50€

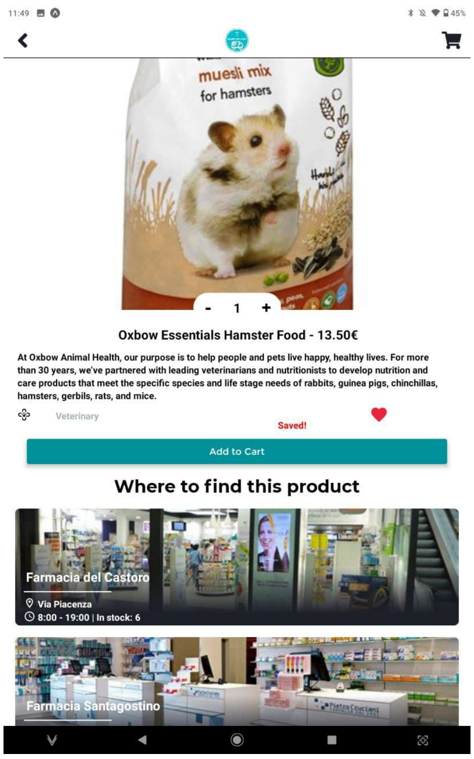
At Oxbow Animal Health, our purpose is to help people and pets live happy, healthy lives. For more than 30 years, we've partnered with leading veterinarians and nutritionists to develop nutrition and care products that meet the specific species and life stage needs of rabbits, guinea pigs, chinchillas, hamsters, gerbils, rats, and mice.

Veterinary Saved!

Add to Cart

Where to find this product

iPhone X


11:49 45%

Oxbow Essentials Hamster Food - 13.50€

At Oxbow Animal Health, our purpose is to help people and pets live happy, healthy lives. For more than 30 years, we've partnered with leading veterinarians and nutritionists to develop nutrition and care products that meet the specific species and life stage needs of rabbits, guinea pigs, chinchillas, hamsters, gerbils, rats, and mice.

Veterinary Saved!

Add to Cart

Where to find this product

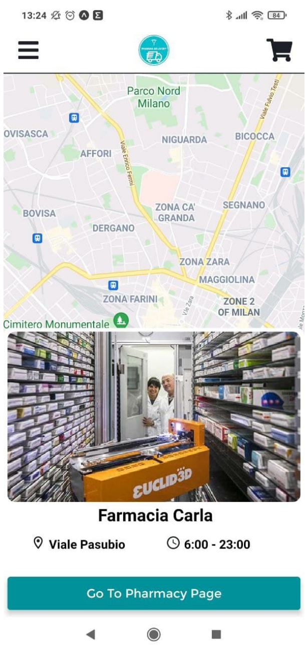
Farmacia del Castoro
Via Piacenza
8:00 - 19:00 | In stock: 6

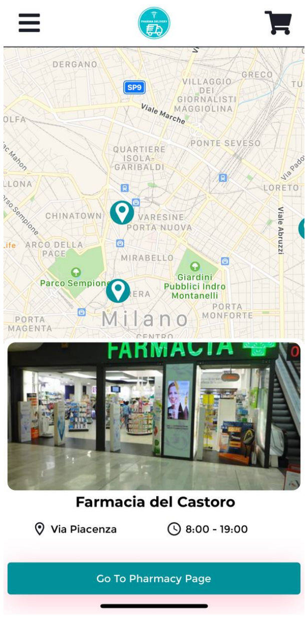
Farmacia Santagostino

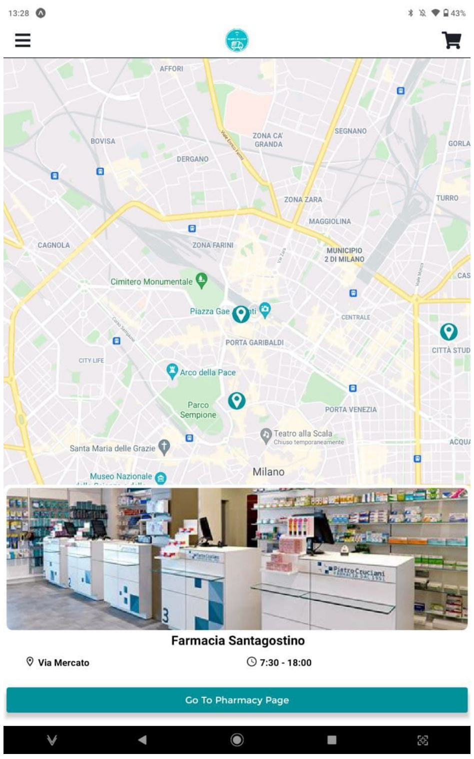
Teclast M30 10.1 inch3

## 7.10 Map Screen

From this screen Users can easily find nearby pharmacies and through a modal they can navigate to the pharmacy page or even just looking at the information.



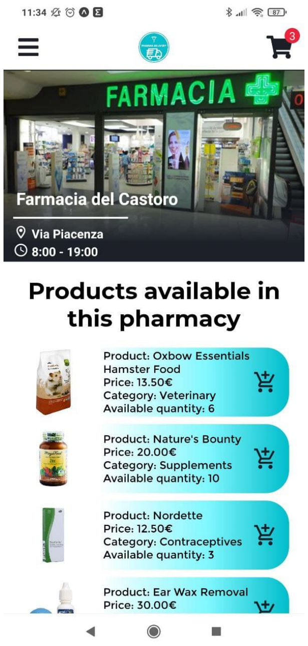




Redmi Note 7 iPhone X Teclast M30 10.1 inch3

## 7.11 Pharmacy Screen

In this screen Users can see all the available products in a specific pharmacy and they can also consult the timetable and the location of that pharmacy.


11:34

FARMACIA

Farmacia del Castoro

Via Piacenza

8:00 - 19:00

Products available in this pharmacy

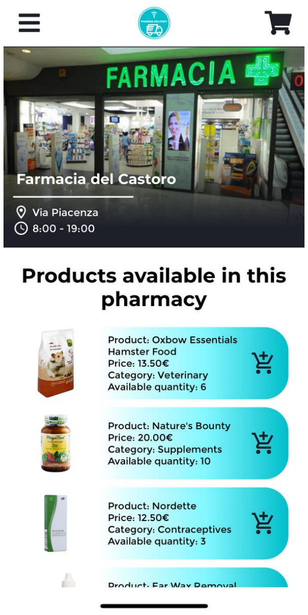
Product: Oxbow Essentials Hamster Food
Price: 13.50€
Category: Veterinary
Available quantity: 6

Product: Nature's Bounty
Price: 20.00€
Category: Supplements
Available quantity: 10

Product: Nordette
Price: 12.50€
Category: Contraceptives
Available quantity: 3

Product: Ear Wax Removal
Price: 30.00€

Redmi Note 7


FARMACIA

Farmacia del Castoro

Via Piacenza

8:00 - 19:00

Products available in this pharmacy

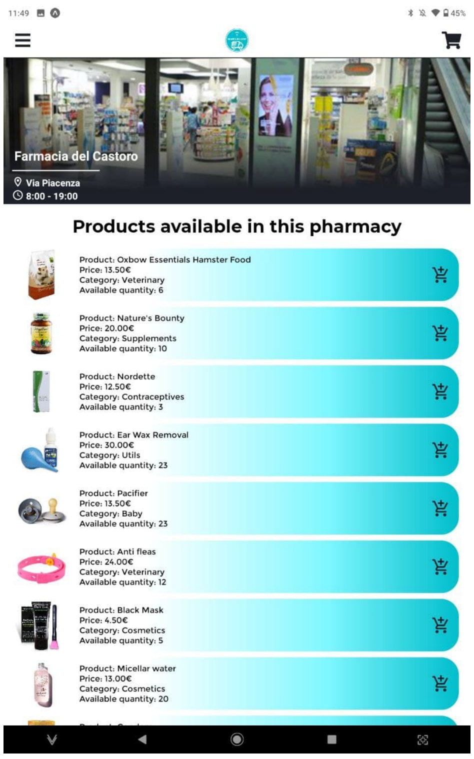
Product: Oxbow Essentials Hamster Food
Price: 13.50€
Category: Veterinary
Available quantity: 6

Product: Nature's Bounty
Price: 20.00€
Category: Supplements
Available quantity: 10

Product: Nordette
Price: 12.50€
Category: Contraceptives
Available quantity: 3

Product: Ear Wax Removal

iPhone X


11:49 45%

Farmacia del Castoro

Via Piacenza

8:00 - 19:00

Products available in this pharmacy

Product: Oxbow Essentials Hamster Food
Price: 13.50€
Category: Veterinary
Available quantity: 6

Product: Nature's Bounty
Price: 20.00€
Category: Supplements
Available quantity: 10

Product: Nordette
Price: 12.50€
Category: Contraceptives
Available quantity: 3

Product: Ear Wax Removal
Price: 30.00€
Category: Utils
Available quantity: 23

Product: Pacifier
Price: 13.50€
Category: Baby
Available quantity: 23

Product: Anti fleas
Price: 24.00€
Category: Veterinary
Available quantity: 12

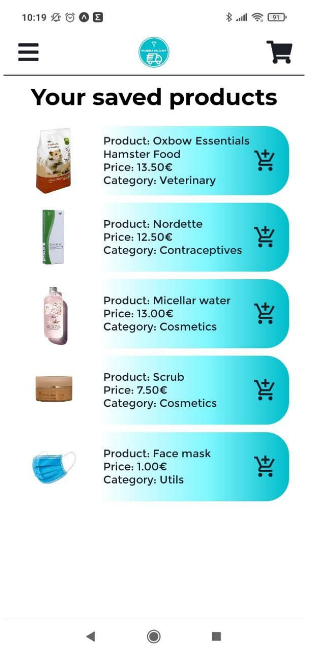
Product: Black Mask
Price: 4.50€
Category: Cosmetics
Available quantity: 5

Product: Micellar water
Price: 13.00€
Category: Cosmetics
Available quantity: 20

Teclast M30 10.1 inch3

## 7.12 Saved Products Screen

In this screen Users can see all pre-saved products; it's a kind of favourite list that helps Users finding the products they buy more often.



Your saved products

Product: Oxbow Essentials Hamster Food
Price: 13.50€
Category: Veterinary

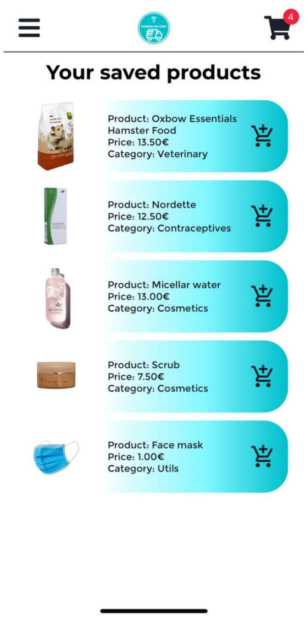
Product: Nordette
Price: 12.50€
Category: Contraceptives

Product: Micellar water
Price: 13.00€
Category: Cosmetics

Product: Scrub
Price: 7.50€
Category: Cosmetics

Product: Face mask
Price: 1.00€
Category: Utils

Redmi Note 7



Your saved products

Product: Oxbow Essentials Hamster Food
Price: 13.50€
Category: Veterinary

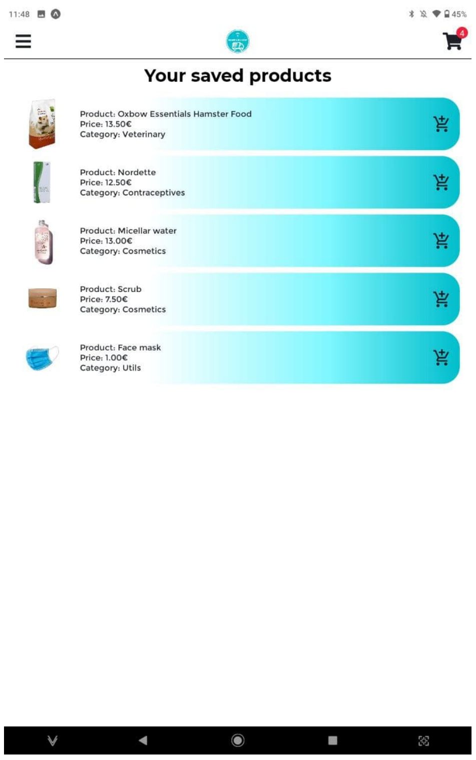
Product: Nordette
Price: 12.50€
Category: Contraceptives

Product: Micellar water
Price: 13.00€
Category: Cosmetics

Product: Scrub
Price: 7.50€
Category: Cosmetics

Product: Face mask
Price: 1.00€
Category: Utils

iPhone X



Your saved products

Product: Oxbow Essentials Hamster Food
Price: 13.50€
Category: Veterinary

Product: Nordette
Price: 12.50€
Category: Contraceptives

Product: Micellar water
Price: 13.00€
Category: Cosmetics

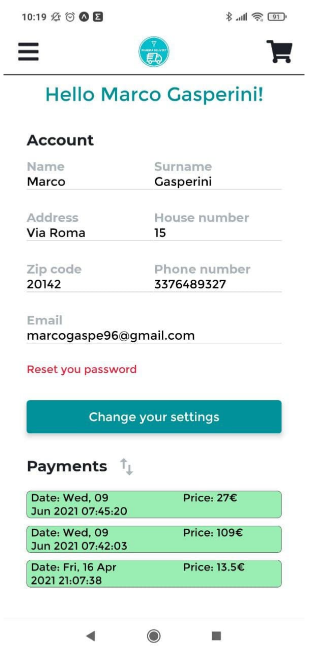
Product: Scrub
Price: 7.50€
Category: Cosmetics

Product: Face mask
Price: 1.00€
Category: Utils

Teclast M30 10.1 inch3

## 7.13 Profile Screen

In this screen Users can see their old purchases and they can manage (see and modify) their personal data.


10:19

Hello Marco Gasperini!

Account

Name: Marco | Surname: Gasperini

Address: Via Roma | House number: 15

Zip code: 20142 | Phone number: 3376489327

Email: marcogaspe96@gmail.com

Reset you password

Change your settings

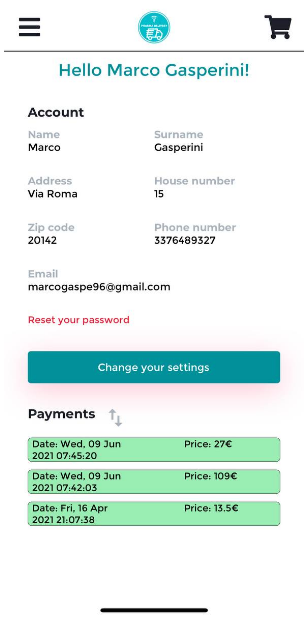
Payments

Date: Wed, 09 Jun 2021 07:45:20 Price: 27€

Date: Wed, 09 Jun 2021 07:42:03 Price: 109€

Date: Fri, 16 Apr 2021 21:07:38 Price: 13.5€

Redmi Note 7


Hello Marco Gasperini!

Account

Name: Marco | Surname: Gasperini

Address: Via Roma | House number: 15

Zip code: 20142 | Phone number: 3376489327

Email: marcogaspe96@gmail.com

Reset your password

Change your settings

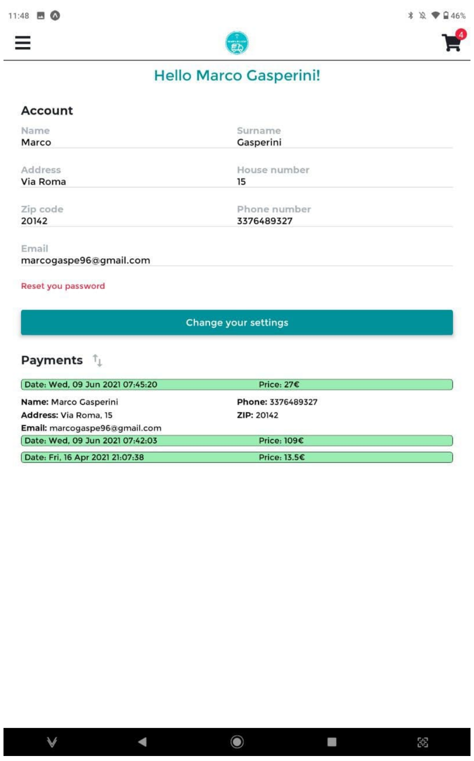
Payments

Date: Wed, 09 Jun 2021 07:45:20 Price: 27€

Date: Wed, 09 Jun 2021 07:42:03 Price: 109€

Date: Fri, 16 Apr 2021 21:07:38 Price: 13.5€

iPhone X


11:48 46%

Hello Marco Gasperini!

Account

Name: Marco | Surname: Gasperini

Address: Via Roma | House number: 15

Zip code: 20142 | Phone number: 3376489327

Email: marcogaspe96@gmail.com

Reset you password

Change your settings

Payments

Date: Wed, 09 Jun 2021 07:45:20 Price: 27€

**Name:** Marco Gasperini **Phone:** 3376489327

**Address:** Via Roma, 15 **ZIP:** 20142

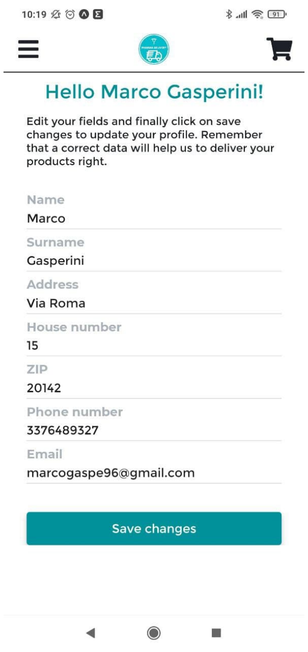
**Email:** marcogaspe96@gmail.com

Date: Wed, 09 Jun 2021 07:42:03 Price: 109€

Date: Fri, 16 Apr 2021 21:07:38 Price: 13.5€

Teclast M30 10.1 inch3

Clicking on "Change your settings" Users will proceed to change their personal data and they will see this screen:


10:19

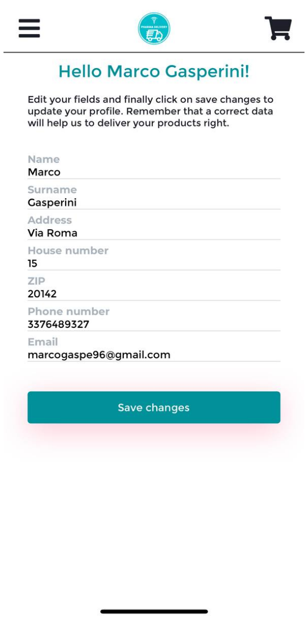
Hello Marco Gasperini!

Edit your fields and finally click on save changes to update your profile. Remember that a correct data will help us to deliver your products right.

Name
Marco
Surname
Gasperini
Address
Via Roma
House number
15
ZIP
20142
Phone number
3376489327
Email
marcogaspe96@gmail.com

Save changes

Redmi Note 7

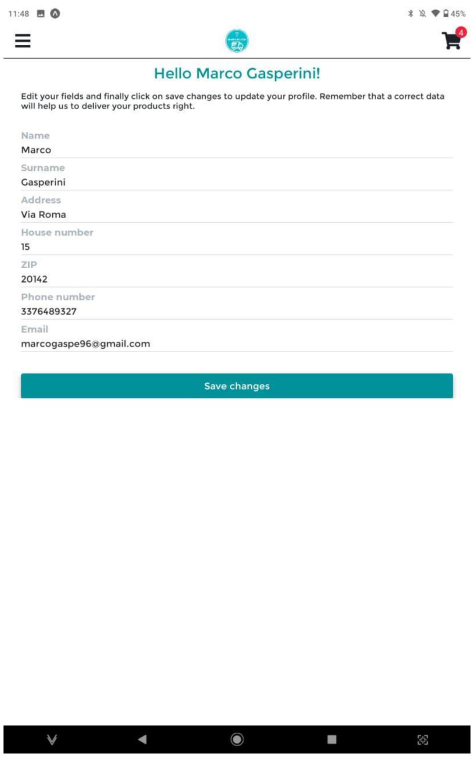

Hello Marco Gasperini!

Edit your fields and finally click on save changes to update your profile. Remember that a correct data will help us to deliver your products right.

Name
Marco
Surname
Gasperini
Address
Via Roma
House number
15
ZIP
20142
Phone number
3376489327
Email
marcogaspe96@gmail.com

Save changes

iPhone X


11:48 45%

Hello Marco Gasperini!

Edit your fields and finally click on save changes to update your profile. Remember that a correct data will help us to deliver your products right.

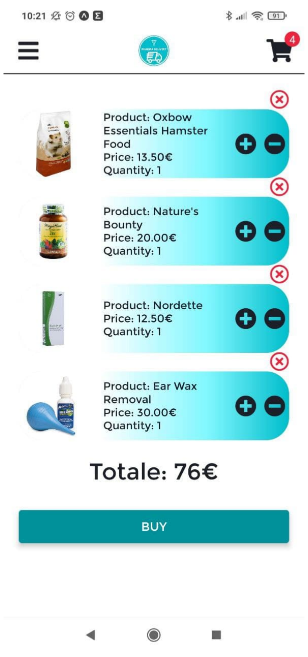
Name
Marco
Surname
Gasperini
Address
Via Roma
House number
15
ZIP
20142
Phone number
3376489327
Email
marcogaspe96@gmail.com

Save changes

Teclast M30 10.1 inch3

## 7.14 Shopping Cart Screen

In this screen Users can see all the products added to the shopping cart and they can proceed, by clicking a button, to the payment.


10:21

Product: Oxbow Essentials Hamster Food
Price: 13.50€
Quantity: 1

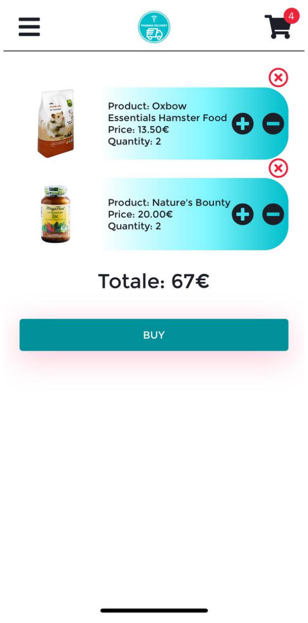
Product: Nature's Bounty
Price: 20.00€
Quantity: 1

Product: Nordette
Price: 12.50€
Quantity: 1

Product: Ear Wax Removal
Price: 30.00€
Quantity: 1

Totale: 76€

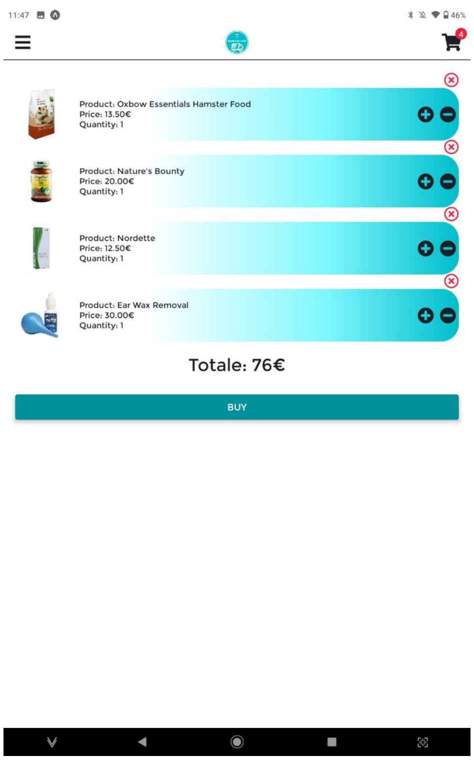
Redmi Note 7


Product: Oxbow Essentials Hamster Food
Price: 13.50€
Quantity: 2

Product: Nature's Bounty
Price: 20.00€
Quantity: 2

Totale: 67€

iPhone X


11:47 46%

Product: Oxbow Essentials Hamster Food
Price: 13.50€
Quantity: 1

Product: Nature's Bounty
Price: 20.00€
Quantity: 1

Product: Nordette
Price: 12.50€
Quantity: 1

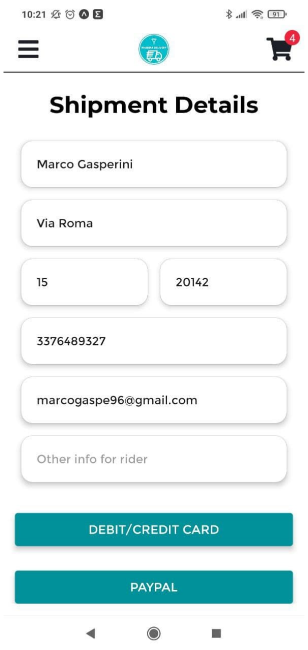
Product: Ear Wax Removal
Price: 30.00€
Quantity: 1

Totale: 76€

Teclast M30 10.1 inch3

## 7.15 Shipment Detail Screen

When Users proceed to payments after clicking on ”Buy” in the Shopping Cart Screen they are redirected to the Shipment Detail Screen where they are asked to provide some useful information for the Rider (address, phone number, other useful information).



Shipment Details

Marco Gasperini

Via Roma

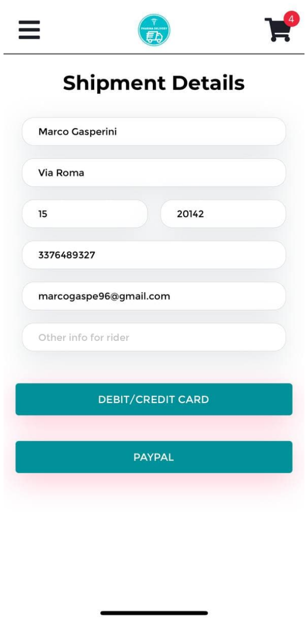
15 20142

3376489327

marcogaspe96@gmail.com

Other info for rider

Redmi Note 7



Shipment Details

Marco Gasperini

Via Roma

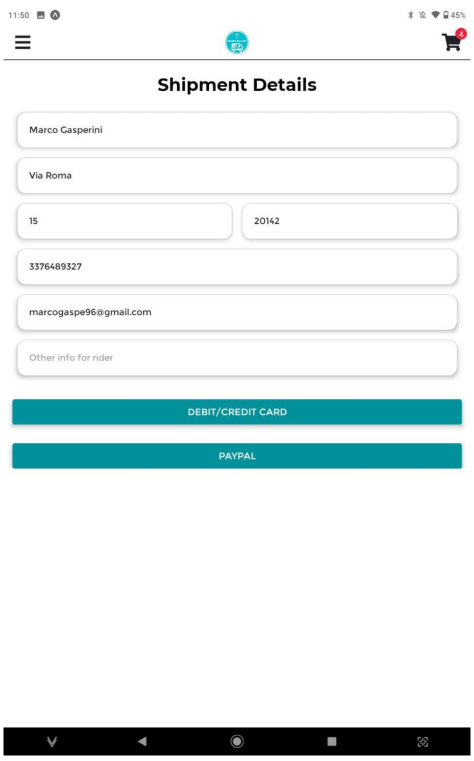
15 20142

3376489327

marcogaspe96@gmail.com

Other info for rider

iPhone X



Shipment Details

Marco Gasperini

Via Roma

15 20142

3376489327

marcogaspe96@gmail.com

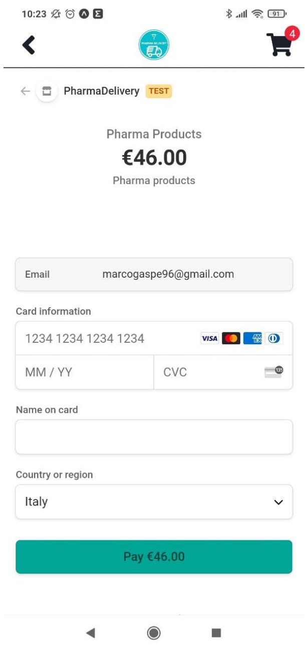
Other info for rider

Teclast M30 10.1 inch3

## 7.16 Payment Methods Screen

In PharmaDelivery application we added two payment methods. Both of them are provided through a Web View component.

### 7.16.1 Stripe


10:23

4

PharmaDelivery TEST

Pharma Products

€46.00

Pharma products

Email marcogaspe96@gmail.com

Card information

1234 1234 1234 1234

MM / YY CVC

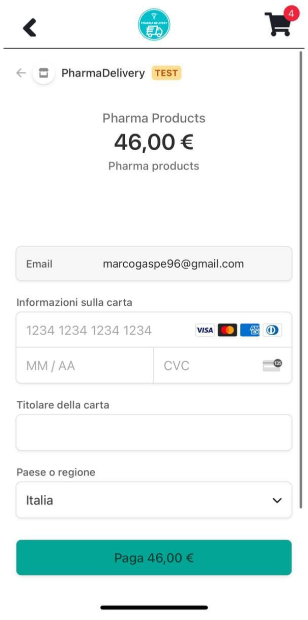
Name on card

Country or region

Italy

Pay €46.00

Redmi Note 7


4

PharmaDelivery TEST

Pharma Products

46,00 €

Pharma products

Email marcogaspe96@gmail.com

Informazioni sulla carta

1234 1234 1234 1234

MM / AA CVC

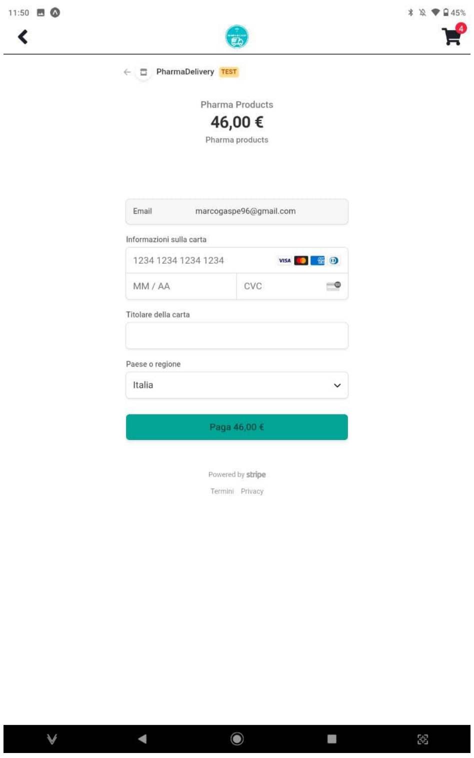
Titolare della carta

Paese o regione

Italia

Paga 46,00 €

iPhone X


11:50 45%

4

PharmaDelivery TEST

Pharma Products

46,00 €

Pharma products

Email marcogaspe96@gmail.com

Informazioni sulla carta

1234 1234 1234 1234

MM / AA CVC

Titolare della carta

Paese o regione

Italia

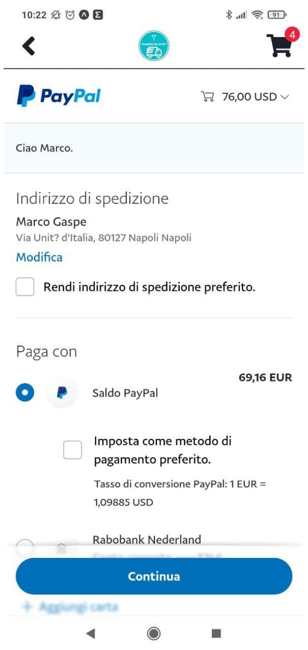
Paga 46,00 €

Powered by stripe

Termini Privacy

Teclast M30 10.1 inch3

### 7.16.2 Paypal


10:22

PayPal 76,00 USD

Ciao Marco.

Indirizzo di spedizione

Marco Gaspe

Via Unit? d'Italia, 80127 Napoli Napoli

Modifica

Rendi indirizzo di spedizione preferito.

Paga con

Saldo PayPal 69,16 EUR

Imposta come metodo di pagamento preferito.

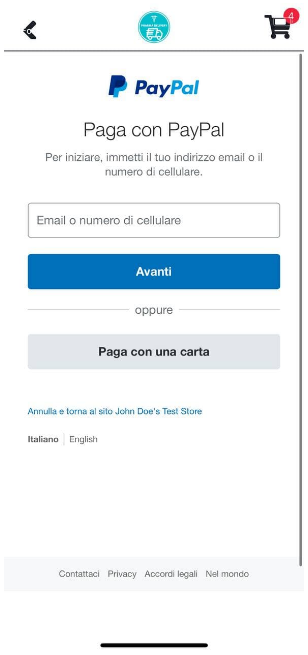
Tasso di conversione PayPal: 1 EUR = 1,09885 USD

Rabobank Nederland

Continua

+ Aggiungi carta

Redmi Note 7


PayPal

Paga con PayPal

Per iniziare, immetti il tuo indirizzo email o il numero di cellulare.

Email o numero di cellulare

Avanti

oppure

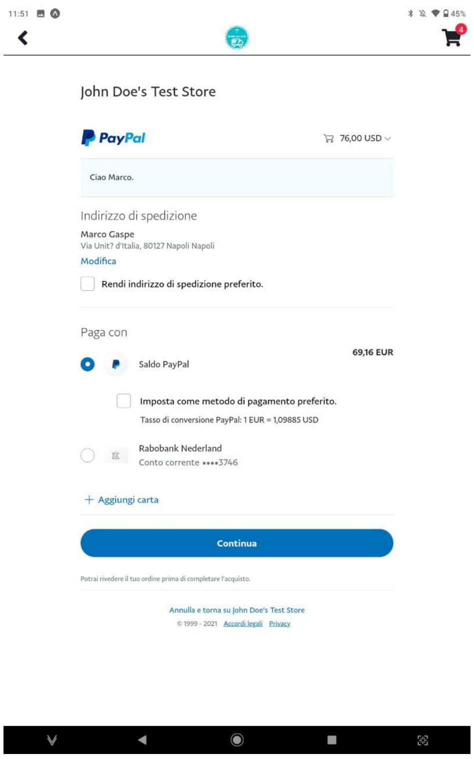
Paga con una carta

Annulla e torna al sito John Doe's Test Store

Italiano | English

Contattaci Privacy Accordi legali Nel mondo

iPhone X


11:51 45%

John Doe's Test Store

PayPal 76,00 USD

Ciao Marco.

Indirizzo di spedizione

Marco Gaspe

Via Unit? d'Italia, 80127 Napoli Napoli

Modifica

Rendi indirizzo di spedizione preferito.

Paga con

Saldo PayPal 69,16 EUR

Imposta come metodo di pagamento preferito.

Tasso di conversione PayPal: 1 EUR = 1,09885 USD

Rabobank Nederland

Conto corrente ••••3746

+ Aggiungi carta

Continua

Potrai rivedere il tuo ordine prima di completare l'acquisto.

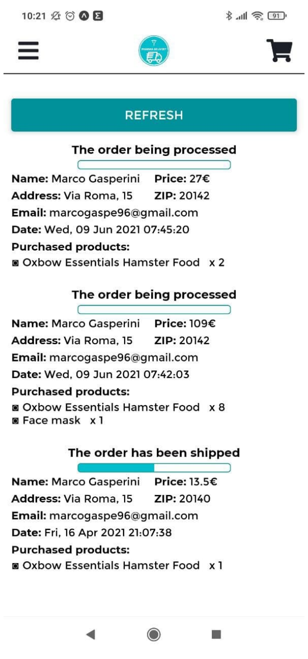
Annulla e torna su John Doe's Test Store

© 1999 - 2021 Accordi legali Privacy

Teclast M30 10.1 inch3

## 7.17 Shipment Screen

In this screen Users can browse the history of their purchases with all the related details and they can also see the progress of their shipment.



The order being processed

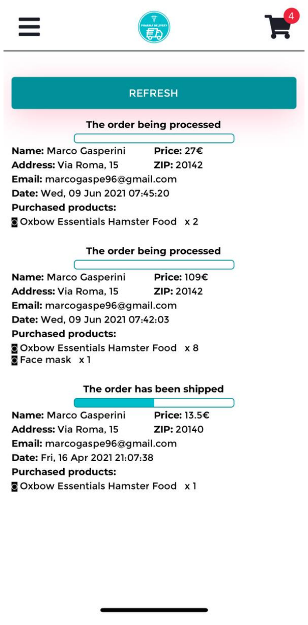
**Name:** Marco Gasperini **Price:** 27€
**Address:** Via Roma, 15 **ZIP:** 20142
**Email:** marcogaspe96@gmail.com
**Date:** Wed, 09 Jun 2021 07:45:20
**Purchased products:**
Oxbow Essentials Hamster Food x 2

The order being processed

**Name:** Marco Gasperini **Price:** 109€
**Address:** Via Roma, 15 **ZIP:** 20142
**Email:** marcogaspe96@gmail.com
**Date:** Wed, 09 Jun 2021 07:42:03
**Purchased products:**
Oxbow Essentials Hamster Food x 8
Face mask x 1

The order has been shipped

**Name:** Marco Gasperini **Price:** 13.5€
**Address:** Via Roma, 15 **ZIP:** 20140
**Email:** marcogaspe96@gmail.com
**Date:** Fri, 16 Apr 2021 21:07:38
**Purchased products:**
Oxbow Essentials Hamster Food x 1



The order being processed

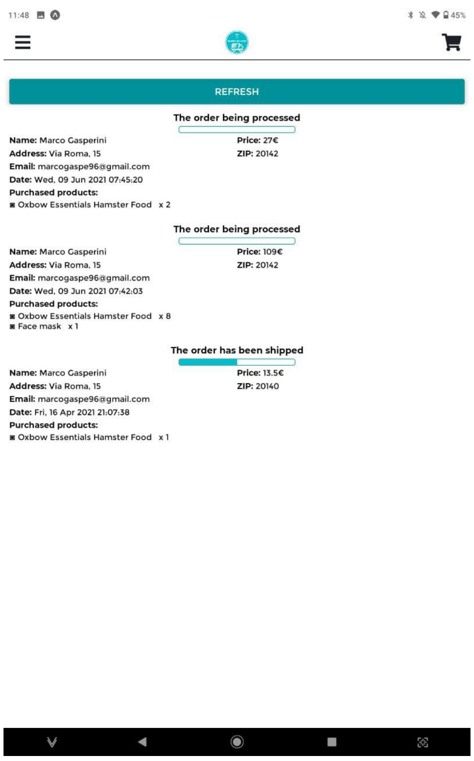
**Name:** Marco Gasperini **Price:** 27€
**Address:** Via Roma, 15 **ZIP:** 20142
**Email:** marcogaspe96@gmail.com
**Date:** Wed, 09 Jun 2021 07:45:20
**Purchased products:**
Oxbow Essentials Hamster Food x 2

The order being processed

**Name:** Marco Gasperini **Price:** 109€
**Address:** Via Roma, 15 **ZIP:** 20142
**Email:** marcogaspe96@gmail.com
**Date:** Wed, 09 Jun 2021 07:42:03
**Purchased products:**
Oxbow Essentials Hamster Food x 8
Face mask x 1

The order has been shipped

**Name:** Marco Gasperini **Price:** 13.5€
**Address:** Via Roma, 15 **ZIP:** 20140
**Email:** marcogaspe96@gmail.com
**Date:** Fri, 16 Apr 2021 21:07:38
**Purchased products:**
Oxbow Essentials Hamster Food x 1



The order being processed

**Name:** Marco Gasperini **Price:** 27€
**Address:** Via Roma, 15 **ZIP:** 20142
**Email:** marcogaspe96@gmail.com
**Date:** Wed, 09 Jun 2021 07:45:20
**Purchased products:**
Oxbow Essentials Hamster Food x 2

The order being processed

**Name:** Marco Gasperini **Price:** 109€
**Address:** Via Roma, 15 **ZIP:** 20142
**Email:** marcogaspe96@gmail.com
**Date:** Wed, 09 Jun 2021 07:42:03
**Purchased products:**
Oxbow Essentials Hamster Food x 8
Face mask x 1

The order has been shipped

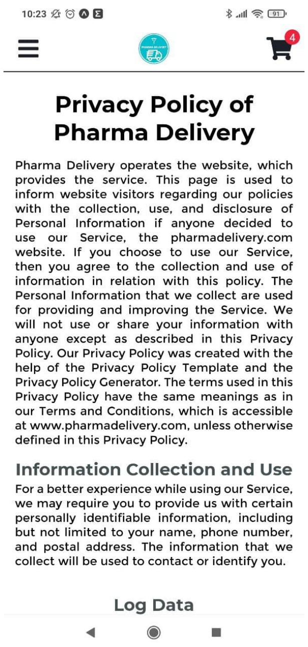
**Name:** Marco Gasperini **Price:** 13.5€
**Address:** Via Roma, 15 **ZIP:** 20140
**Email:** marcogaspe96@gmail.com
**Date:** Fri, 16 Apr 2021 21:07:38
**Purchased products:**
Oxbow Essentials Hamster Food x 1

Redmi Note 7 iPhone X Teclast M30 10.1 inch3

## 7.18 Information Screen

We added two extra pages where Users can read details about the application and privacy terms.

### 7.18.1 Privacy Screen


10:23

**Privacy Policy of Pharma Delivery**

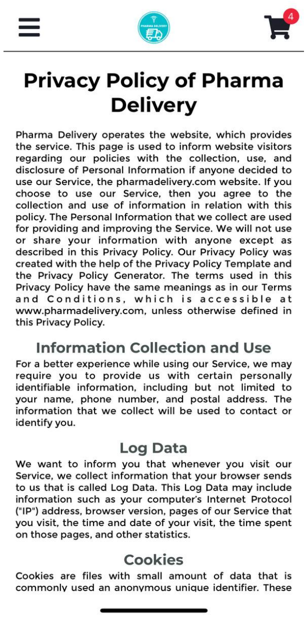
Pharma Delivery operates the website, which provides the service. This page is used to inform website visitors regarding our policies with the collection, use, and disclosure of Personal Information if anyone decided to use our Service, the pharmadelivery.com website. If you choose to use our Service, then you agree to the collection and use of information in relation with this policy. The Personal Information that we collect are used for providing and improving the Service. We will not use or share your information with anyone except as described in this Privacy Policy. Our Privacy Policy was created with the help of the Privacy Policy Template and the Privacy Policy Generator. The terms used in this Privacy Policy have the same meanings as in our Terms and Conditions, which is accessible at www.pharmadelivery.com, unless otherwise defined in this Privacy Policy.

**Information Collection and Use**

For a better experience while using our Service, we may require you to provide us with certain personally identifiable information, including but not limited to your name, phone number, and postal address. The information that we collect will be used to contact or identify you.

**Log Data**

Redmi Note 7


**Privacy Policy of Pharma Delivery**

Pharma Delivery operates the website, which provides the service. This page is used to inform website visitors regarding our policies with the collection, use, and disclosure of Personal Information if anyone decided to use our Service, the pharmadelivery.com website. If you choose to use our Service, then you agree to the collection and use of information in relation with this policy. The Personal Information that we collect are used for providing and improving the Service. We will not use or share your information with anyone except as described in this Privacy Policy. Our Privacy Policy was created with the help of the Privacy Policy Template and the Privacy Policy Generator. The terms used in this Privacy Policy have the same meanings as in our Terms and Conditions, which is accessible at www.pharmadelivery.com, unless otherwise defined in this Privacy Policy.

**Information Collection and Use**

For a better experience while using our Service, we may require you to provide us with certain personally identifiable information, including but not limited to your name, phone number, and postal address. The information that we collect will be used to contact or identify you.

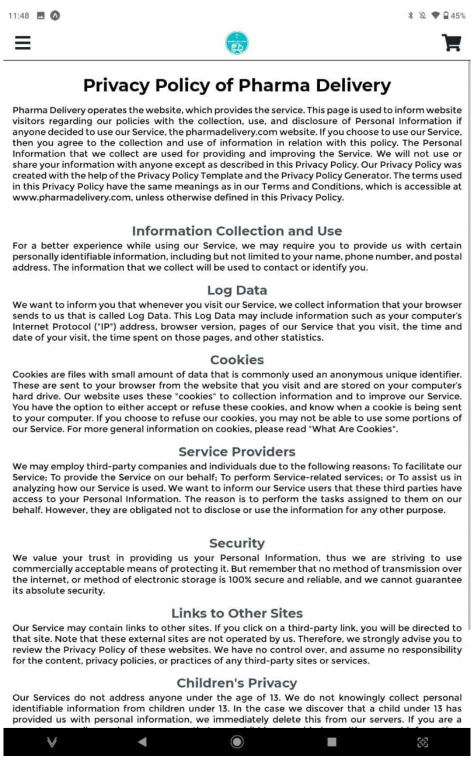
**Log Data**

We want to inform you that whenever you visit our Service, we collect information that your browser sends to us that is called Log Data. This Log Data may include information such as your computer's Internet Protocol ("IP") address, browser version, pages of our Service that you visit, the time and date of your visit, the time spent on those pages, and other statistics.

**Cookies**

Cookies are files with small amount of data that is commonly used an anonymous unique identifier. These

iPhone X


11:48 45%

**Privacy Policy of Pharma Delivery**

Pharma Delivery operates the website, which provides the service. This page is used to inform website visitors regarding our policies with the collection, use, and disclosure of Personal Information if anyone decided to use our Service, the pharmadelivery.com website. If you choose to use our Service, then you agree to the collection and use of information in relation with this policy. The Personal Information that we collect are used for providing and improving the Service. We will not use or share your information with anyone except as described in this Privacy Policy. Our Privacy Policy was created with the help of the Privacy Policy Template and the Privacy Policy Generator. The terms used in this Privacy Policy have the same meanings as in our Terms and Conditions, which is accessible at www.pharmadelivery.com, unless otherwise defined in this Privacy Policy.

**Information Collection and Use**

For a better experience while using our Service, we may require you to provide us with certain personally identifiable information, including but not limited to your name, phone number, and postal address. The information that we collect will be used to contact or identify you.

**Log Data**

We want to inform you that whenever you visit our Service, we collect information that your browser sends to us that is called Log Data. This Log Data may include information such as your computer's Internet Protocol ("IP") address, browser version, pages of our Service that you visit, the time and date of your visit, the time spent on those pages, and other statistics.

**Cookies**

Cookies are files with small amount of data that is commonly used an anonymous unique identifier. These are sent to your browser from the website that you visit and are stored on your computer's hard drive. Our website uses these "cookies" to collection information and to improve our Service. You have the option to either accept or refuse these cookies, and know when a cookie is being sent to your computer. If you choose to refuse our cookies, you may not be able to use some portions of our Service. For more general information on cookies, please read "What Are Cookies".

**Service Providers**

We may employ third-party companies and individuals due to the following reasons: To facilitate our Service; To provide the Service on our behalf; To perform Service-related services; or To assist us in analyzing how our Service is used. We want to inform our Service users that these third parties have access to your Personal Information. The reason is to perform the tasks assigned to them on our behalf. However, they are obligated not to disclose or use the information for any other purpose.

**Security**

We value your trust in providing us your Personal Information, thus we are striving to use commercially acceptable means of protecting it. But remember that no method of transmission over the internet, or method of electronic storage is 100% secure and reliable, and we cannot guarantee its absolute security.

**Links to Other Sites**

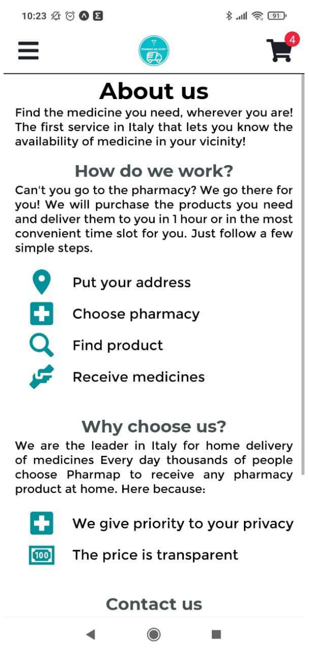
Our Service may contain links to other sites. If you click on a third-party link, you will be directed to that site. Note that these external sites are not operated by us. Therefore, we strongly advise you to review the Privacy Policy of these websites. We have no control over, and assume no responsibility for the content, privacy policies, or practices of any third-party sites or services.

**Children's Privacy**

Our Services do not address anyone under the age of 13. We do not knowingly collect personal identifiable information from children under 13. In the case we discover that a child under 13 has provided us with personal information, we immediately delete this from our servers. If you are a

Teclast M30 10.1 inch3

### 7.18.2 About Us Screen


10:23

4

About us

Find the medicine you need, wherever you are! The first service in Italy that lets you know the availability of medicine in your vicinity!

How do we work?

Can't you go to the pharmacy? We go there for you! We will purchase the products you need and deliver them to you in 1 hour or in the most convenient time slot for you. Just follow a few simple steps.

Put your address

Choose pharmacy

Find product

Receive medicines

Why choose us?

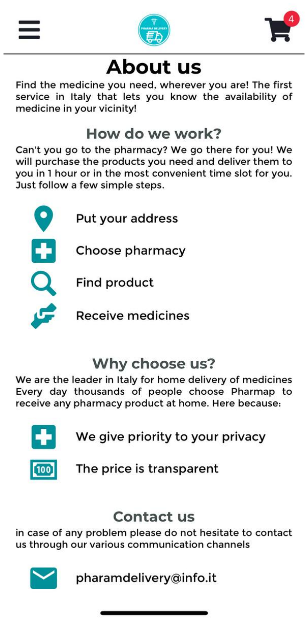
We are the leader in Italy for home delivery of medicines Every day thousands of people choose Pharmap to receive any pharmacy product at home. Here because:

We give priority to your privacy

The price is transparent

Contact us

Redmi Note 7


4

About us

Find the medicine you need, wherever you are! The first service in Italy that lets you know the availability of medicine in your vicinity!

How do we work?

Can't you go to the pharmacy? We go there for you! We will purchase the products you need and deliver them to you in 1 hour or in the most convenient time slot for you. Just follow a few simple steps.

Put your address

Choose pharmacy

Find product

Receive medicines

Why choose us?

We are the leader in Italy for home delivery of medicines Every day thousands of people choose Pharmap to receive any pharmacy product at home. Here because:

We give priority to your privacy

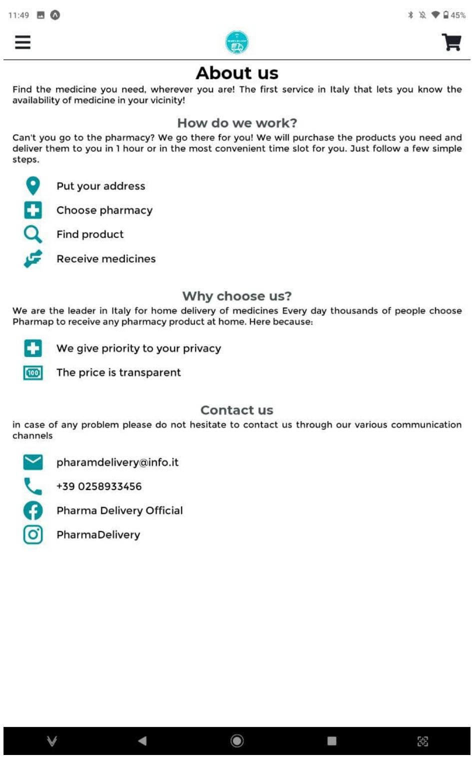
The price is transparent

Contact us

in case of any problem please do not hesitate to contact us through our various communication channels

pharamdelivery@info.it

iPhone X


11:49 45%

About us

Find the medicine you need, wherever you are! The first service in Italy that lets you know the availability of medicine in your vicinity!

How do we work?

Can't you go to the pharmacy? We go there for you! We will purchase the products you need and deliver them to you in 1 hour or in the most convenient time slot for you. Just follow a few simple steps.

Put your address

Choose pharmacy

Find product

Receive medicines

Why choose us?

We are the leader in Italy for home delivery of medicines Every day thousands of people choose Pharmap to receive any pharmacy product at home. Here because:

We give priority to your privacy

The price is transparent

Contact us

in case of any problem please do not hesitate to contact us through our various communication channels

pharamdelivery@info.it

+39 0258933456

Pharma Delivery Official

PharmaDelivery

Teclast M30 10.1 inch3

# 8 Implementation and Integration

We can split this section into three main sub-sections:

## 8.1 Front End implementation

First of all we created all the needed screens with a very basic design: we were focused on providing a good User experience flow by first identifying all the best components to insert. After that, we started working on Wireframes and only after this phase we started thinking about colors, shapes of elements and other details that represent the current UI. This is the very common development flow in Mobile Applications, and works very well when managing a lot of screens and User flow possibilities.

## 8.2 Back End implementation

We created the Back end skeleton of the system, by configuring Firebase Real-time Database in order to store every needed information. In particular, we started by organizing and adding some products and users information, and then we added the purchases and the pharmacies.

## 8.3 Front End and Back End integration

For the integration process we decided to go for a Bottom Up approach. We started by developing individual modules (both Front End and Back End) and then building up the Application. This way we created individual sub-systems that have been put together step by step, generating the final result that we achieved.

# 9 Testing

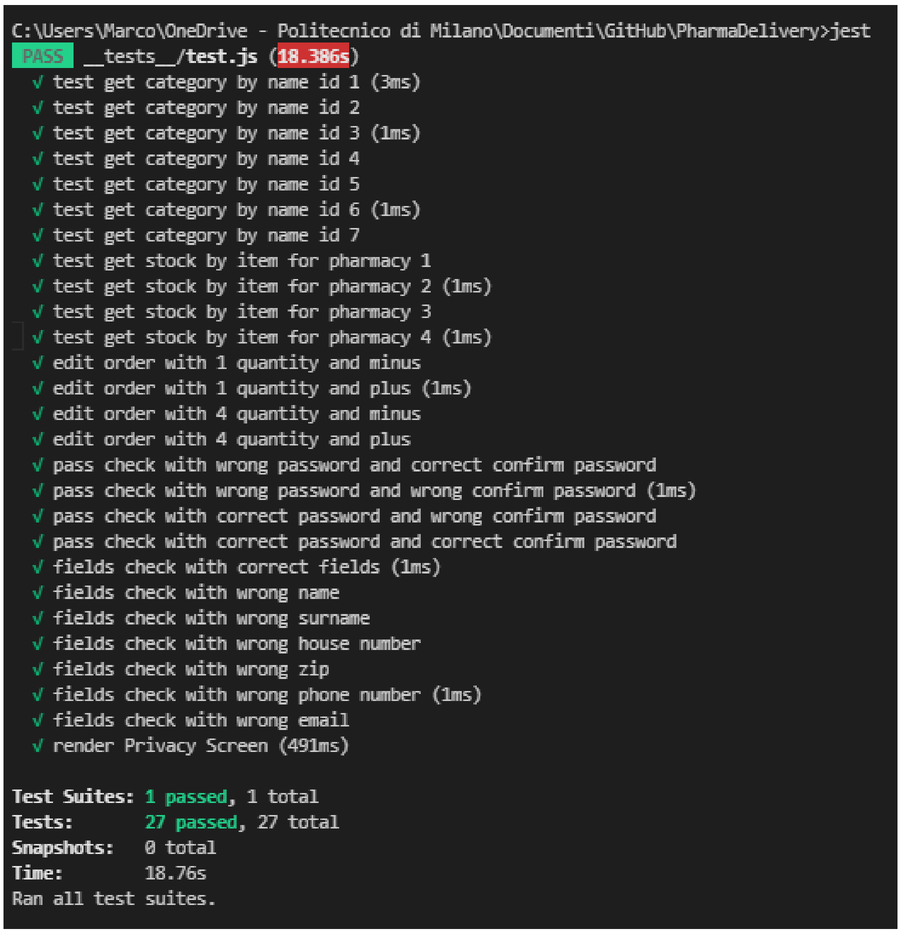
Being PharmaDelivery an Application mainly based on creating and showing elements on screen starting from data received from Database fetches, a Unit Test for each asynchronous function was not a viable solution.

## 9.1 Static Analysis

We both developed the Application using IDEs with integrated static analysis tools, so we were able to identify unused code lines, flaws or bad coding practices after creating and adding each component in our App.

## 9.2 Unit Testing

As we said, Unit Testing would not be the answer to test our Application, so we decided to Unit test only the functions that, given a local input, verify or modify local data (we checked the logic of our components).
The image below shows the execution of the tests (a total of 27) through **Jest** (the most common JavaScript Testing Framework). All tests were passed in 18.76 seconds.



```
C:\Users\Marco\OneDrive - Politecnico di Milano\Documenti\GitHub\PharmaDelivery>jest
 PASS  __tests__/test.js (18.386s)
  √ test get category by name id 1 (3ms)
  √ test get category by name id 2
  √ test get category by name id 3 (1ms)
  √ test get category by name id 4
  √ test get category by name id 5
  √ test get category by name id 6 (1ms)
  √ test get category by name id 7
  √ test get stock by item for pharmacy 1
  √ test get stock by item for pharmacy 2 (1ms)
  √ test get stock by item for pharmacy 3
  √ test get stock by item for pharmacy 4 (1ms)
  √ edit order with 1 quantity and minus
  √ edit order with 1 quantity and plus (1ms)
  √ edit order with 4 quantity and minus
  √ edit order with 4 quantity and plus
  √ pass check with wrong password and correct confirm password
  √ pass check with wrong password and wrong confirm password (1ms)
  √ pass check with correct password and wrong confirm password
  √ pass check with correct password and correct confirm password
  √ fields check with correct fields (1ms)
  √ fields check with wrong name
  √ fields check with wrong surname
  √ fields check with wrong house number
  √ fields check with wrong zip
  √ fields check with wrong phone number (1ms)
  √ fields check with wrong email
  √ render Privacy Screen (491ms)

Test Suites: 1 passed, 1 total
Tests:       27 passed, 27 total
Snapshots:   0 total
Time:        18.76s
Ran all test suites.
```

## 9.3 UI and UX Testing

A previous version of the PharmaDelivery Mobile Application was given to four Users for a total of three days (in a sort of User beta-testing), in order to identify possible unexpected behaviours, bugs or flaws. The outcome was actually very good, with the Application acting as planned except for a few minor issues regarding some non-intuitive filter parameters.
We then proceeded to fix them, leading us to the final product.

# 10 System Attributes

## 10.1 Reliability

The system guarantees a 24/7 service. Even if some Back End data has to change the system, it can be updated without down times, because every change in the Database will be immediately received and correctly updated from the Mobile Application.

## 10.2 Availability

The system is not used for critical services so the occurrence of faults is tolerated. However, given that the Mobile Application relies on safe and highly tested libraries, Third Party components and APIs, we can estimate the system availability to be at least at 99%.

## 10.3 Security

The only Security aspect that the system must handle is the credentials transmission and storage: Firebase does that, and obviously no password data is stored in the Database. Also for in-app payment, no sensible data is stored and Stripe/PayPal APIs provide a secure transmission of data.

## 10.4 Compatibility

The system will hopefully be used by a lot of people, so the Mobile Application must be compatible with as many devices as possible. Moreover, Hardware Limitations are not so tight because nowadays nearly every smartphone should satisfy them, making Compatibility easier to reach. In addition, nearly every smart device can run the Application: every iOS/Android tablet and every iOS/Android smartphone.

## 10.5 Scalability

The architecture is simply scalable as the number of Users grows during the time. Enlarging the structure of the system is an easy task: Firebase helps a lot in this case, because the number of possible Users is huge and the pharmacies and products can be expanded in a really easy way, by simply adding them one after the other in the Database (mainly thanks to the NoSQL structure).