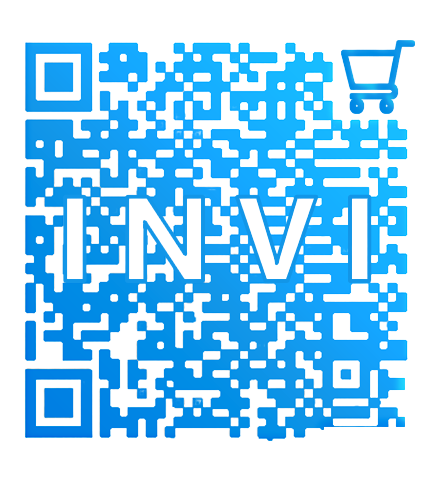
GROUP 1

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INVI

Mobile Self Checkout

# Introduction

INVI is a mobile application which allows users to self-checkout in stores who opt to integrate this application. INVI also permits stores who offer equipment renting such as bikes, kayaks or scooters to self-rent the asset by scanning a QR code on the asset which will then link it with your account until returned. Using INVI for self-checkout aims to reduce ques, enlarge store space by removing more tills which will translate into extra rows for products and an increase in revenue. As the user conveniently scans items while putting them in his/her trolley or basket, it will check if a cheaper alternative product is available.

# Usage

Our focus currently is stores that hire equipment and stores that want to implement a low cost, self check-out service. Later we plan to implement a tracking service for equipment used in big factories as knowing who or where a piece of equipment is a major problem. We also plan to implement pay at pump integration, the user will come to pump where an **NFC** or low powered Bluetooth beacon will open the INVI app asking user to select they type of gas, then how much. When the user selected his/her gas & price a barcode will appear on the screen which he/she then scans to active the pump. The phone will deduct the payment from the user’s payment choice on the app and a receipt will be saved onto the INVI app which can be used for tax returns if needed.

# Technology Used

Currently, **INVI** uses Firebase as it's the main framework for authentication, storage, and analytics. **INVI** has social platforms Google, Facebook and Twitter integrated for login but also for sharing any offer the user came across in-store or his/her recent purchases. Currently, the user can register using the aforementioned platforms or using his/her email.

**INVI** uses **nosql** for the back-end database which is highly scalable across multiple servers, **nosql** has very quick read and write speeds making it very efficient with large volumes of data and users.

The client side applications are written in Java running on the Android operating system and will later be ported to Apple and Progressive Web App (PWA).

# Cost & Time Saving

When user scans an item, it will automatically add the item to the cart in-app. This not only cuts queuing time but allows stores to tailor ads based on your past purchases but also time sent in a specific row. This also makes shopping less stressful and time-consuming. **INVI** will implement live time in-store tracking, which will enable the store to push live notifications of any offers in the row you're currently in and any pending offers in stores. **INVI** also has an option to price check to decide whether to purchase it or not. If a particular product is not available within the store, the can either search for it within the App or scan the barcode / QR code of the product on the shelf and **INVI** will automatically search for it in nearby stores who also use **INVI**.

# Future Development

The final idea is to implement physical shop cart synchronization, which will have a QR code attached to it.

Once the user scans that QR code the trolley/basket will be automatically be linked to his/her phone until shopping is finished and the users check out. Similar to the current self-checkout stations, the trolley/basket will have an integrated weighing scale. It will trigger a notification if the weight doesn't match with the products scanned. If the notification is not responded to within two minutes, the trolley will flash red and lock the user out displaying a QR code on the phone screen which will only allow the store's staff to scan and unlock the temporary lock, preventing theft.

# Screenshots

The main screen of INVI has a side navigation layout currently consisting of

* Home – Most recent purchases and rented items
* Purchases – This is the cart where items to be paid for are displayed
* Rentals – Will display currently rentals and live price and balance of items out
* Receipts – This will hold any completed purchases and return or rental equipment
* Tools – Settings of the app will be place here
* Map – This area will show current stores on map or possibly bring users to the location, yet to be decided as an intent with geo point opens the official google maps
* Share – Share app with friends
* Log out – Return to login screen

Please note this app is still very much in development and a lot of this layout is subject to change.

Please note although you requested transitions, we really could not find any free software that did our current progress justice, so we displayed screenshots instead. If we were to make transitions it would be very basic as you can see the left navigation just one click brings you to the screen so opted for the screenshots to give better understanding.

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