

# TEAM DOLAN

---

Rohan Taneja  
TEAM LEADER  
Email ID: [tanejar@tcd.ie](mailto:tanejar@tcd.ie)

## SOLUTION OVERVIEW

---

We identified two problems and came up with a solution that can help both the entities. **These problems were identified from our own personal experiences when it became hard for us to get certain items in stores.** In India, the government declared Lockdown to ensure social distancing. However, there are many small businesses, which faced backlash due to reduction in sales. Also, there are many things which people need, these might not be essential products but are quite important to them specifically electronics and medicines. In a normal situation, a person would go to their local store to get these items but since delivery of goods is not possible to every store, so people are not able to get these items and also it's not possible for them to go to stores which are far off.

So, the question was, **how can we help small businesses to be able to keep selling products and how can people get those products for which they would normally depend on local stores?** The answer is **CollaBiz**.

Our application, **CollaBiz**, is specifically designed for small businesses. First, the salesperson needs to upload his inventory online. Now, if a person comes to the store for an item but the salesperson does not have it at that moment. Then, he can search the item in the application, and if some other store has it, then they can have it delivered to the store which needed the item. Finally, the customer can go to a nearby local store, instead of going to other far off stores and purchase the item. The salesman can immediately check for the item on the app and tell the customer that he can have the item very soon. Hence, **CollaBiz** can help businesses to keep selling products and help customers get not-easily-available items in these hard times.

## SOLUTION DESCRIPTION

---

COVID-19 is a pandemic as declared by WHO. Initially, people took this lightly as the cases were only limited to China. Gradually, cases were being reported all over the world and people then started to panic. Governments, in all countries, started taking measures to prevent the spread of this disease. Some of the measures taken by the governments, as suggested by WHO, are Social Distancing. To implement this, Indian Government declared LOCKDOWN, so that social distancing can be ensured. This is a big step and it did indeed help to control the number of cases in India. Many people stayed at home for their own safety and only essential workers were allowed to work.

While this, the Lockdown, has proved to be a good step, but with this came a new problem. There are many small businesses, which depend on their daily sales and in Lockdown, many people stopped buying stuff. So, they had to face huge backlashes. Also, there are many things that people need like important medicines and electronics, but these are not available in their local stores on which they count normally. The reason for unavailability of such items in some stores can be because of restrictions on delivery of goods to every store. So, we can see there are two problems here.

Now, one might wonder that there are services like Amazon that can deliver every item to your door steps and yes, we agree to that. But, Amazon is also a service that delivers items from a store to you. And, in these tough times, even sites like Amazon are either unable to deliver an item if it's not available in a store near you or taking many days to have it delivered. This is where our app, **CollaBiz**, differs and in some ways, proves better than the existing solutions.

**CollaBiz** is an app that is built to help small businesses and customers. The salesperson has to upload his inventory. Now, if a person comes in search of an item but the salesman does not have it at that moment, then he can search it on the app to see if some other store has it. The salesman can then get in contact with the nearest store that has the item and have it delivered to his own store. So, this way the customer can get the item he needed without going to far off places in search of that.

Our app is multiplatform and can be run on Android and iOS. However, our app would not have been possible without the help of the Community Cooperation Starter Kit provided by IBM and we are grateful for that. We had the initial idea for the project but this Starter Kit was our kick start. This app uses **Watson Assistant**, a service provided by IBM cloud, which helps in deploying conversational interactions with users. Another IBM service that we use is **Cloudant** for databases. We also make use of **HERE** which helped us in embedding location and routing services. Then, **React Native** helped us to bring our app commonly to all platforms. **Firebase** was used to include a chatroom in the application.

# SOLUTION ARCHITECTURE

---

The idea behind the app was to help businesses collaborate with each other in these tough times and in a way help customers. There were three challenges available to us- Remote Education, Community Cooperation and Crisis Communication. The idea for the solution to the problem we identified easily came under the category of Community Cooperation. We checked out the starter kit for the same topic and found many features were present in that kit but **we still needed to make those features adapt to our own idea**. We started by understanding the starter kit thoroughly and planned out what all had to be changed and what all had to be added.

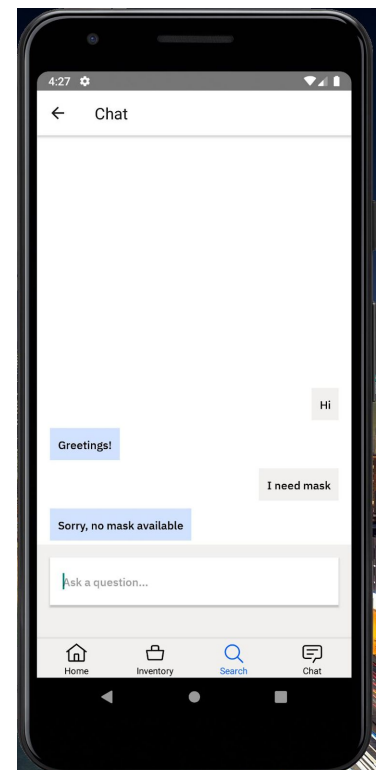
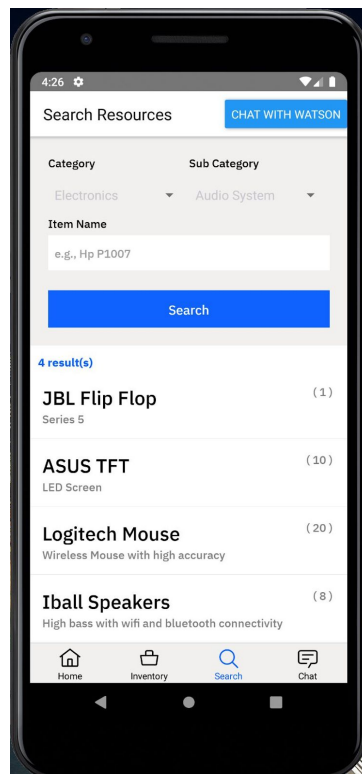
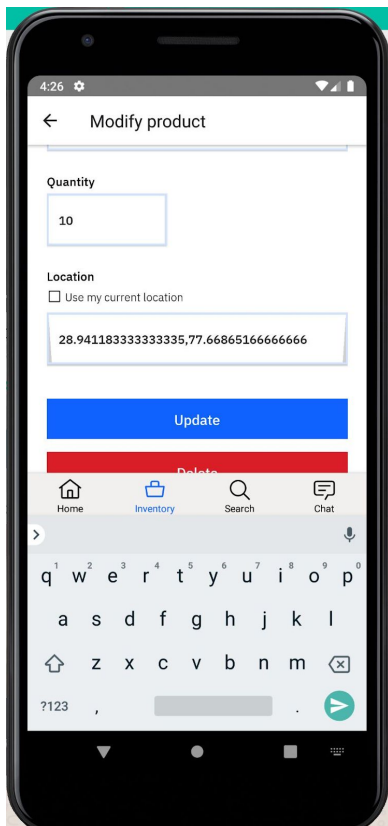
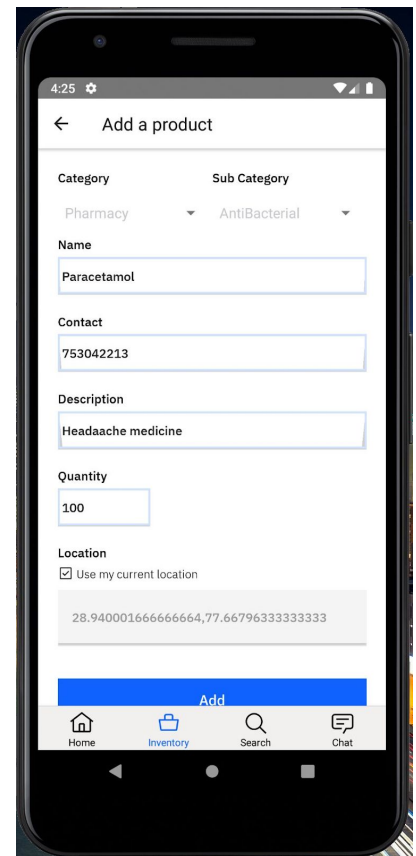
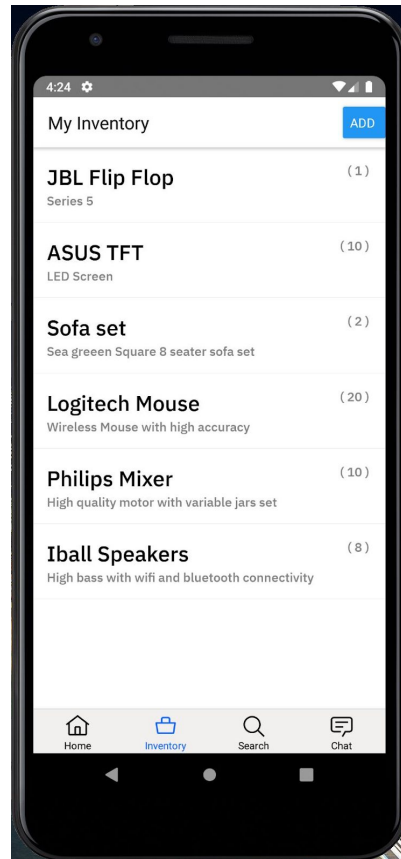
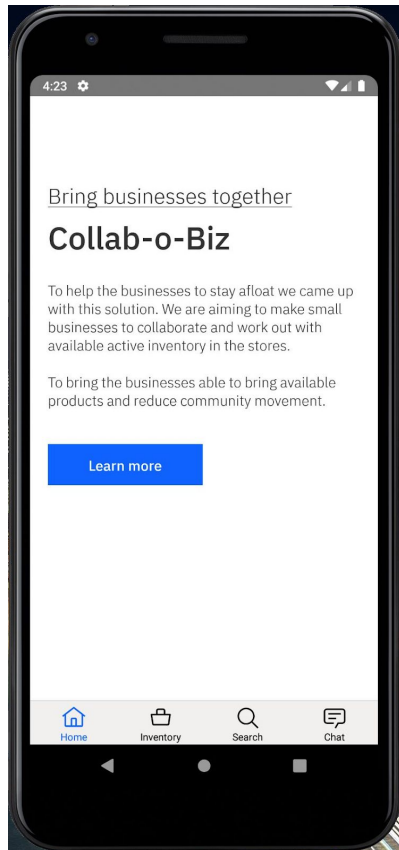
Within a few days we were able to add many main features that define our app **CollaBiz** and some minor details that we planned, which could give a much better user experience, can be implemented in future. These are mentioned in detail later. Currently, when you open our application, you will see a bottom navigation with four tabs: Home, Inventory, Search and Chat.

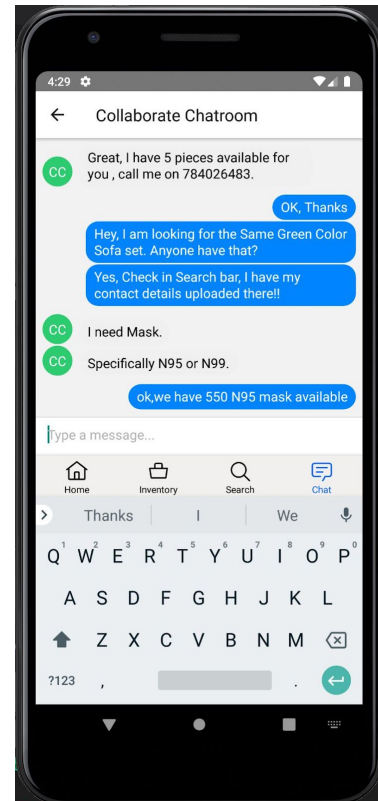
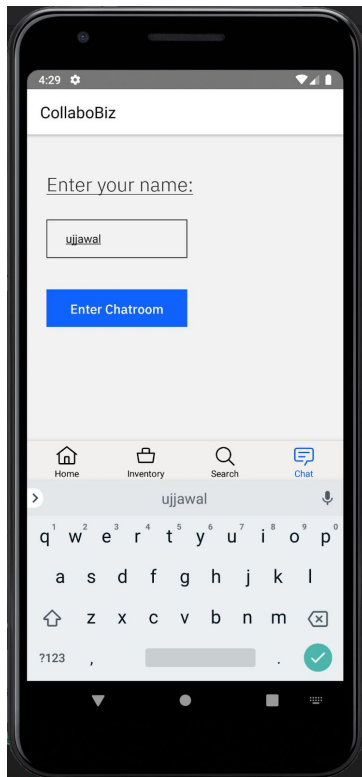
- **HOME:** This page shows you a brief description about your store.
- **INVENTORY:** In this page you will be able to add and modify items that you want to provide to other stores in times of need.
- **SEARCH:** Here you will be able to find those items that a customer came looking for but it was not available in your store. You will see a list with stores that has the item. When you click on it, it will take you to a map, showing you the route to the store. You will see an option to chat with Watson that can help users with tech support.
- **CHAT:** In this page you will be able to see your chat records with other salespeople.

A complete **layout** of our application that can give a basic understanding, from Frontend to Backend is as follows:

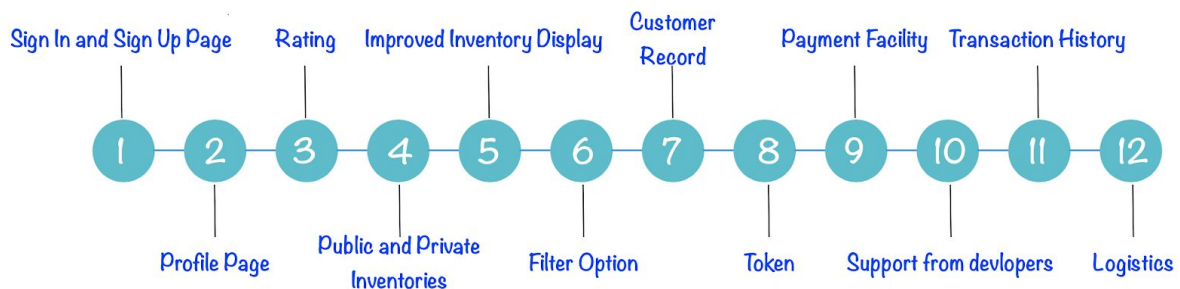


Below are the screenshots of various screens.





Although, our application has the basic functionalities of our idea but there are so many things that we would implement in future in order to give the best experience to our users.



These are explained below:

1. We want to add the **Sign-In** function, that will take the details of the salesman and the store. This would help to save data for the user.
2. A **profile page** to edit your home screen. This will be made public for other stores to see.
3. **Rating**, when a transaction of the item will be made, both the parties can give rating to each other. This rating will be made visible to all, that will help stores to decide which other stores to get in contact with.
4. **Public inventory**, for those items that the store has in surplus amounts and wants to provide to others, and **Private Inventory**, for those items that the salesman has in less amounts and wants to keep record for himself. Only the items added in public inventory will be available for Search.

5. An **improved inventory display** with proper columns for name of the items, category, subcategory, quantity and prices.
6. A **filter option** in Search page, that can show search results based on distance, rating, prices etc.
7. **Customer Record**, this can store the name and contact details of the customer who needed the item in the first place. This way the salesman can inform the customer when the product is available and the customer can pick it from the store.
8. When the details of the transaction between the stores have been finalised, the requesting party can generate the **Token** or in simple words a **binding contract** that will ensure that the transaction of the item between stores will be made properly and actions can be taken in case of cheating.
9. **Payment options**, once the delivery has been done, using Online wallets, net banking, or Cash on Delivery.
10. **Support from Developers**, this option will be implemented by Watson Assistant. In case a salesman was cheated in the transaction, then he will be able to contact us or someone more authorised to report the false supplies.
11. **Transaction History**, this will have the list of all items that were requested from other stores and those items that were delivered to other stores.
12. **Logistics**, this will be more complex functionality in the app. The logistics will be a way to understand which items are available in surplus amounts in certain areas, why certain items are not available in some places etc.

It will take a month or two to include the above mentioned features in our app. Also, **we will include any new ideas that might occur to us along the way (like an improved chatting page)**. The funding requirements will only be needed for more IBM cloud storage and premium services. As of now, we were only aware of a few services provided by IBM and so, we would like to learn more about the services, how to incorporate those in our app so as to make our app more user friendly.

## IBM CLOUD SERVICES

---

IBM Cloud, as we understand it, is a collection of cloud computing services that offers both PaaS and IaaS. We were new to IBM cloud and the workshops really helped us in getting to know these services. We were able to use two great services provided IBM Cloud.

**IBM Watson Assistant:** It is an AI assistant that helps us to answer a few repetitive questions in a fast and straightforward manner.

**IBM Cloudant:** It is a distributed database service provided by IBM.

---

<Crack> the COVID-19 Crisis