



EST. 2003

NAPPTILUS
TECH LABS



UNIVERSITAT POLITÈCNICA
DE CATALUNYA
BARCELONATECH



BECO

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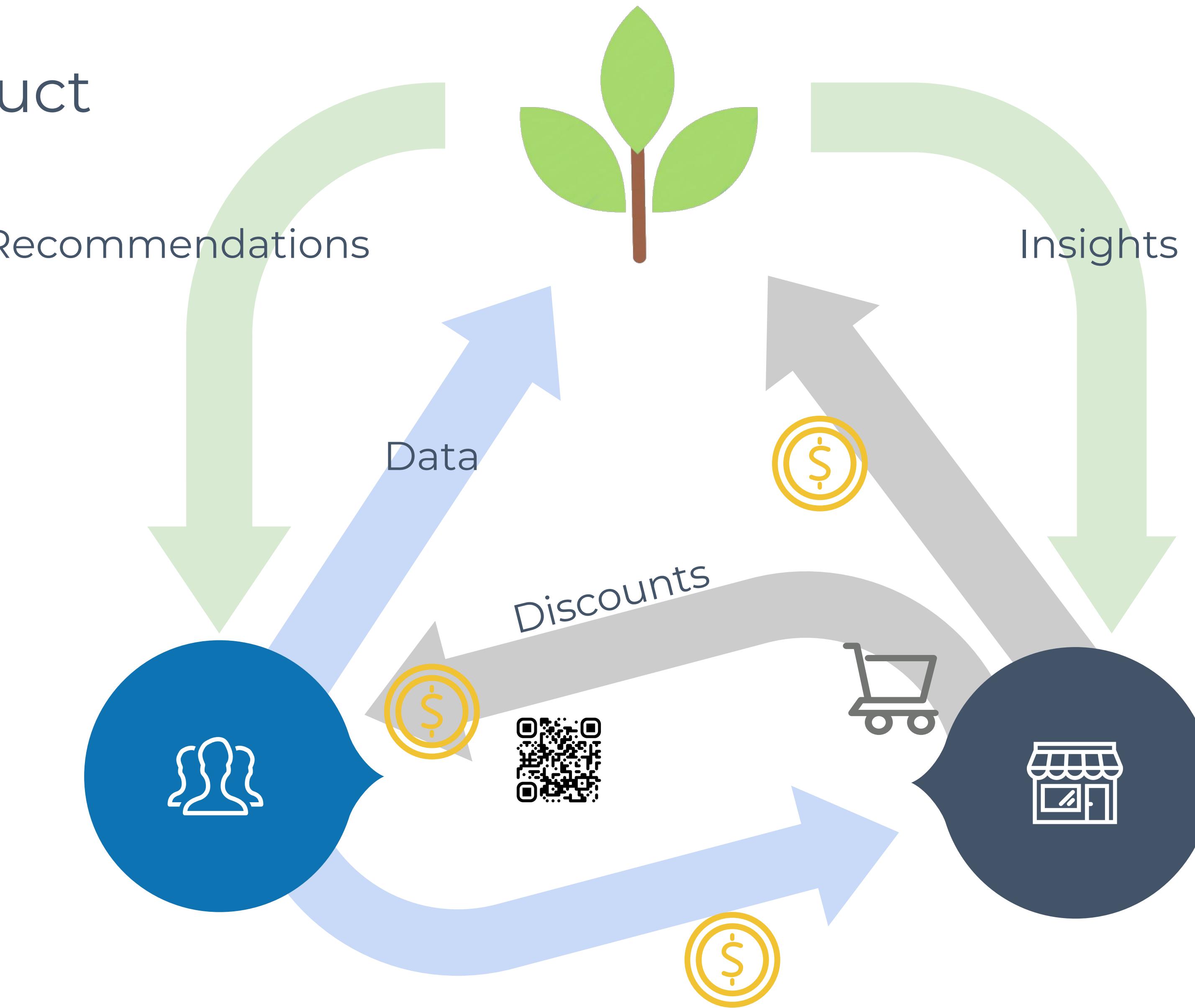
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The problem

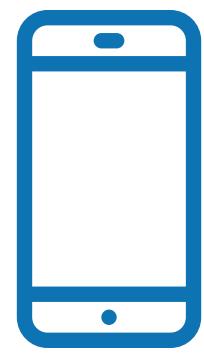


Our solution

Our product



Value Proposition



BECO app

Show the app users
eco-friendly shops of
their interest.



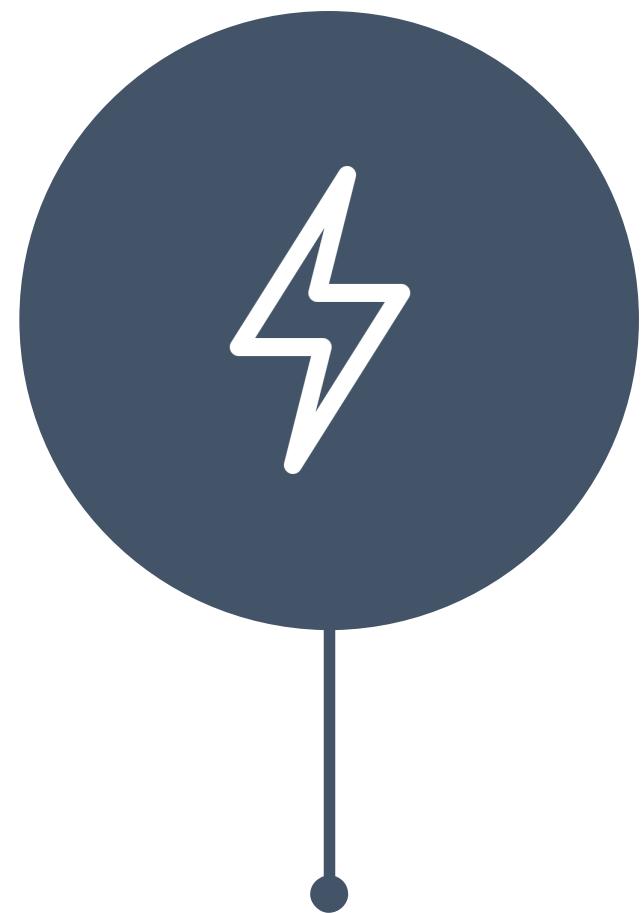
BECO web

Show powerful data
insights to the
registered shops.

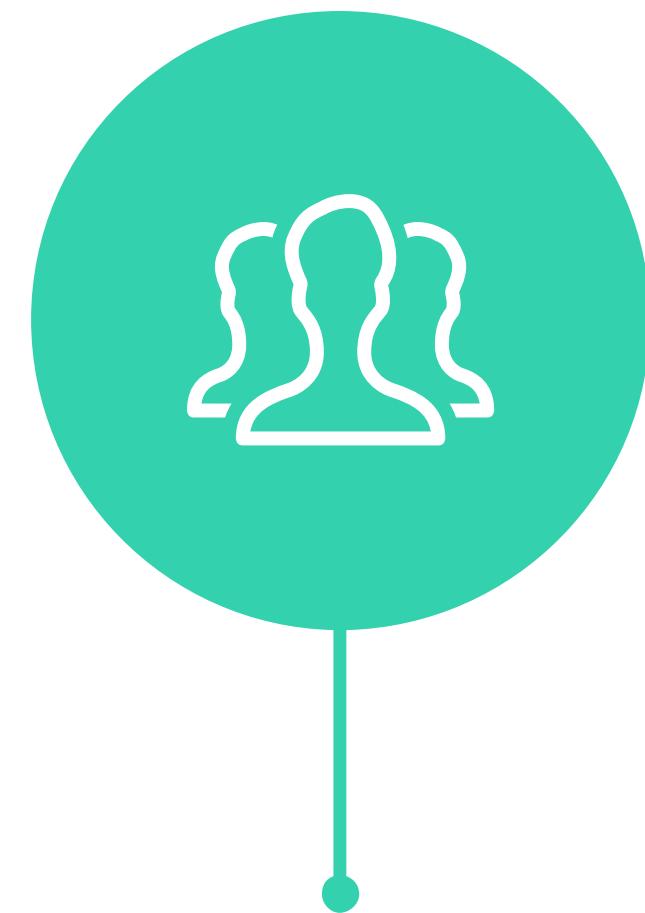
Requirements



Personalized
Recommendations must be personalized and of the users' interests.



Fast
Retrieving data from the DB must not affect the UX.



Intuitive
The app should be accessible to anyone and easy to use.



Reactive
The users must be able to change their data after registration.

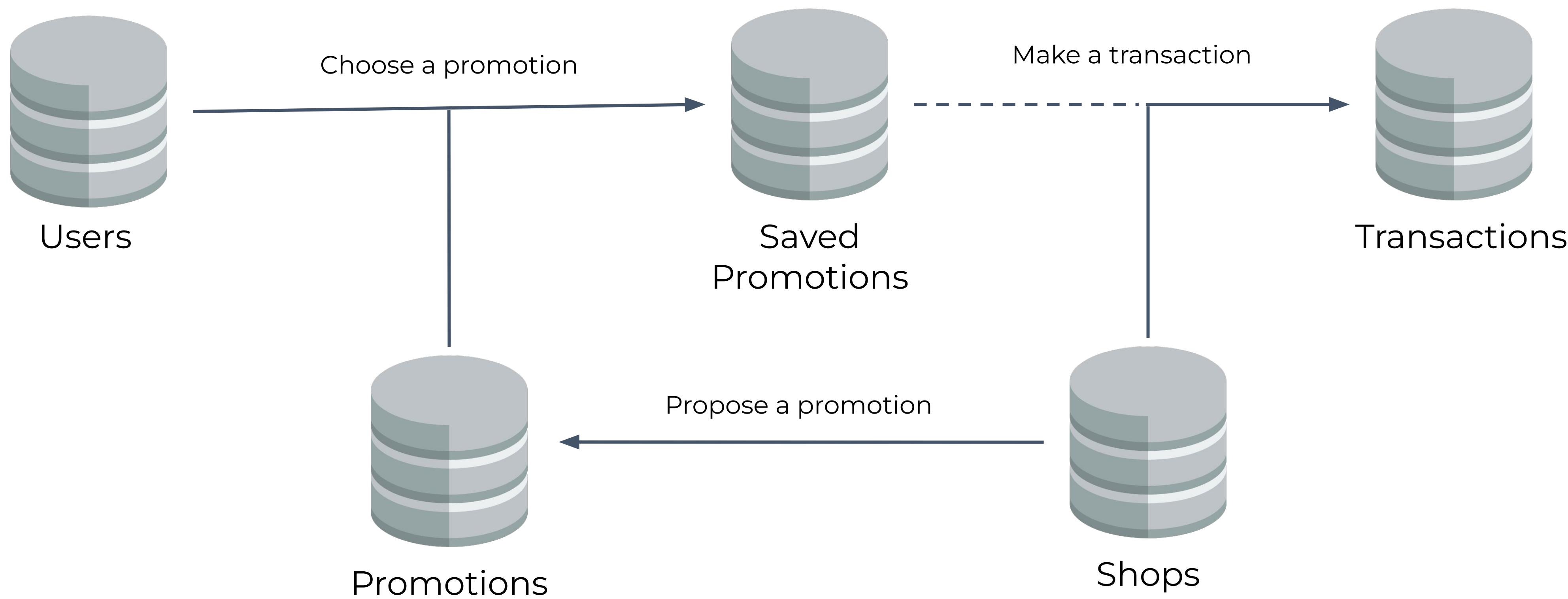


Visual
Stores' data must be easily visualized with plots in the web dashboard.

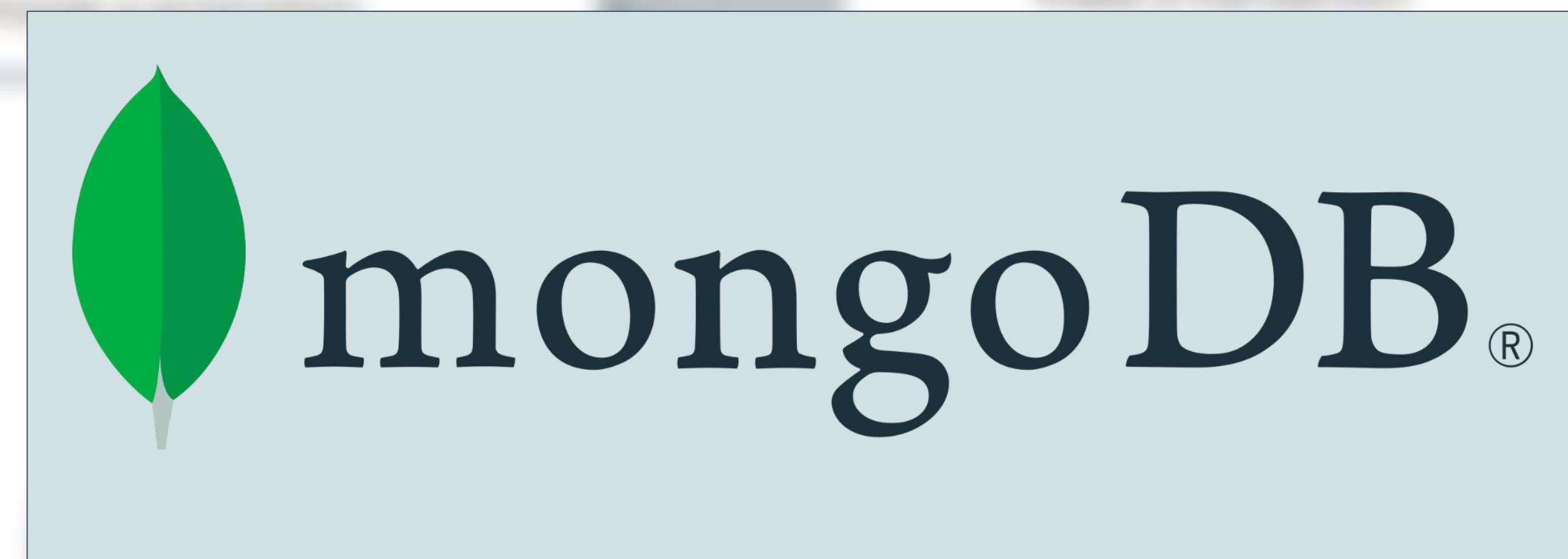
App



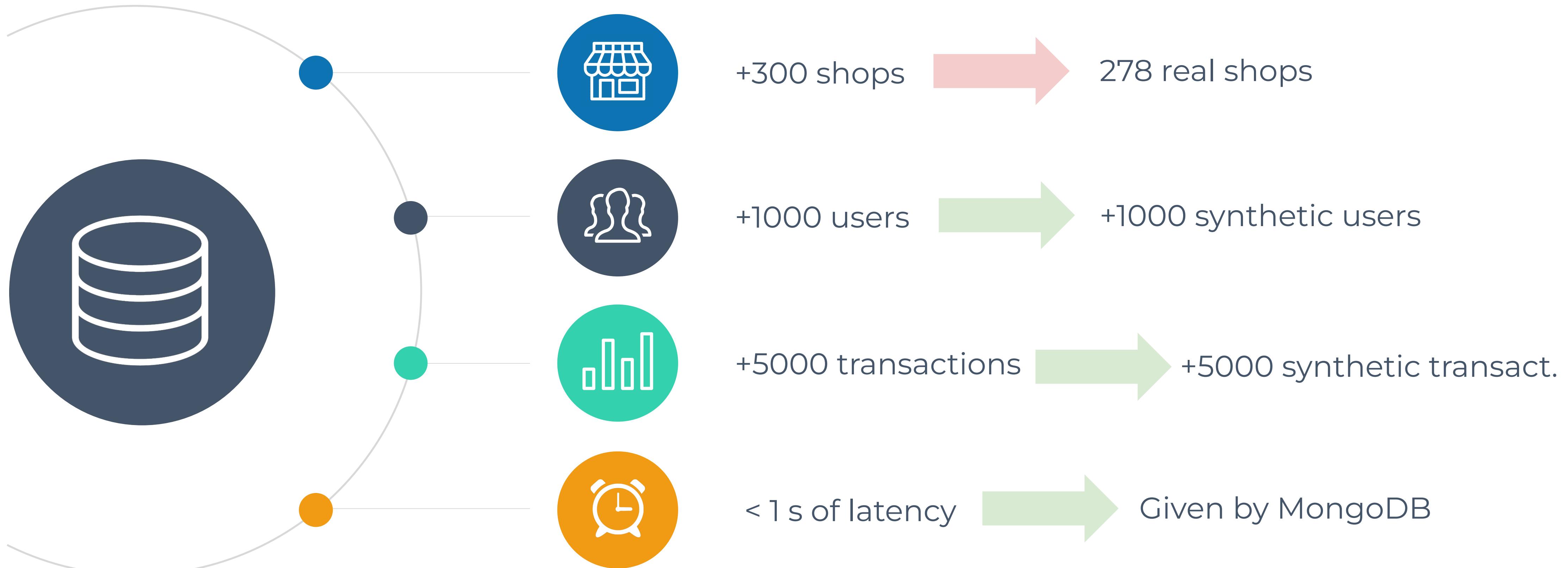
The database



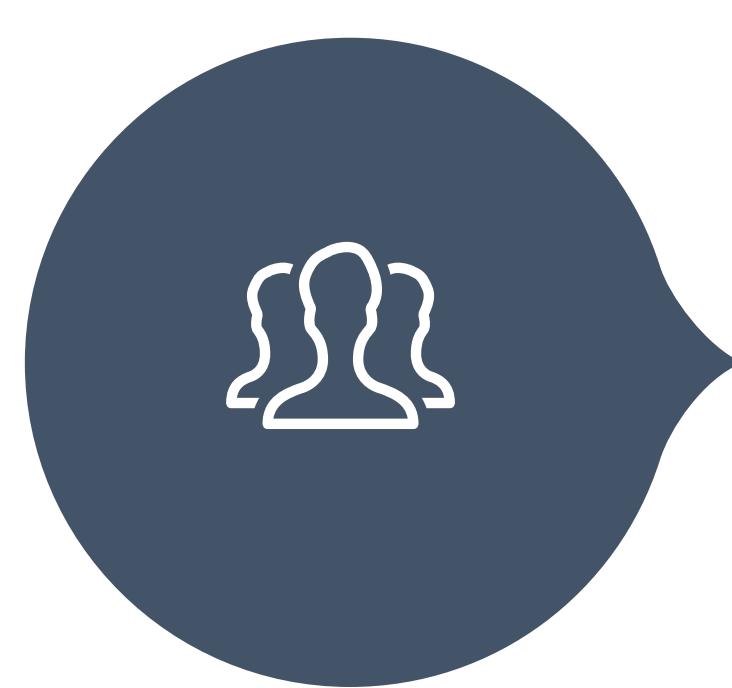
The database



Database Specifications



Context-Aware Simulation

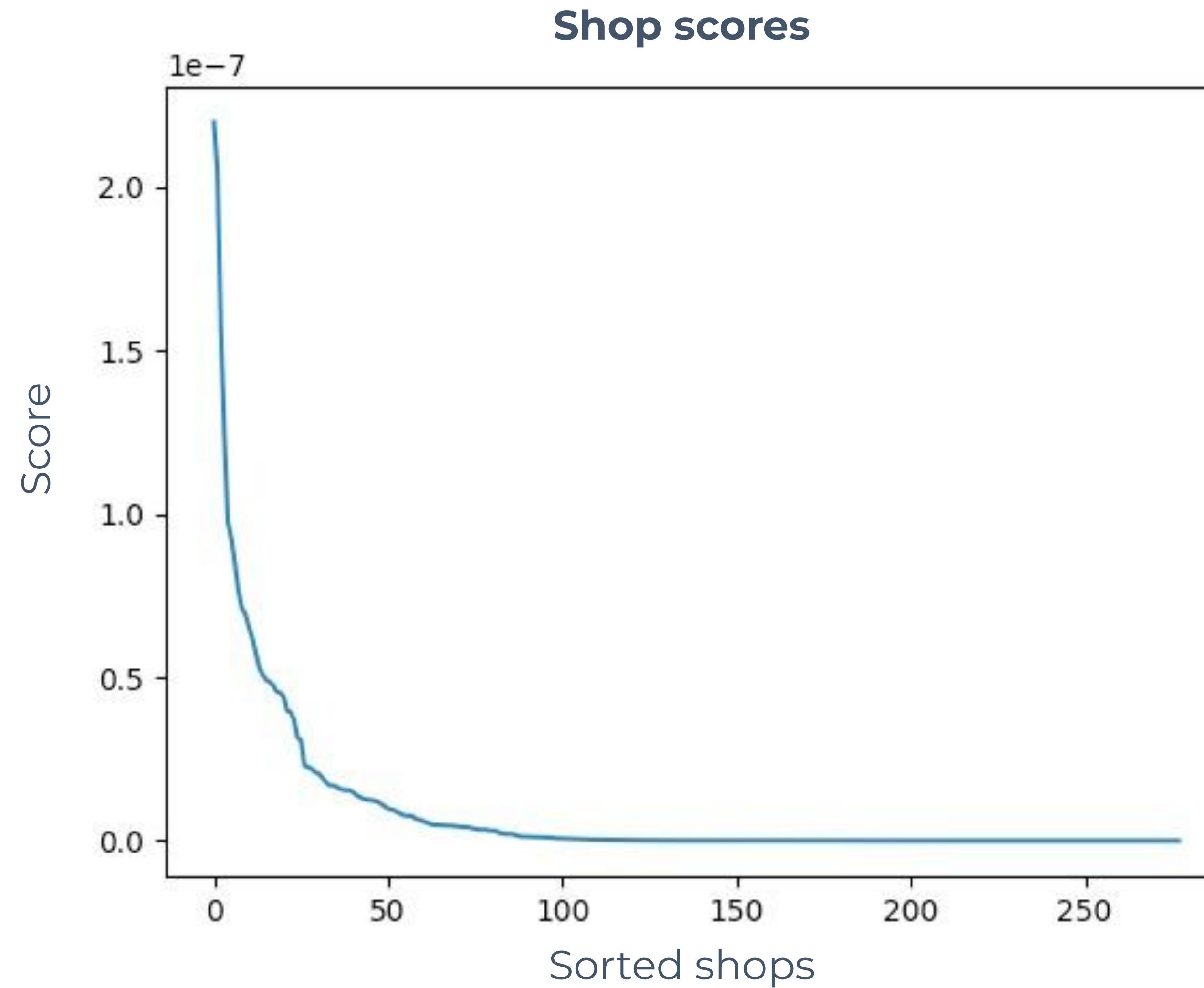


{
Frequency (f_r)
Fidelity (f)
Laziness (l)
Pickiness (p)

$$\text{Buys}_i \sim B(f_{r_i})$$

$$\text{Score}(u_i, s_j) = \frac{1}{3} \left\{ \exp(-l_i \cdot d_{i,j}) + p_i \left(\frac{|U_i \cap S_j|}{|U_i|} \right) + f_i \cdot \text{softmax}_j(N_i) \right\}$$

Context-Aware Simulation



— Recommending System



User 2 user

Uses similar users data
to recommend you
shops.



Location

Is conscious of how far
is every shop from you.



Preferences

Takes into account
explicit and implicit
user preferences.



AQI

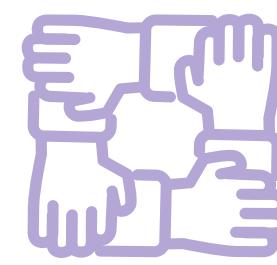
Recommends based
on the air quality
around the shop.



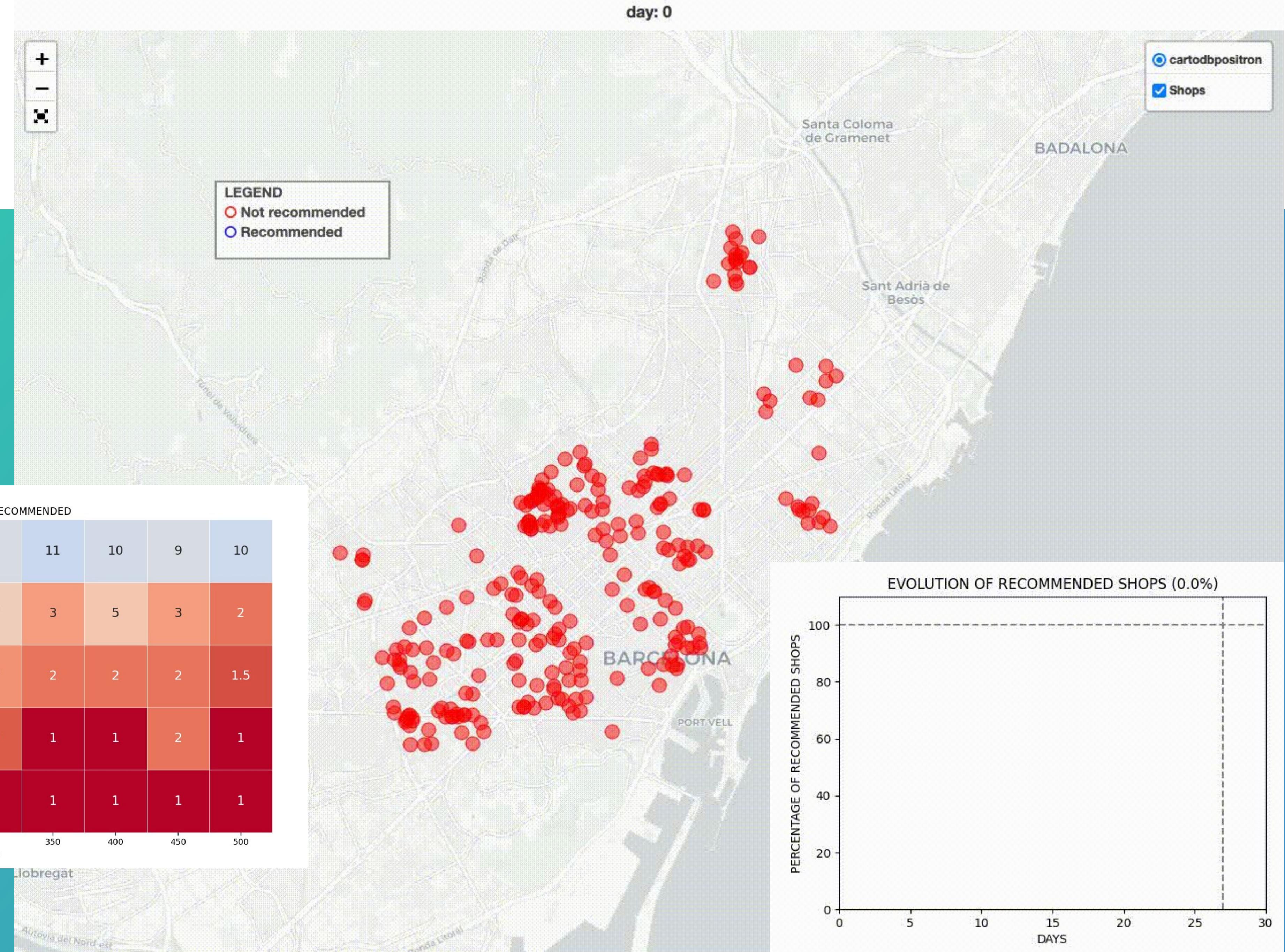
Fast

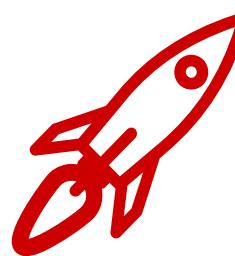
Responds quickly.

0.662 ± 0.2
seconds



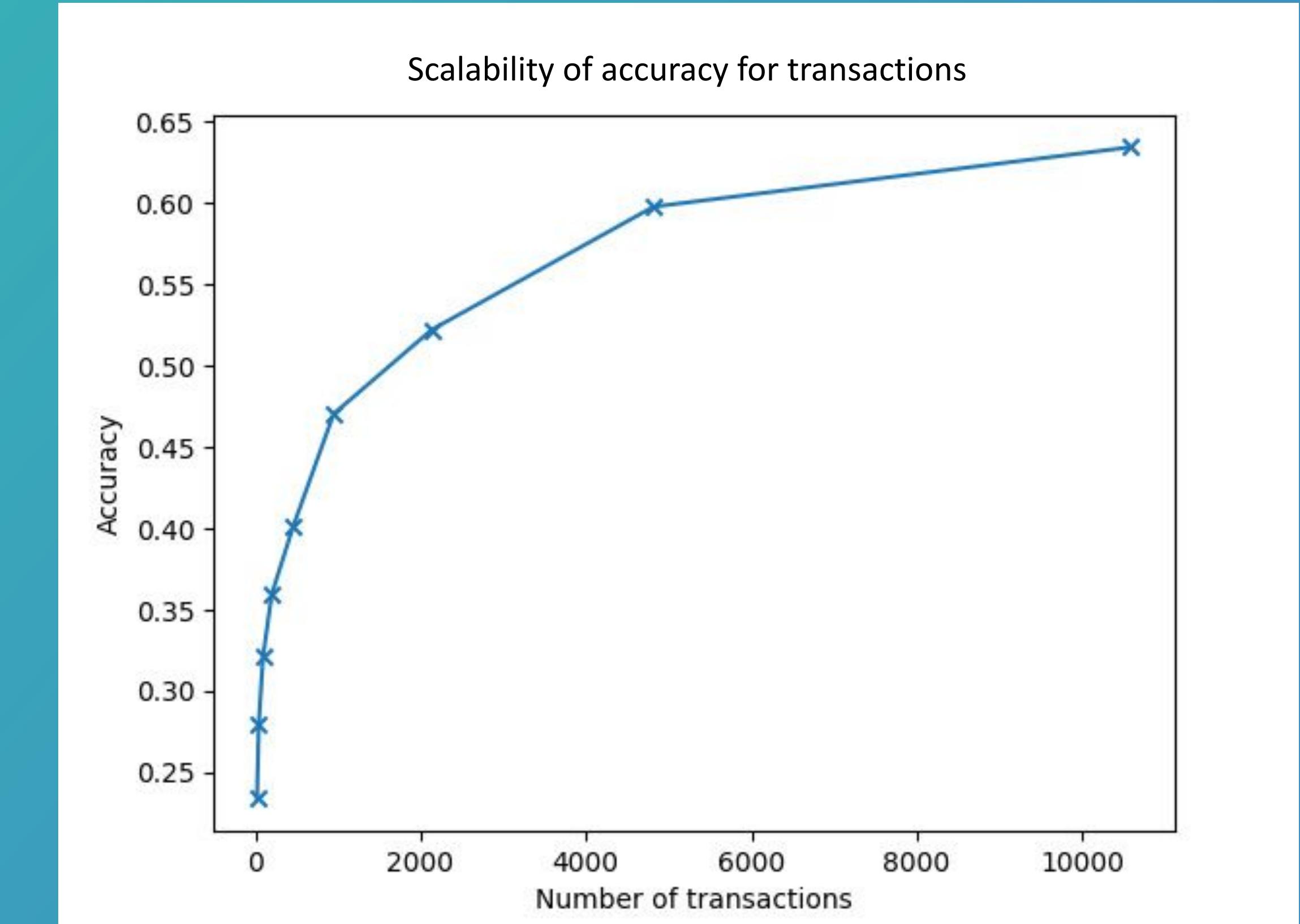
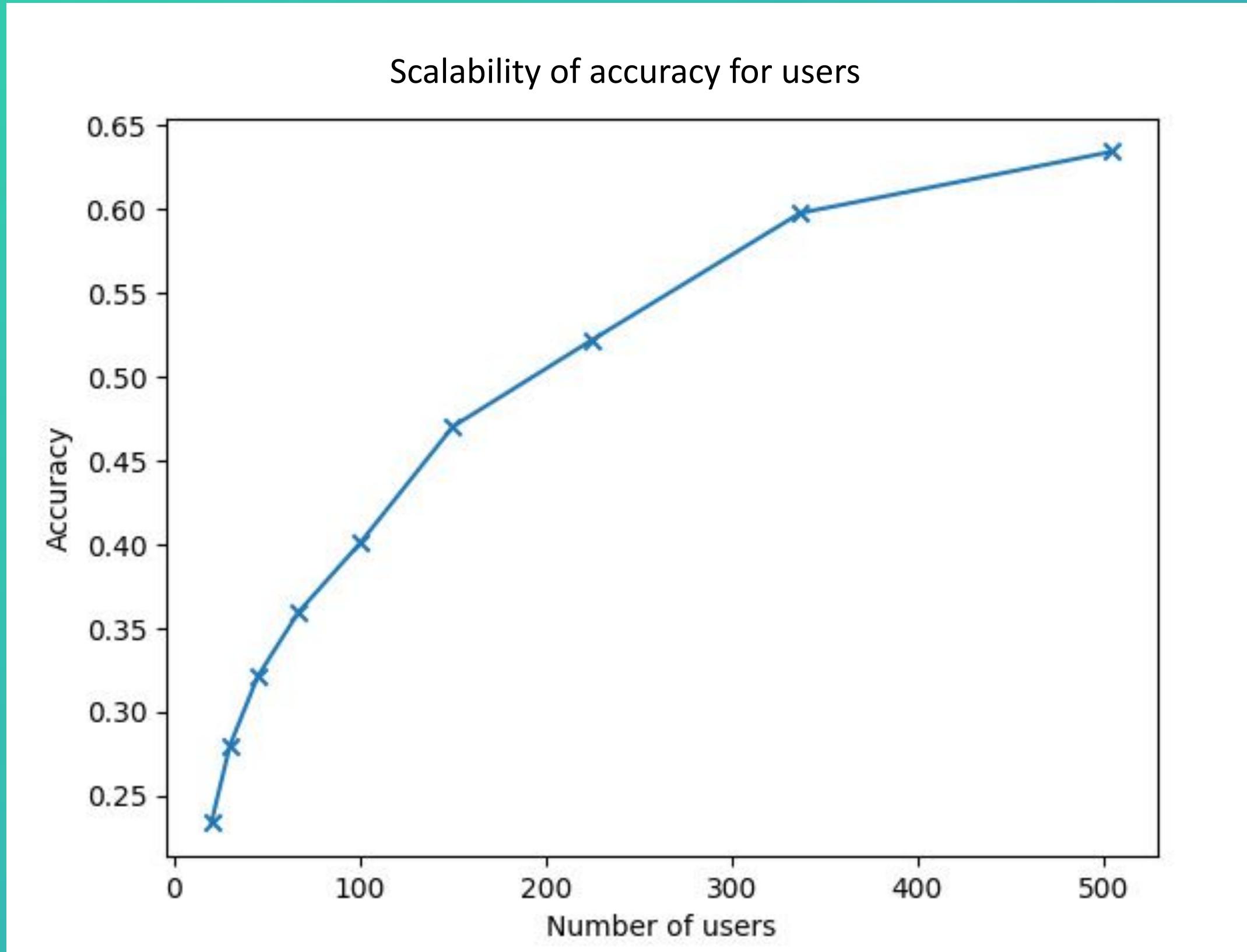
Inclusive
Treats all shops
equally.



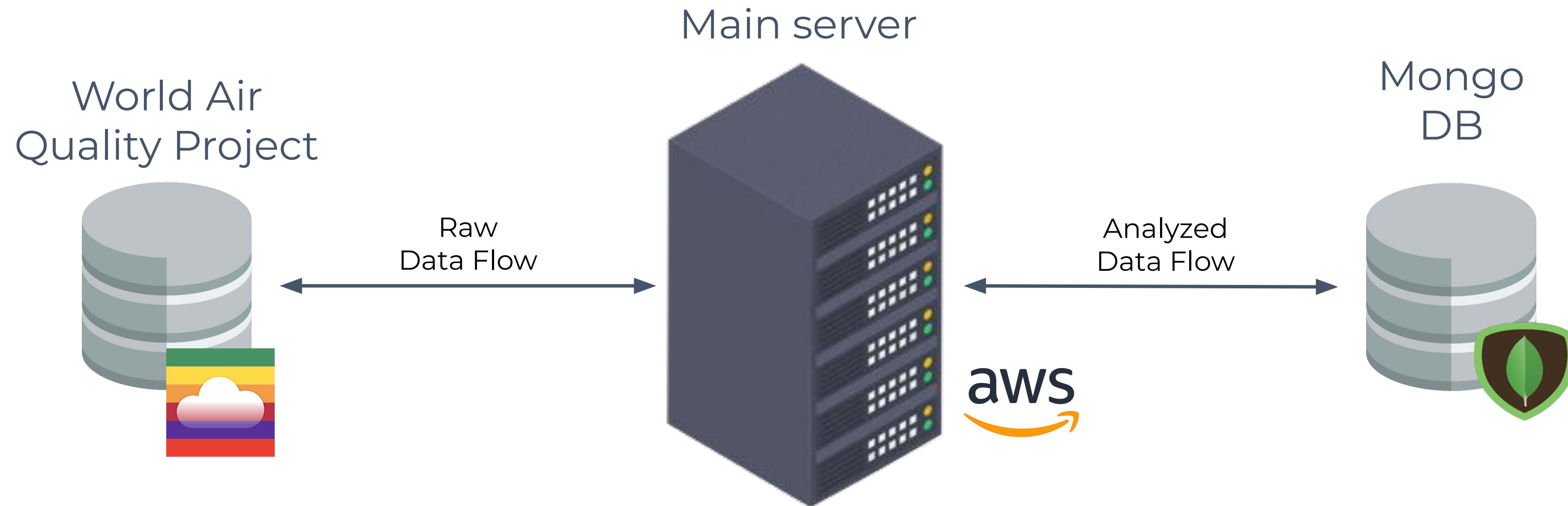


Scalable

The more users, the better performance.



Air Quality Index



$$\text{aqi}_{shop} = \frac{1}{\dim(N_{shop}) - 1} \sum_{st \in N_{shop}} \text{aqi}_{st} \left(1 - \frac{dist_h(shop, st)}{\sum_{st' \in N_{shop}} dist_h(shop, st')} \right) \left(1 - \frac{t_{st}^{elapsed}}{\sum_{st' \in N_{shop}} t_{st'}^{elapsed}} \right)$$

N_{shop} = Near stations to shop

BECO App



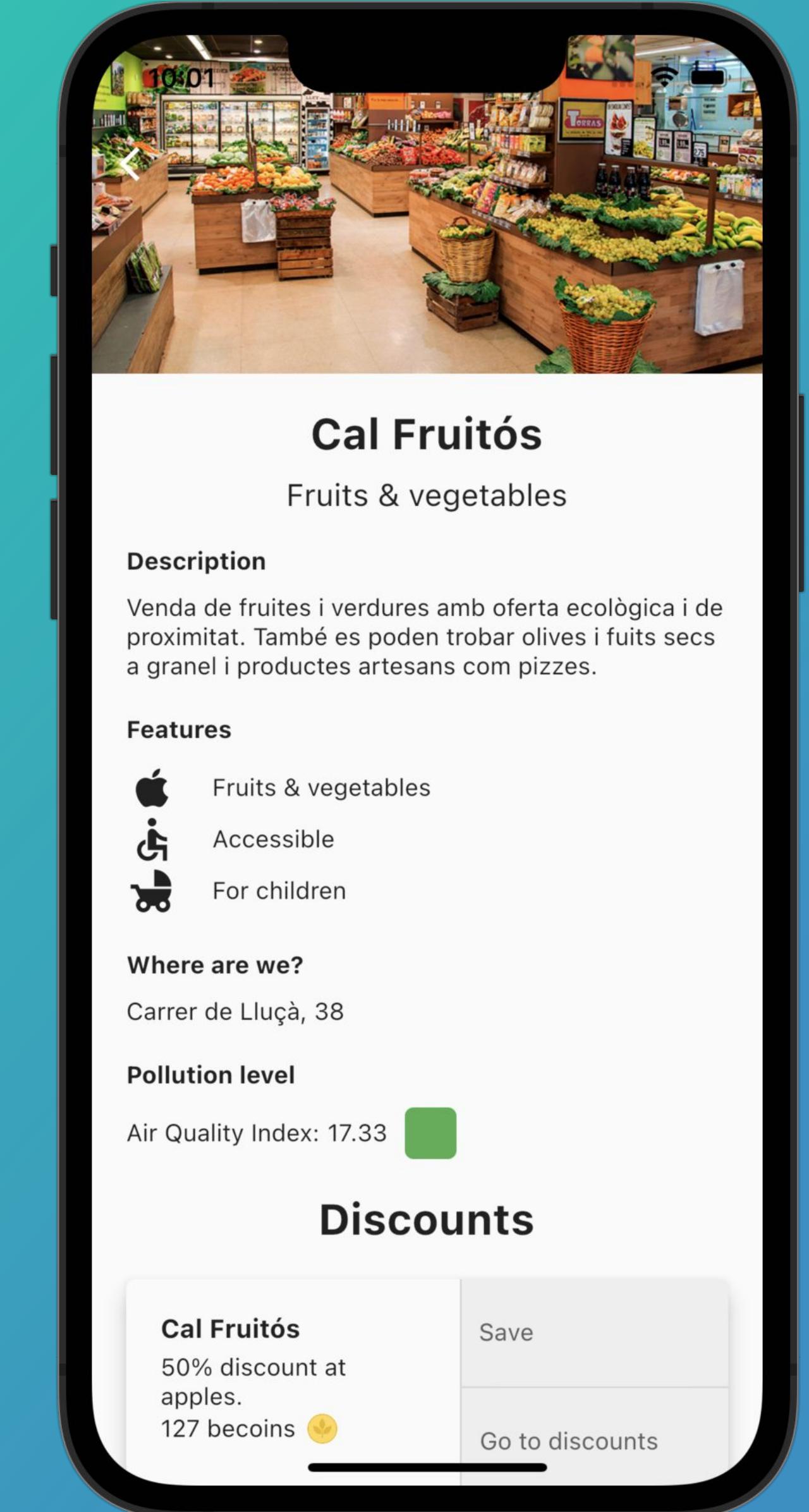
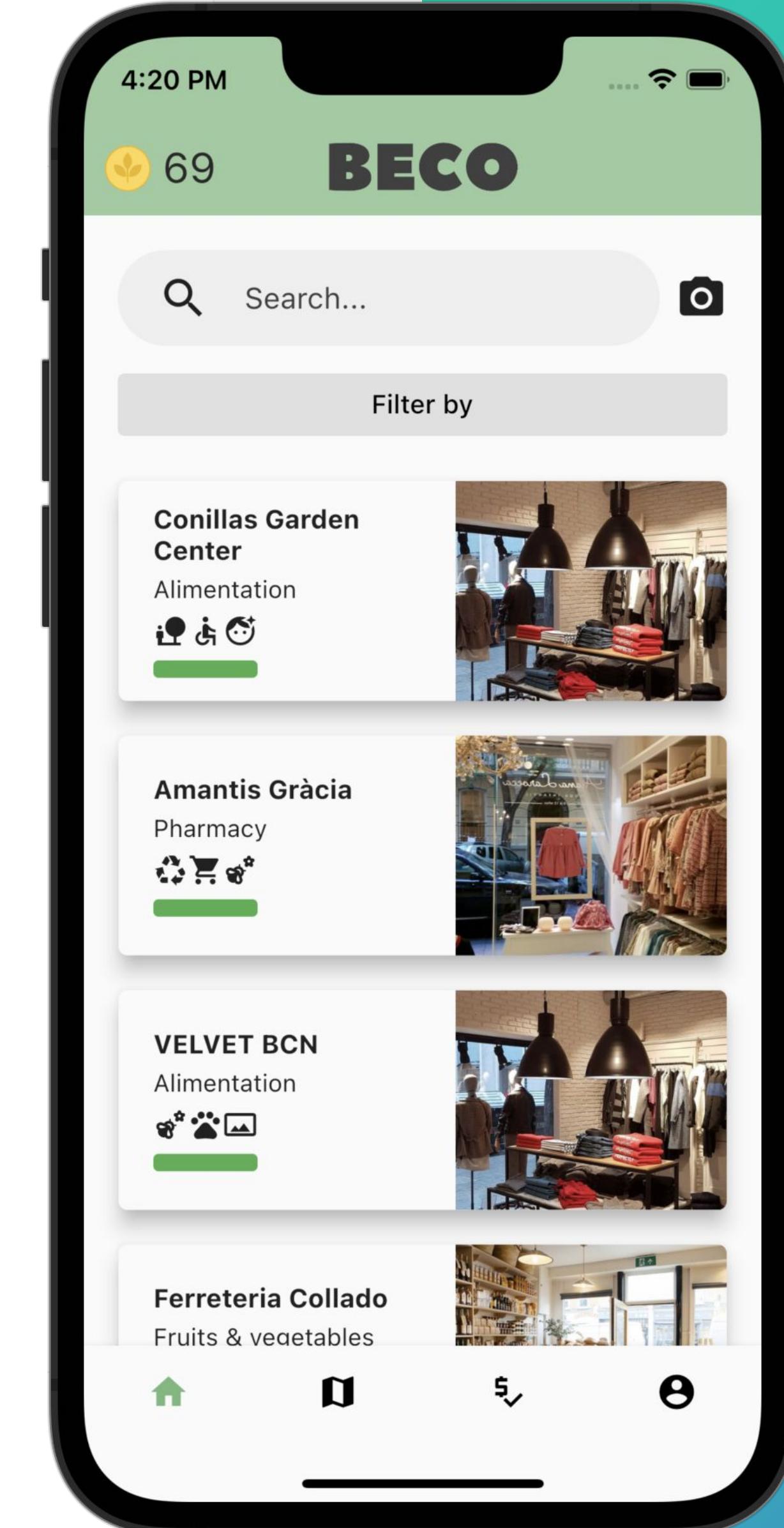
Personalized recommendations

Users can view up to 20 recommended shops. They can also search for a specific commerce.



Shop description

Users can see the tags, location, Air Quality Index, and available Discounts of any specific shop.



BECO App



Discounts and promotions

Users can look for, save, or apply special discounts to certain shops using their becoins.



QR code

The QR code generated automatically by the application contains the information for the shop to track the discount.

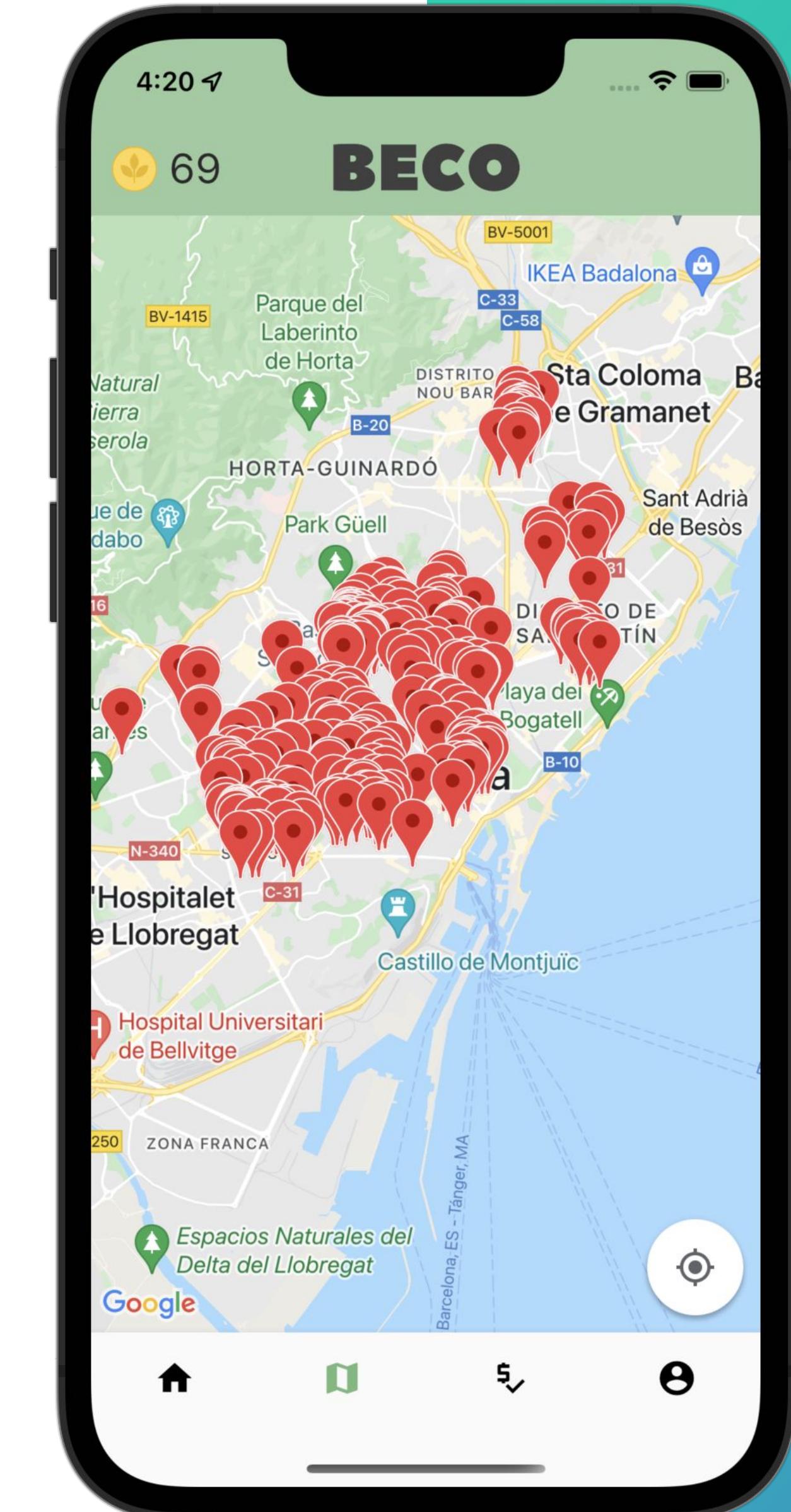


BECO App



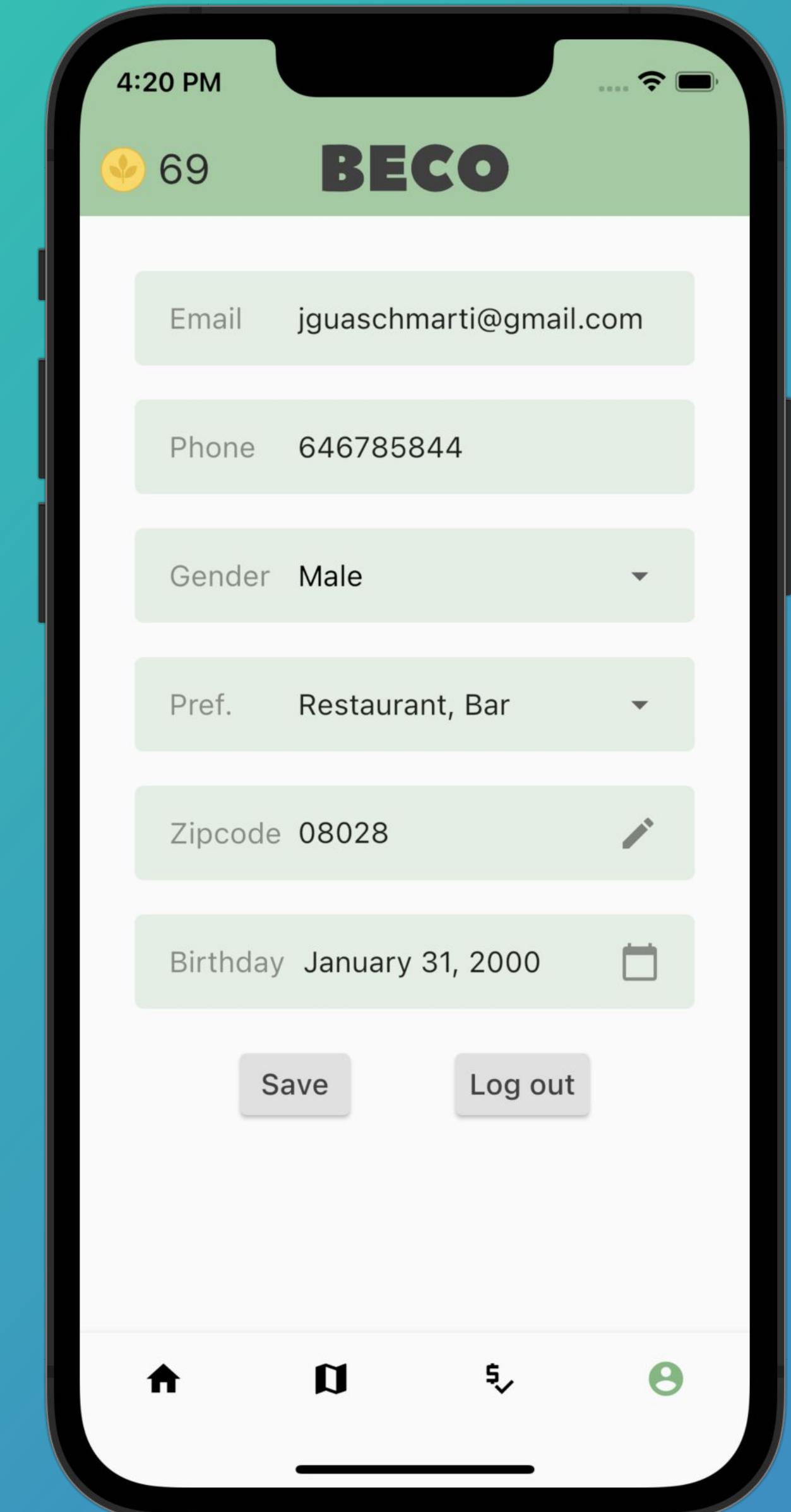
Shops map

Shows the BECO registered stores close to the user.



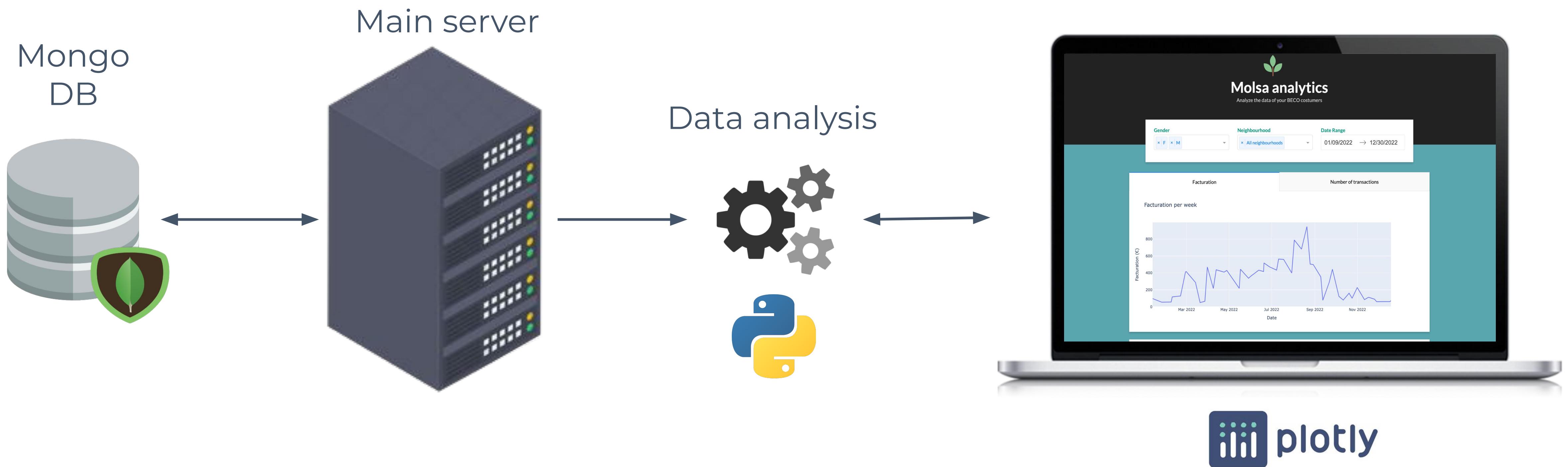
User profile

Users can view and modify their data and preferences.

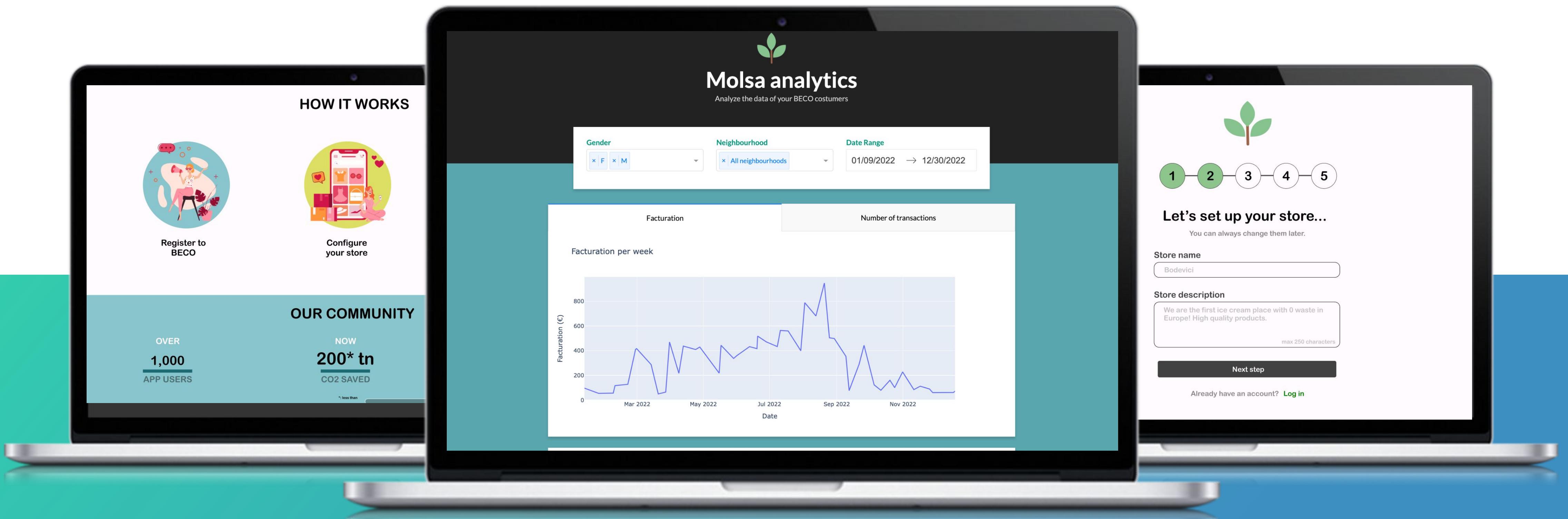


Web

BECO Web



BECO Web



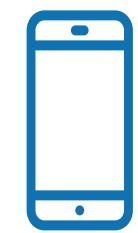
Project cost

Monthly Costs

Direct

200€ / month

Server and storage costs per 1000 users



250€ / month

Firebase authentication for more than 10k users



24k€ / month

Staff costs
(including personal computers, phones, devices, ...)



Indirect

1k€ / month

Others (office, infrastructure, ...)



Activity Based Cost

Global Management

WPO

1760 €

Frontend

WP1

3360 €

Backend

WP2

3200 €

I+D

WP3

1840 €

Integration

WP4

3120 €

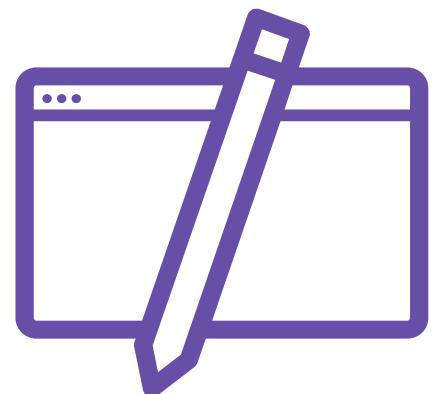
Testing

WP5

2560 €

Lessons learnt

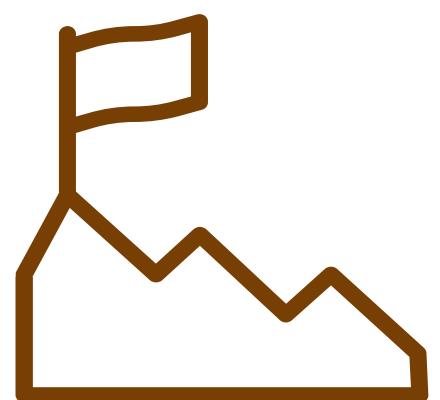
Lessons learnt



Frontend time resources



Organization need



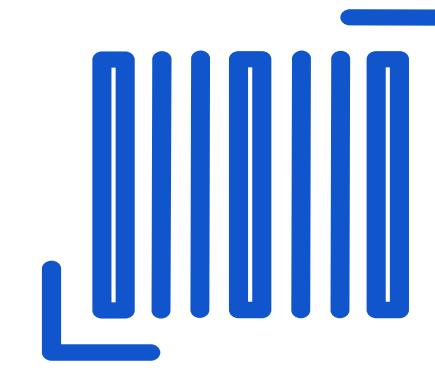
Prioritize

Future work

Future work



Ensure the security
of the whole system



Improve the barcode
functionality



Design the web report
and make it functional



Add and use products
information for the service

Our team

Our team



Jaume Guasch

*CEO & Frontend developer
Data scientist*



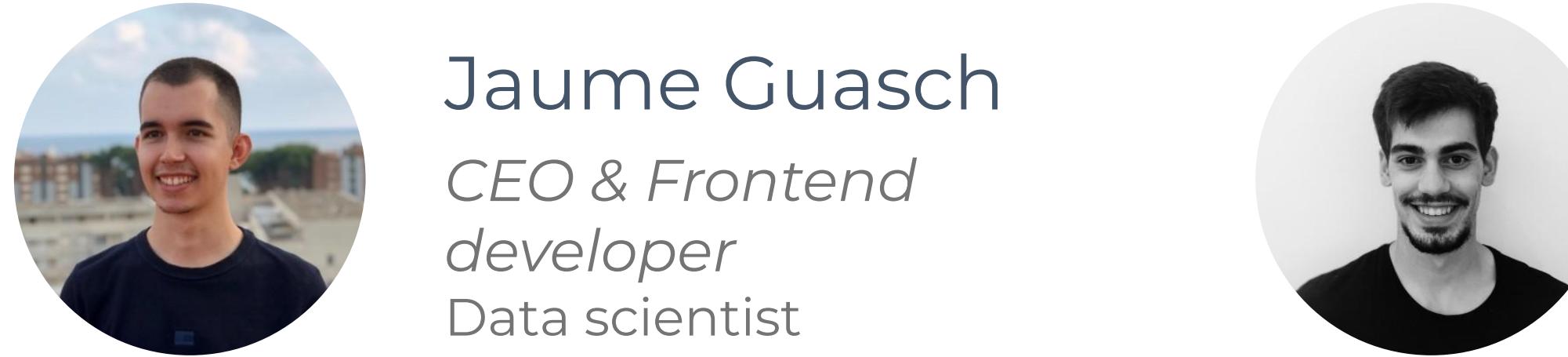
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*Frontend leader
Data scientist*



Miquel Sirera

*CFO & Frontend developer
Data scientist*



Gerard Calvo

*I+D leader & Frontend developer
Data scientist*



Álvaro Domingo

*Backend developer
Data scientist*



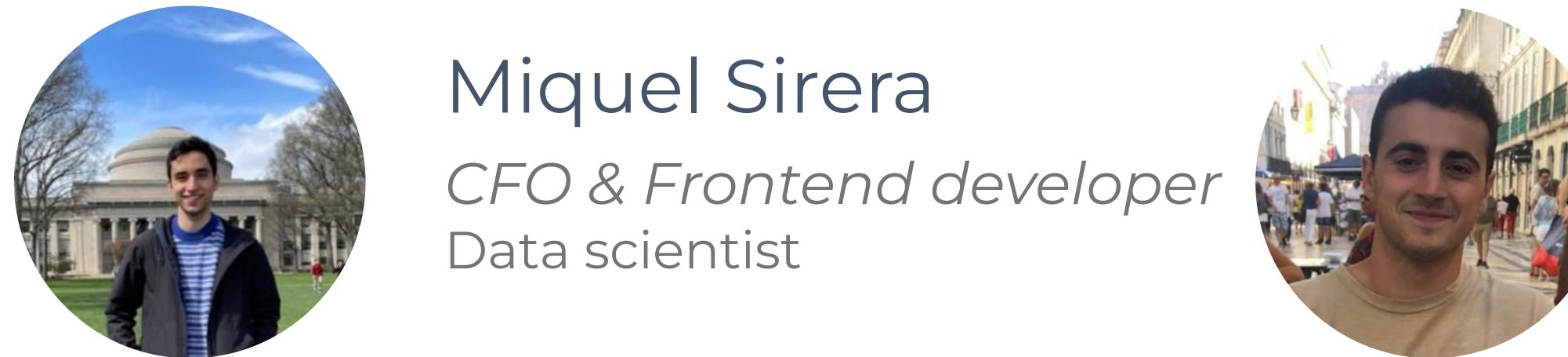
Pau Matas

*CCO, I+D & Backend developer
Data scientist*



Tomás Gadea

*Backend and Operations lead, developer
Data scientist*



Marc de Miguel

*Backend developer
Data scientist & physicist*



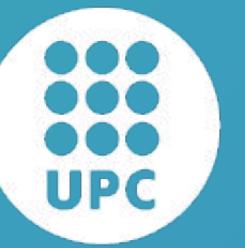
Yikai Qiu

*Backend developer
Data scientist*



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