Mobile Applications and Cloud Computing

Smart Shopping

DIPARTIMENTO DI INGEGNERIA INFORMATICA
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About the app (part 1)

Smart Shopping

- Smart Shopping is a grocery shopping-based app that aims to find total costs of groceries given an input by the user for a list of specified supermarkets.

- Smart because it finds the cheapest price for each item.

About the app (part 2)

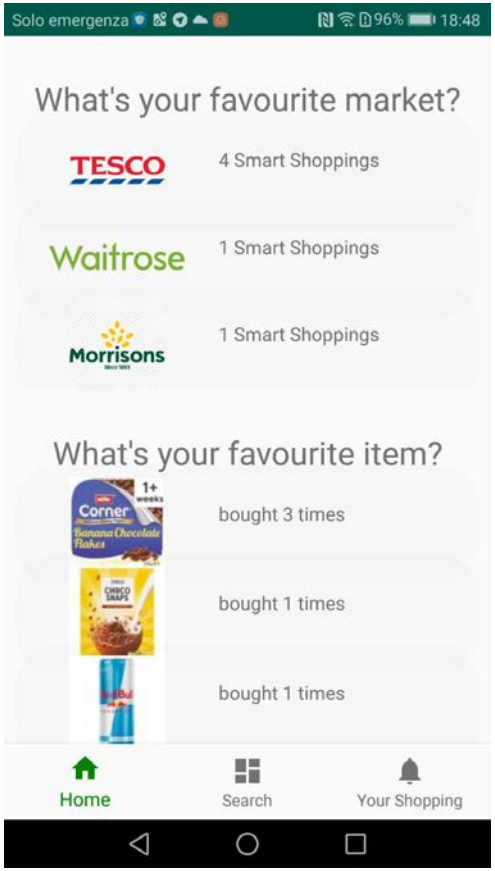
- Even though the number of supermarkets is incredibly high, very few of them developed APIs to access information about products.
- So we decided to use Tesco API and take into account other two supermarkets: Morrisons and Waitrose for which we have been using Ruby on Rails and Heroku as described in next slides.

Google Sign-In

- The app uses the Google Sign-In as authentication service. We decided to use it because nowadays Google is one of the most important IT company in the world and every user, with a high probability, has already a google account.

- This means no further registration needed!

Home Activity



Search an item

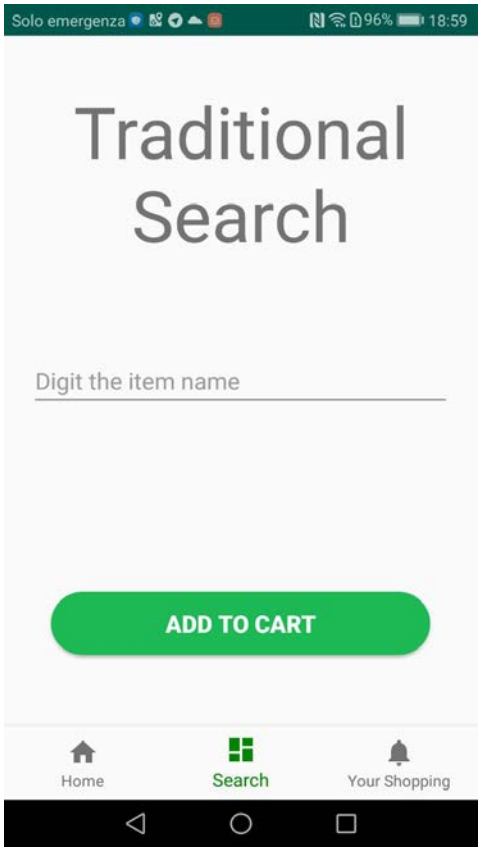
- Google AI
- Traditional Search

Pattern recognition – Google Cloud Vision API

- The user can decide to take a photo or choose one from the gallery.
- The image is sent to Google that recognize patterns (e.g. items) giving a percentage of accuracy for each of them so that the user can add the desired product into his/her cart.

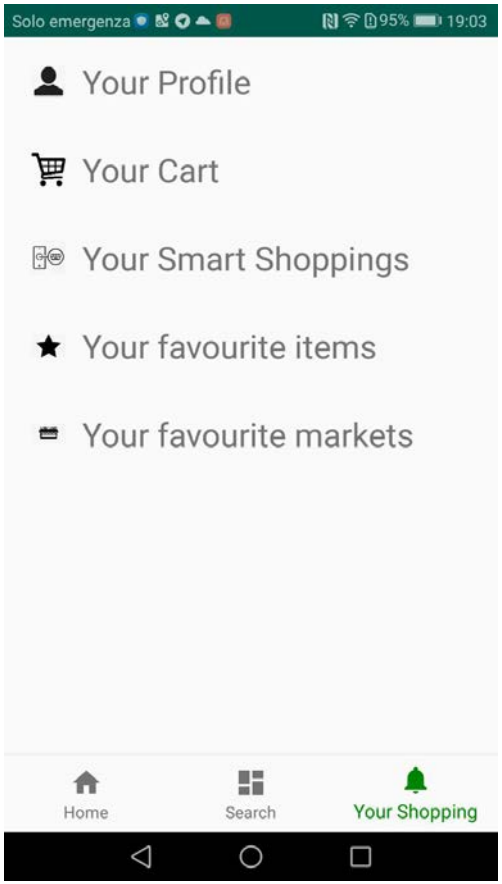
Traditional Research

- The user digits the product he/she wants to buy and clicks «Add to Cart»



User menu

- Profile shows information about user and the possibility to sign out from the app.
- Your cart shows the items you want to buy
- Your Smart Shoppings lists your past shoppings



Firebase (part 1)

- To store user's data we decided to use Firebase as real-time database.
- It's a very powerful tool!
- It provides a very large set of functionalities: Firebase recycler view implementation is one of the most used in our project.

Firebase (part 2)

Offline capabilities

- Thanks to firebase it was possible to implement a working app even offline.
- Firebase, with the right configuration, is able to store data locally and synchronize it with the remote database when a connection is established.

- As an example, switch off Wi-Fi connection and try to launch the app, you still see images and statistics in the Home activity.