Start-up Management Project

Software Engineering B

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Outline

VISION

Our vision of start-up development is to learn

The vision of our start-up development is to learn for further investment in our product, which is business model for software development. By applying the expert design thinking through the development phases, we want to learn about software technical and behavioral issues and user activities. It starts with explaining the main scenario, then deconstructing it in sub-scenarios to be implemented individually. The vision goal is to deal with emergence problem type to provide avoidance of problem through the measurements.

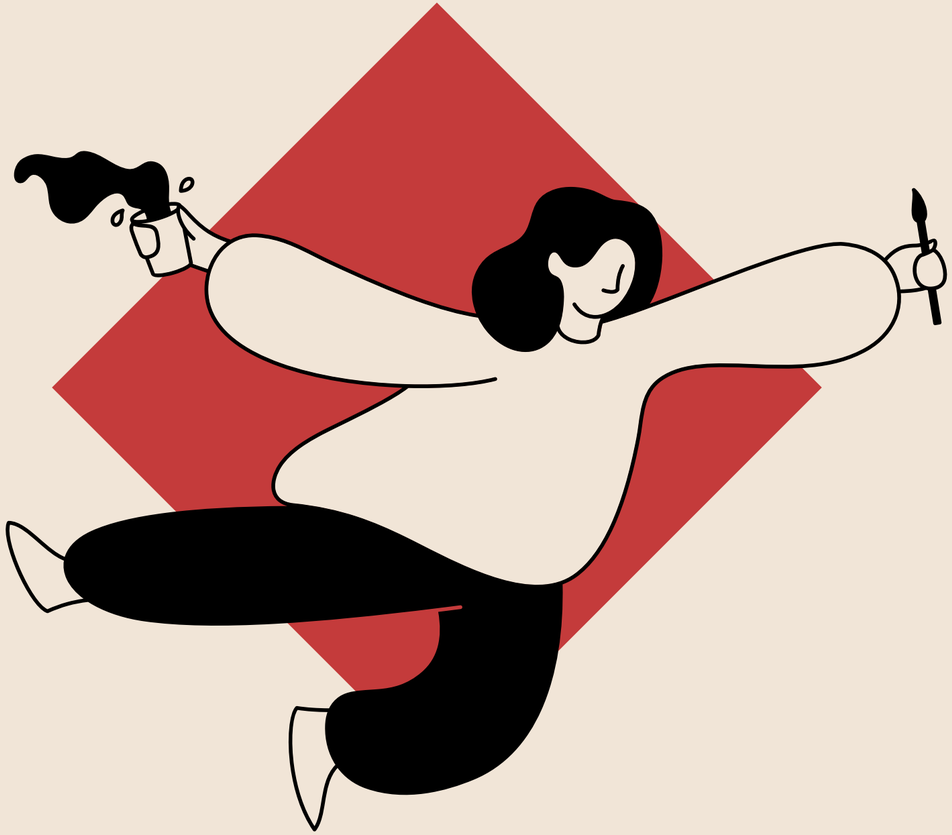
Our mission is to achieve the goal of our vision

Mission is starting the implementation of business model with building the product by involving the right team and the work with right Life cycle technic to produce prototype. To learn from this prototype by the measurement technics (technical and behavioral) to fulfill our investment goal.

MISSION

Problem

We want to invest in car industry and open a car dealership with a service center. From the development we want to learn about our customers, their preferences, cars, problems and to get all the necessary data which we would be able to apply in future. We need data to have better understanding of our customers and their cars to provide outstanding service. To be able to implement our idea, we need to build an application.



Solution

In the application we are going to develop, car owners can register themselves and their car, as well as all the technical data of the car. In case of any problem with the vehicle, the functionality of our application will help the user find the most convenient car service. In addition, our application will have a customer base where the user, if desired, will be able to buy a new or used car, or sell his own. In line with all the functionality and convenience for the user, in our application will be set all necessary measurements to provide us with data, so we can achieve the vision of the development.

iFix

Our Team

Project Manager - Nazar Zhanabergenov

Software Developer- Ravshanbek Musaev

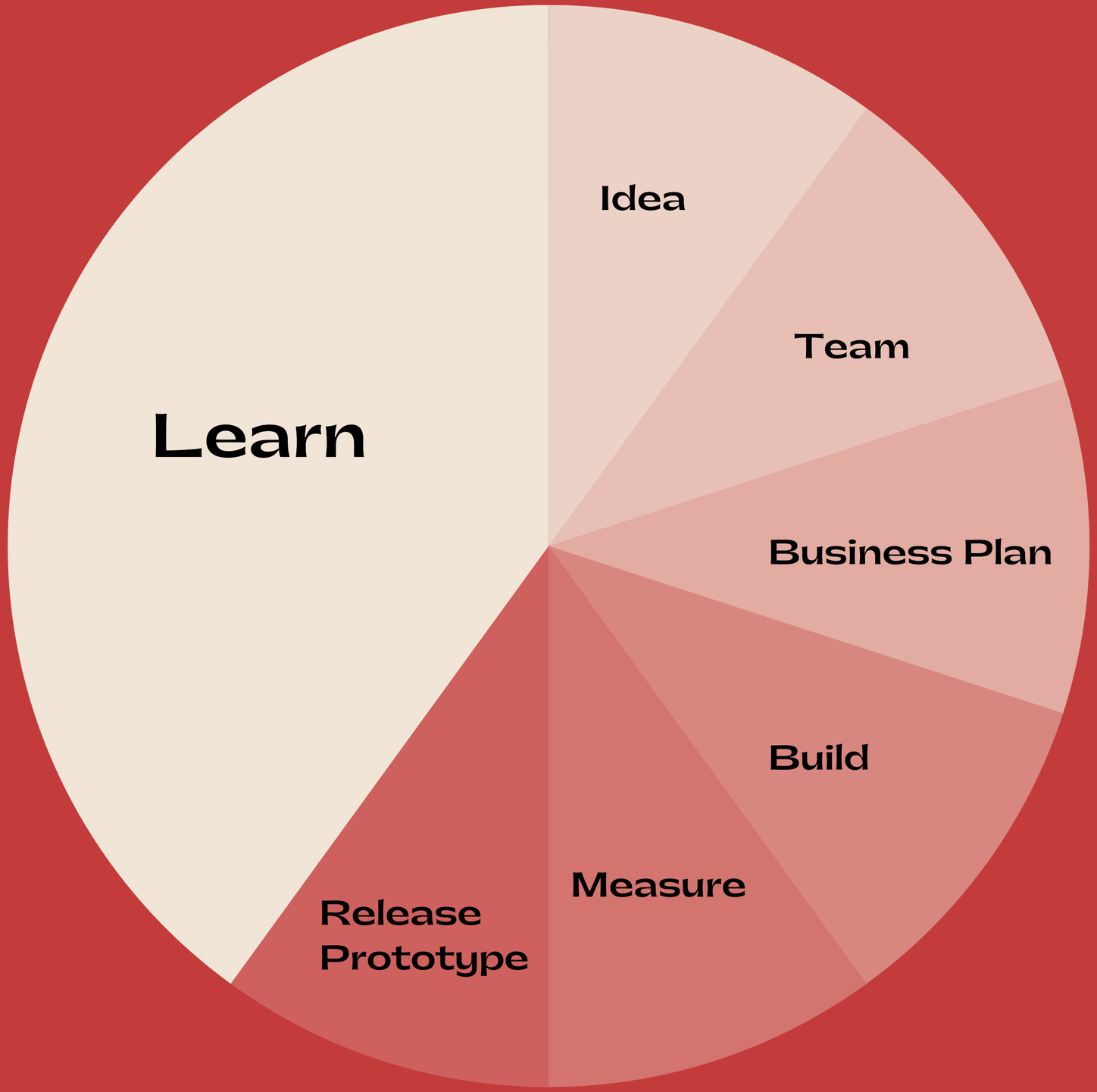
Software Designer - Kateryna Sadovska

Business Model

- Idea and Vision
- Gather Team
- Business Plan.
- Build an application following V&V Lifecycle Model – Feasibility study, Requirements Analysis and Definition, Software Design (considering Metrics that we will measure), Testing. Verification and Validation occurring after each phase of Build to ensure that development is going in right way.
- Measure. Collect behavioral and technical data.

- Release prototype. The prototype will be already working model of the development with metrics. It will allow developers measure technical data and fix any occurring errors, and to collect behavioral data about users of the application.

- Learn – analyze the data.


Learn
Idea
Team
Business Plan
Build
Measure
Release
Prototype

Enforcing the Business Model through the Verification and Validation.

Standart rules:

1) Clearly define the Vision and Mission of the start-up development.

2) Gather the team according to the roles.

3) Propose the Business Plan, define what Lifecycle Technic to use to build the Prototype.

4) Build the application following the Lifecycle Technic:
- Feasibility Study. Output – tables of users and activities.
- Requirements Analysis. Output – mapping of users and activities.
- Requirements Definition. Output – functional and non-functional requirements.
- Software Design. Output – design of application according to functional and non-functional requirements and consider Metrics that we will measure.
- Software development. Output – build the prototype based on output of Software Design and Requirements Definition.
- Testing. Output – report of testing the prototype.

5) Measure. Set all necessary metrics and parameters, measure them.

6) Release Prototype. Start measure and collect data.

7) Learn. Analyze the acquired data for future use.

I D E A

We develop an application to help our users solving their car problems, direct to the nearest service centers. Also, we provide platform for buying and selling cars.

I D E A

For the development we will collect data: user's age, gender, geolocation, health condition. About car: manufacturer, model, production year, mileage, color, insurance, incidents history, all data about technical condition, number of drivers, if pets were in car. Technical data as visibility, connection, availability, accessibility, security, delays, downtime, performance, errors will be necessary to improve and maintain the application.

After this we will have enough insight knowledge to open our own car dealership with a service center. Also, we will sell the Data to car manufacturers, car insurance companies, other car dealerships, service centers, car rental companies and taxi services. By collecting data, we will be able to provide our customers with the best quality service.

Feasibility Study

- Car owners
- Users without car
- Admin

- Sign up
- Login
- Buy car
- Sell car
- Fill in application

- P2P chat
- Edit problems List
- Add service center
- Edit serv. cen. info
- Delete service cen.

- Add car data
- Edit car data
- Delete car data
- Edit profile
- Search for problem
- Receive notif.
- Problems history
- Map of services
- View car offers
- Post import. info
- Send notifications
- View metrics
- Access database

- Car search
- Filters
- Wish list
- Search history
- Viewed car history

Edit profile

Sign up

Login

Receive notif.

Add car data

Search for problem

Search history

Edit car data

Viewed car history

Car owners

Delete car data

P2P chat

Users without car

Problems history

Admin

Buy car

Map of services

Sell car

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Map of services

Filters

View car offers

Car search

Delete service cen.

Edit problems List

Edit serv. cen. info

Post import. info

Car owners

Users without car

Admin

Add service center

View metrics

Access database

Send notifications

Requirements definition

Functional and non-functional requirements.

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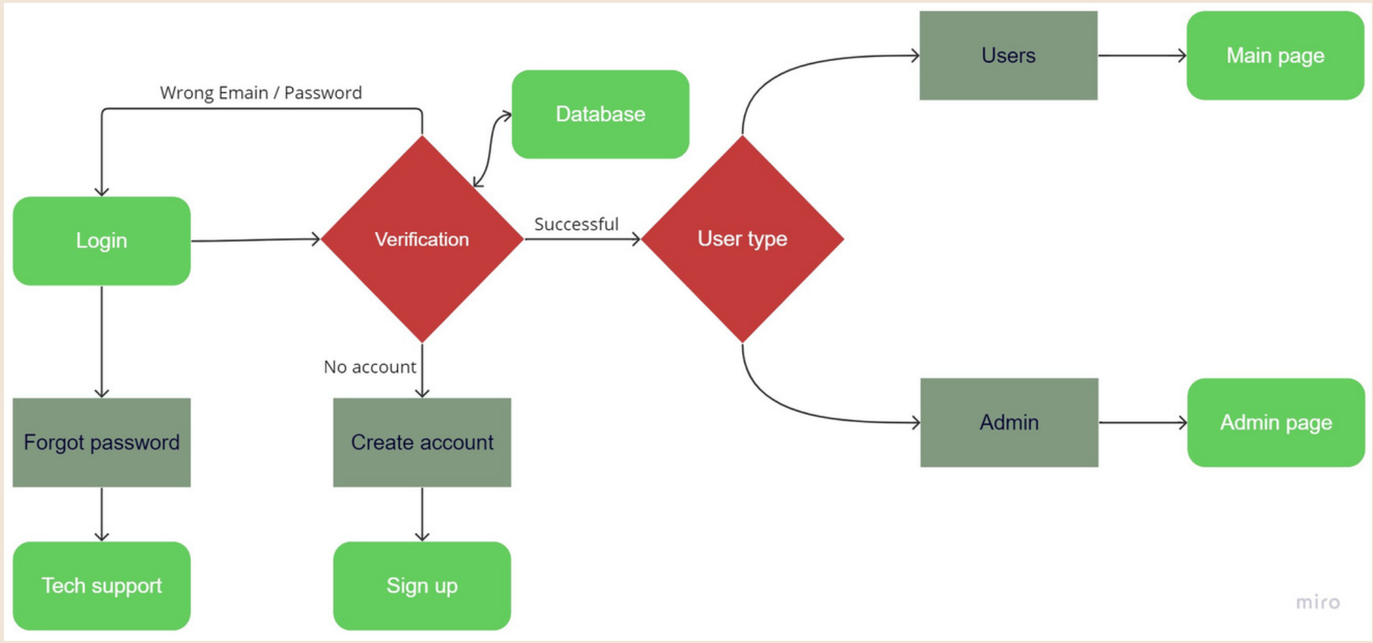
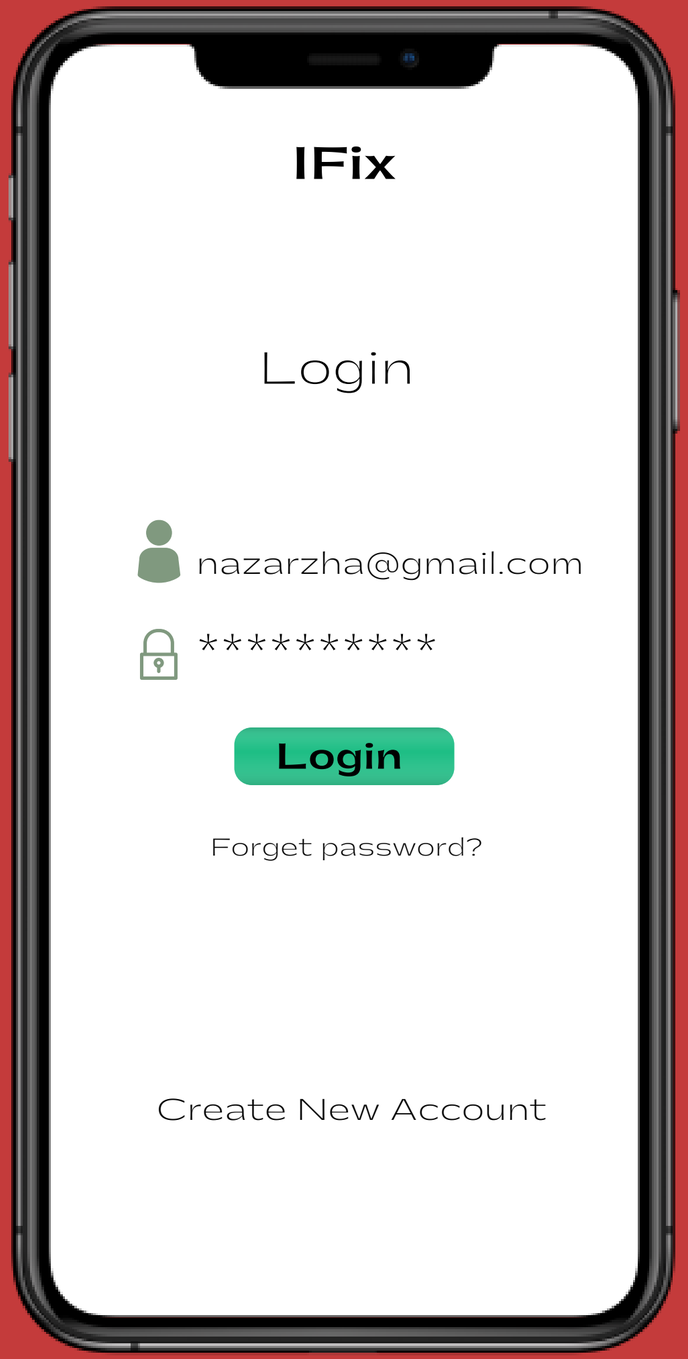
Login

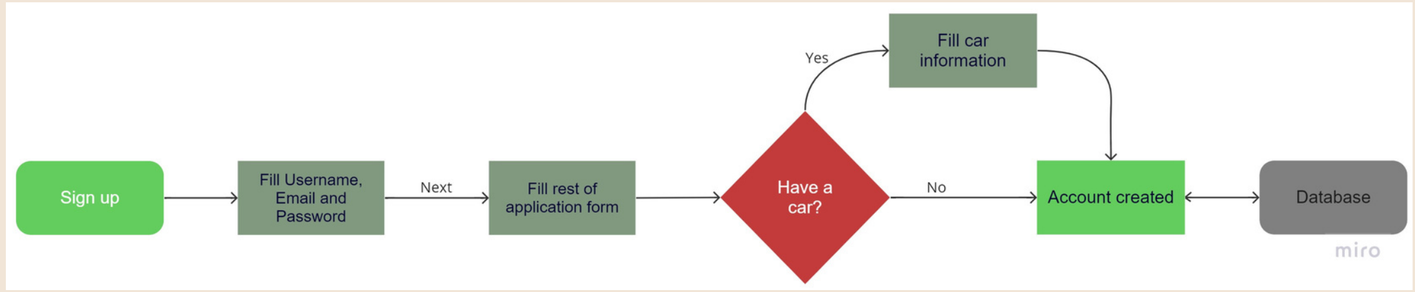
Functional:	Non-functional:
Email and password fields	Accessibility to database
Sign in button	Read from database
“Forget Password” button	Verification
“Create an account” button	Validation

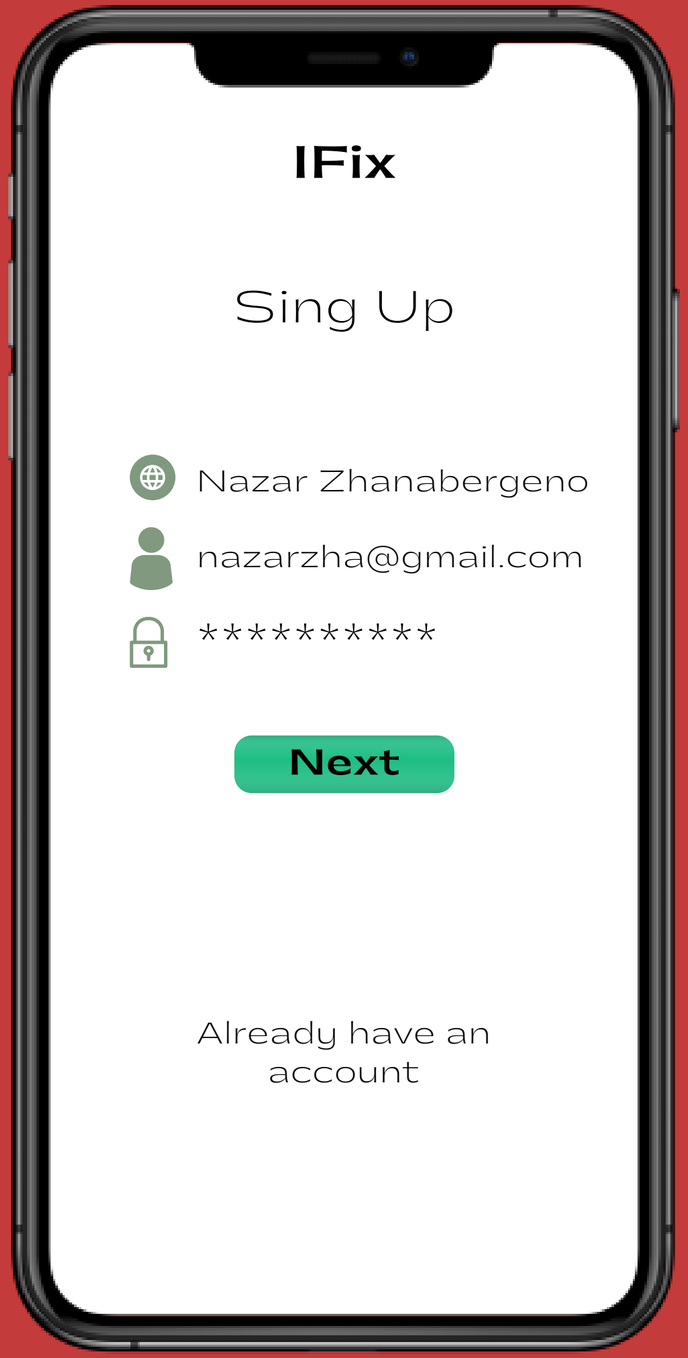


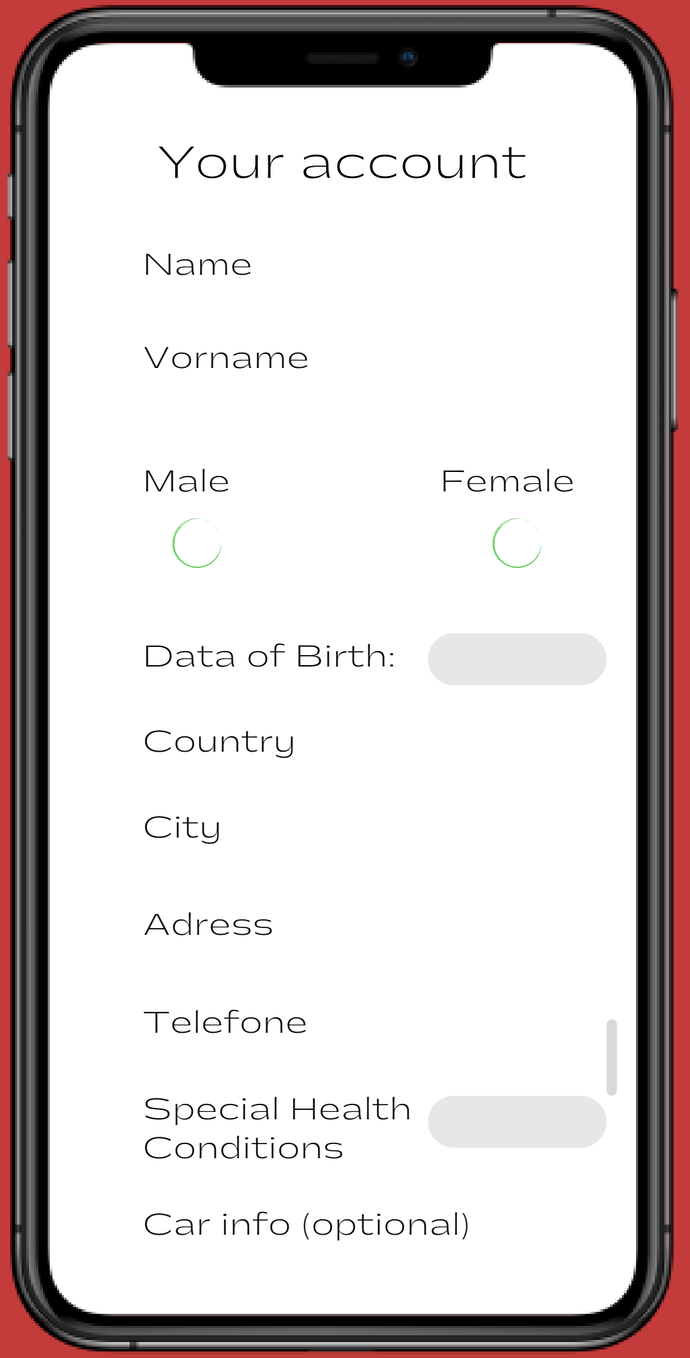

IFix
Login
nazarzha@gmail.com
****
Login
Forget password?
Create New Account

Sign up

Functional:	Non-functional:
Username	Accessibility to database
Password	Write to database
Repeat password	Password encryption
Email	Security

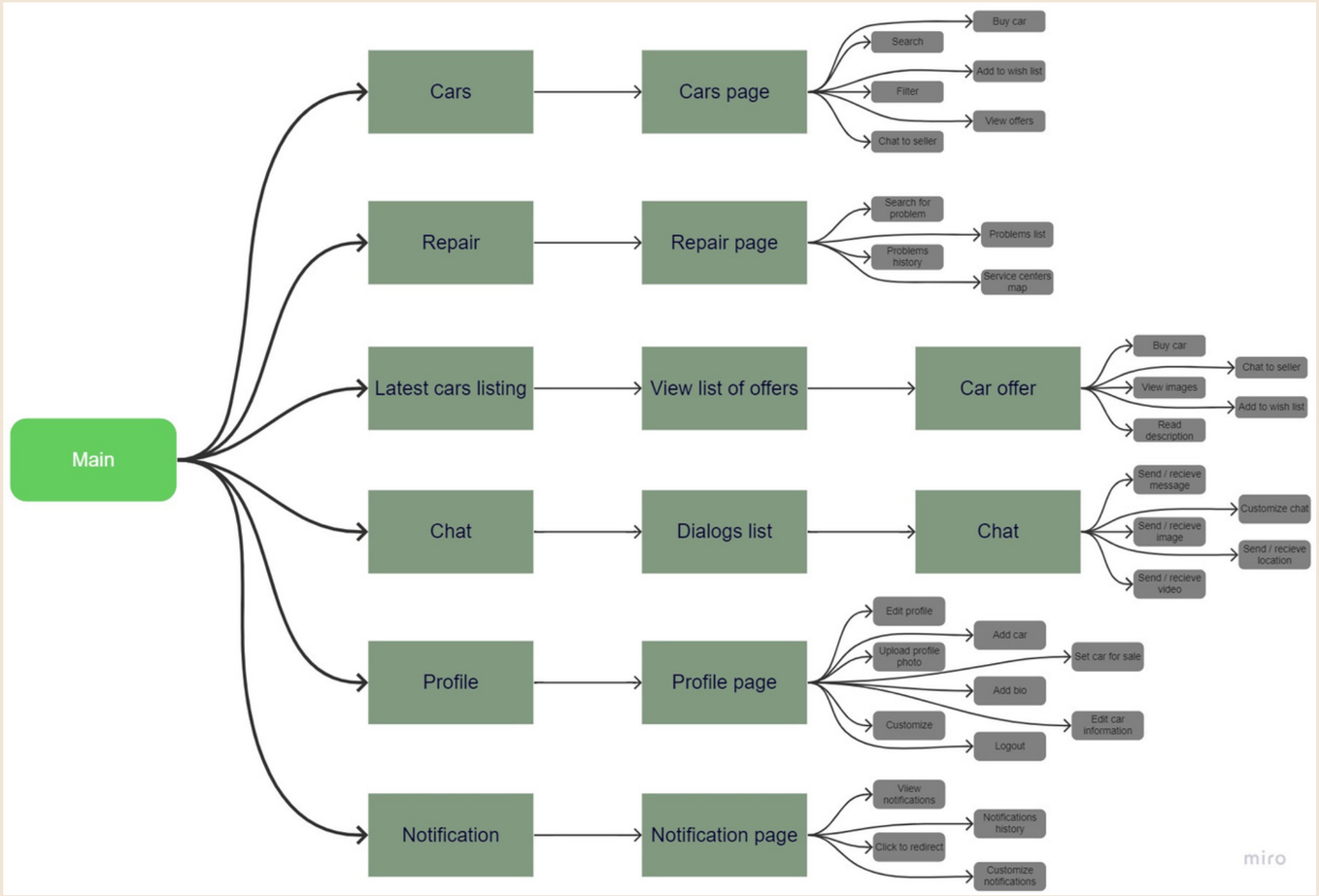



IFix
Sing Up
Nazar Zhanabergeno
nazarzha@gmail.com
****
Next
Already have an account


Your account
Name
Vorname
Male
Female
Data of Birth:
Country
City
Adress
Telefone
Special Health Conditions
Car info (optional)

Main

Functional:	Non-functional:
Cars	Cars and Repair
Repair	Latest cars listing
Latest cars listing	Chat
Notifications	Profile



IFix

Cars

Repair

Latest: Filters

BMW M4

2022

Ravshan 5

Condition: Good

68.000$

Porsche GT3 RS

2018

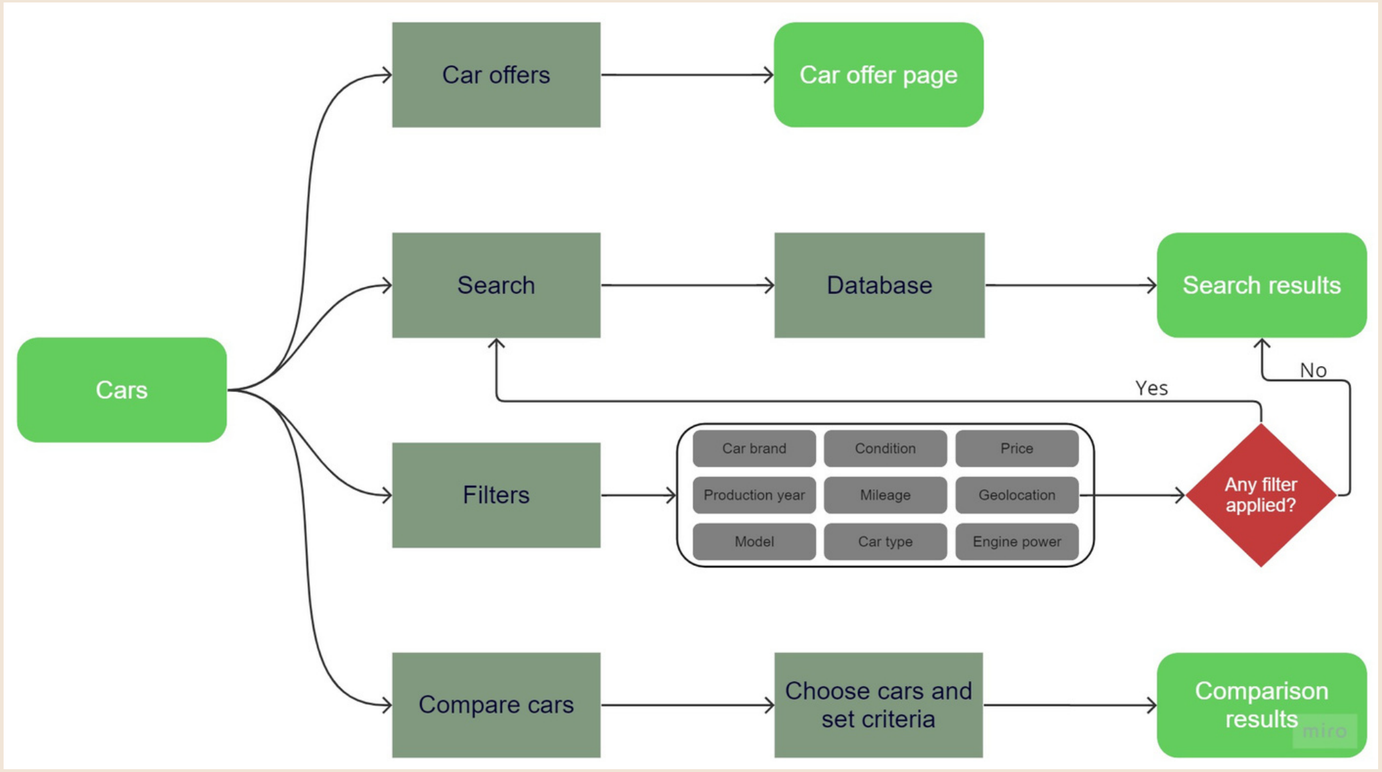
Kateryna 5

Condition: Totalled

50.000$

Cars

Functional:	Non-functional:
Car listings	Database
Search and filter	Security
Car comparison	User-Friendly Interface
User reviews and ratings	Scalability



IFix Cars

Filters Compare

Audi R8

2020
Pizza Guy 4
Condition: Good

100.000$

Mazda Miata

1994
Barbi 5
Condition: Good

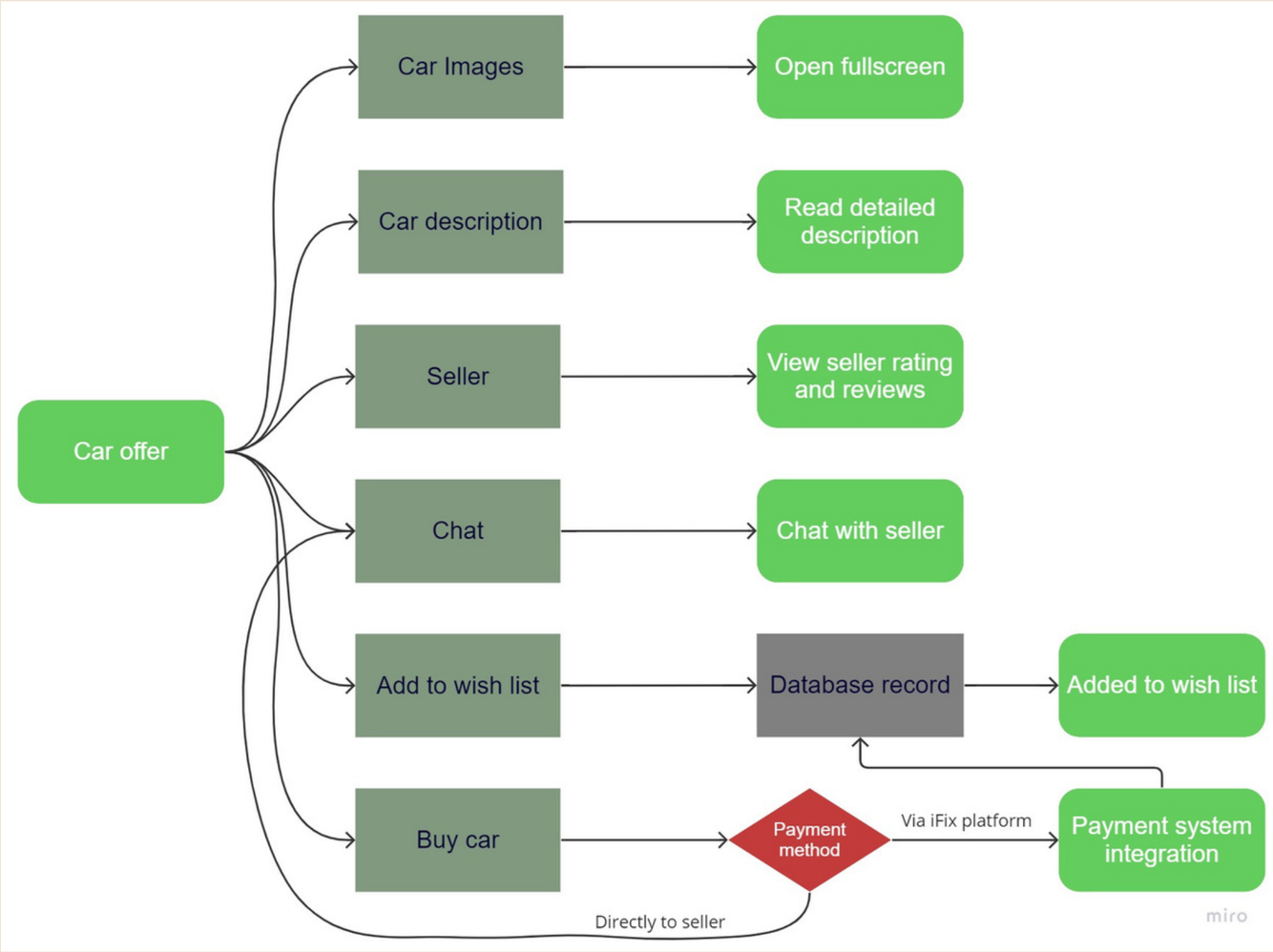
25.000$

Mercedes -Benz GLE

2023
Eduardo 5
Condition: Good

Car offer

Functional:	Non-functional:
Car images	Database
Detailed car information	Security
Seller’s rating	Visibility
Chat	Verification



IFix

1 of 12

Mazda Miata

Barbi

25.000$

Potsdam, Germany

Chat

Add to WishList

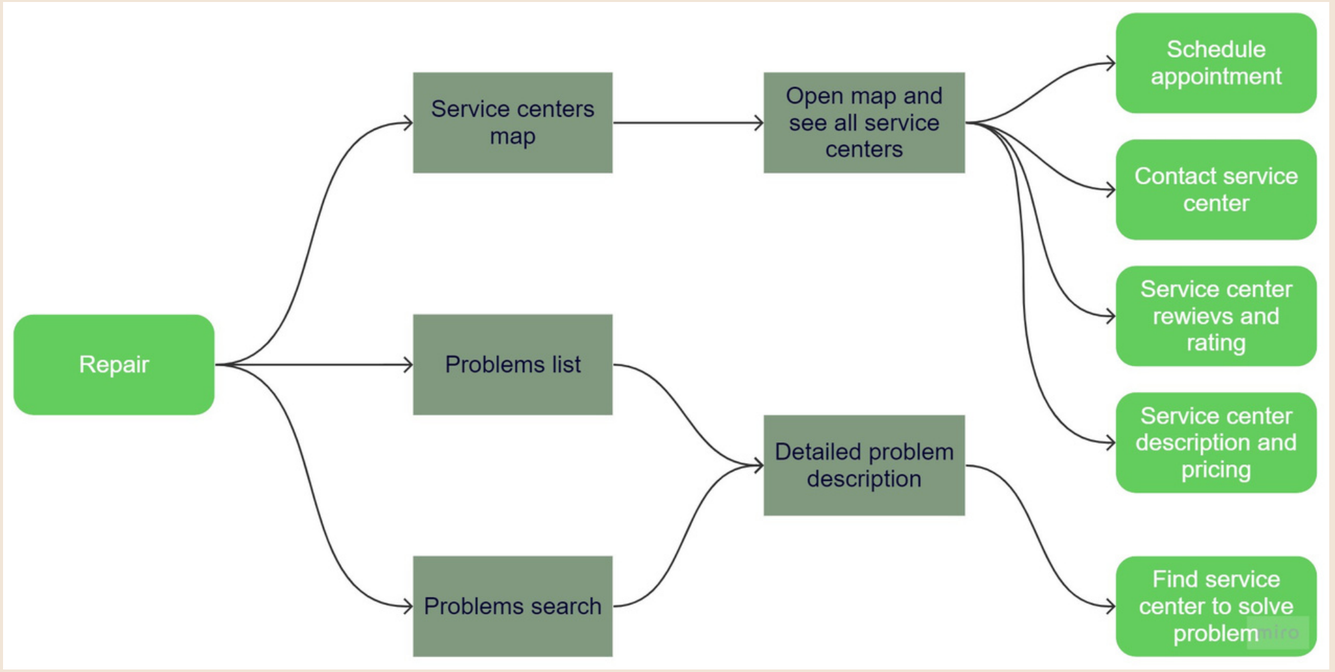
About

Condition: Good

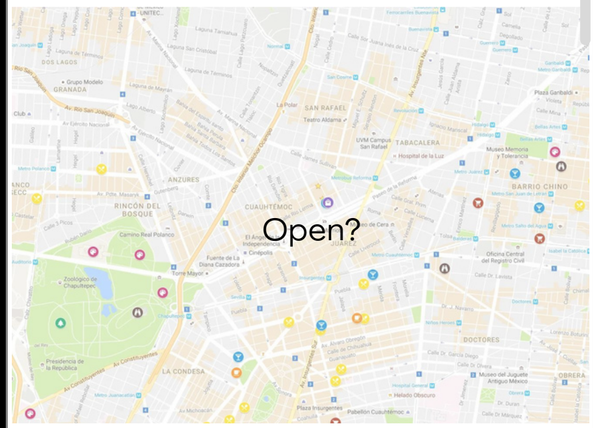
Amount: 1 in stock

Repair

Functional:	Non-functional:
Type of problems listing with icons	Performance
Search	Security
Service centers map with location-based service recommendations	User-Friendly Interface
Service provider contact	Scalability



IFix Repair



Traction control

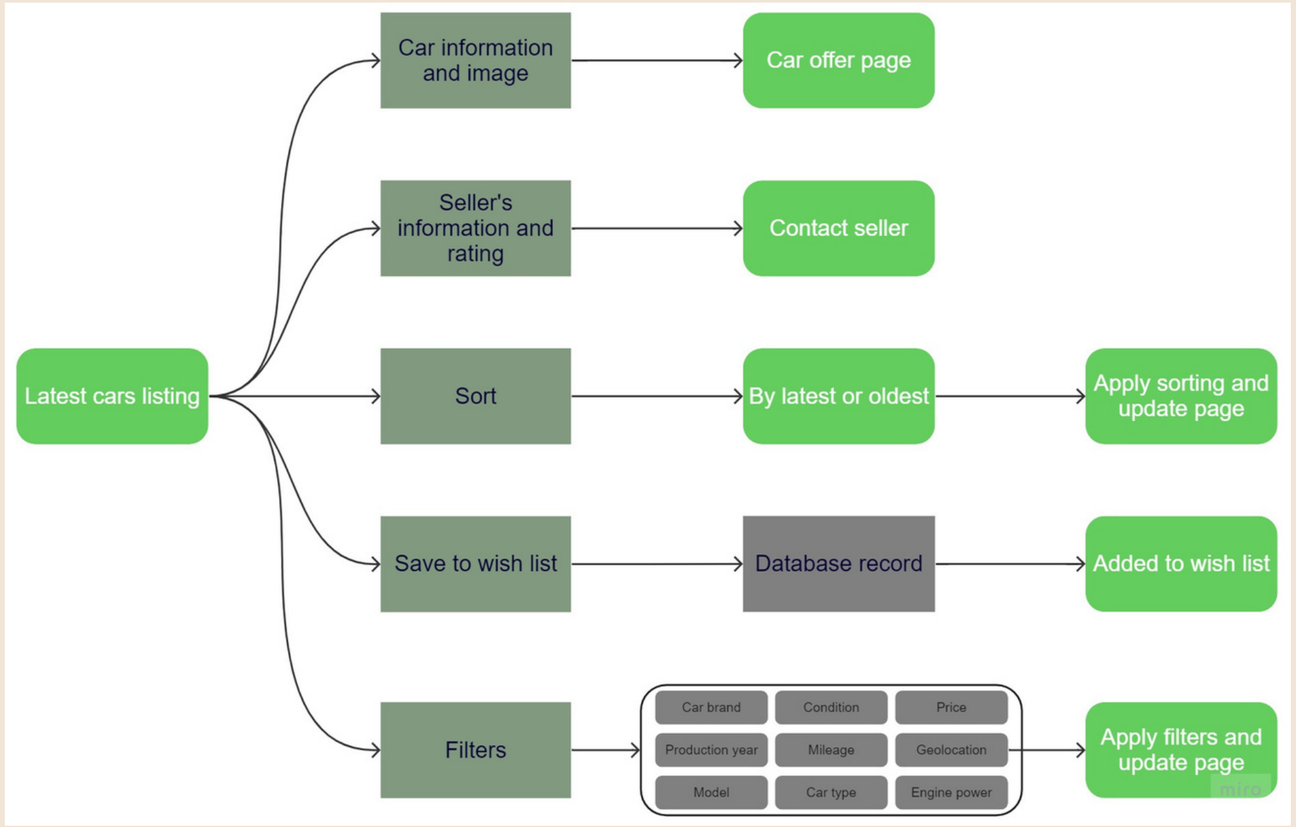
Brake system

ABS SYSTEM

TIRE PRESURE
WARNING LIGHT

Latest cars listing

Functional:	Non-functional:
List of latest car offers	Redirect
Car information	Security
Filters	Database
Save to wish list	Mobile adaptation



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Main

Cars

Repair

Latest: Filters

BMW M4

2022
Ravshan 5
Condition: Good

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Porsche GT3 RS

2018
Katertyna 5
Condition: Totalled

50.000$

IFix

Main

Latest: Filters

BMW M4

2022
Ravshan 5
Condition: Good

68.000$

Porsche GT3 RS

2018
Kateryna 5
Condition: Totalled

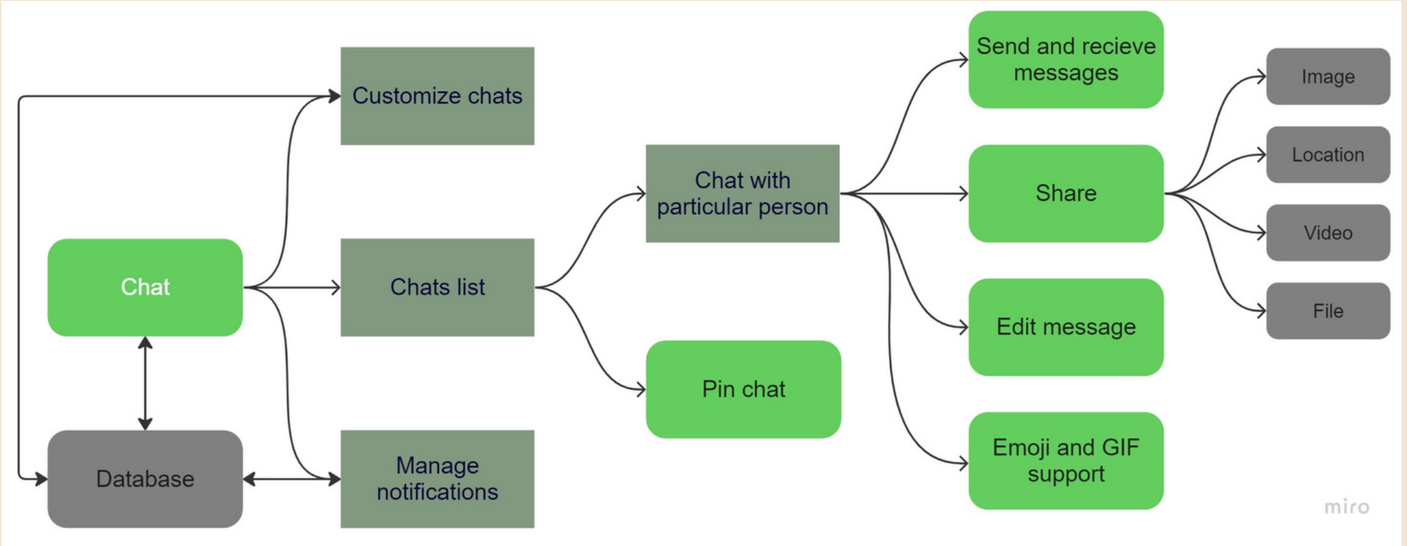
50.000$

Toyota Corolla

2019
Artur 4
Condition: Good

Chat

Functional:	Non-functional:
Real-time messaging	Chat history storage
User authentication	Security
Message sending and receiving	User-Friendly Interface
Emoji and GIF support	Scalability



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Chat

Ravshan
When we can me...

Lex
Hi!

Sophia
I HAVE 3$!!!!!!!

Barbi
Can you do 20k?

Misha
You are so cute<3

Baizhan
No, thanks a lot

Mark

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Barbi

Good evening!

I saw this offer and wanted to buy this car

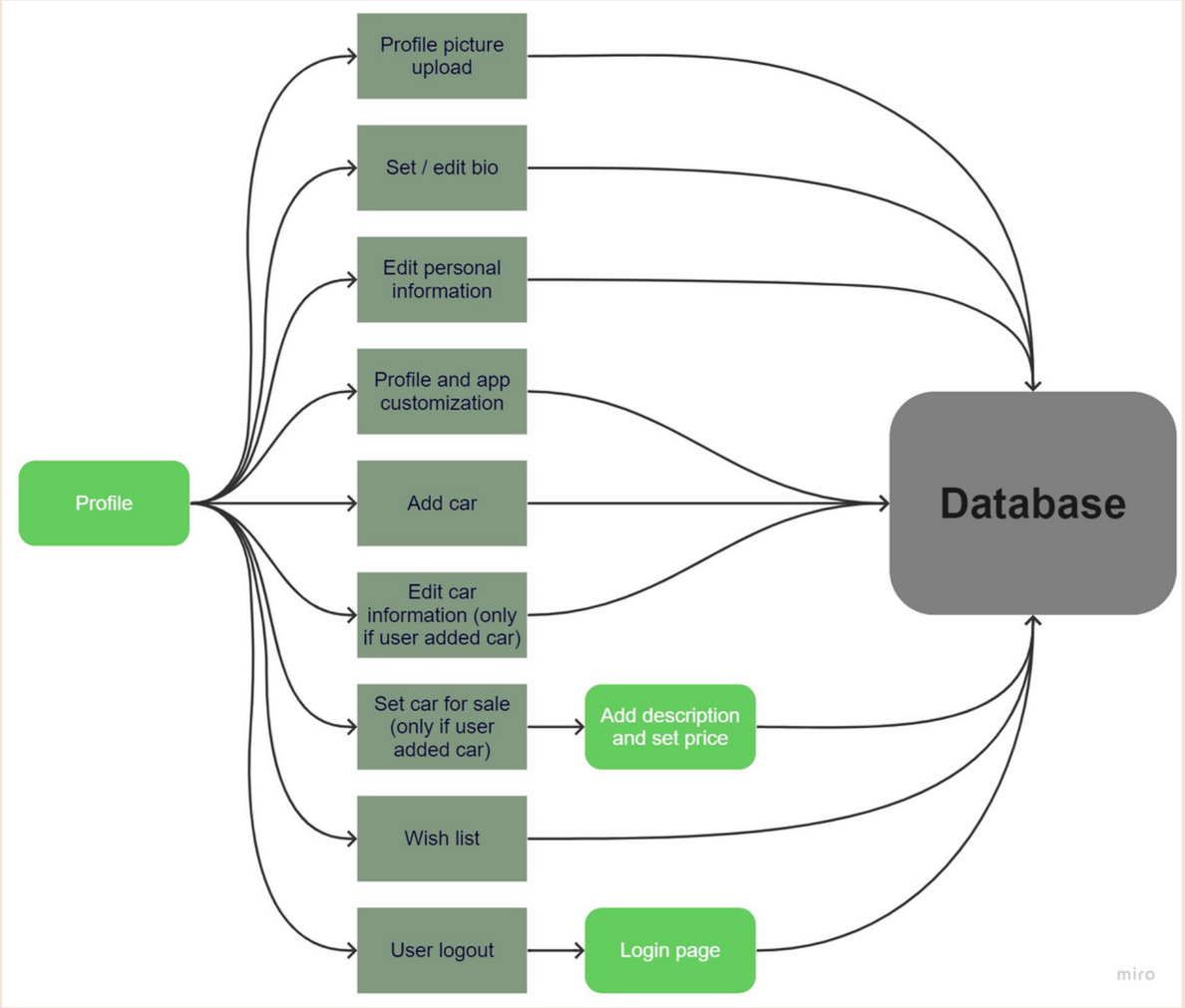
Is it still available?

Good evening. Yes, available

Can you do 20k?

Profile

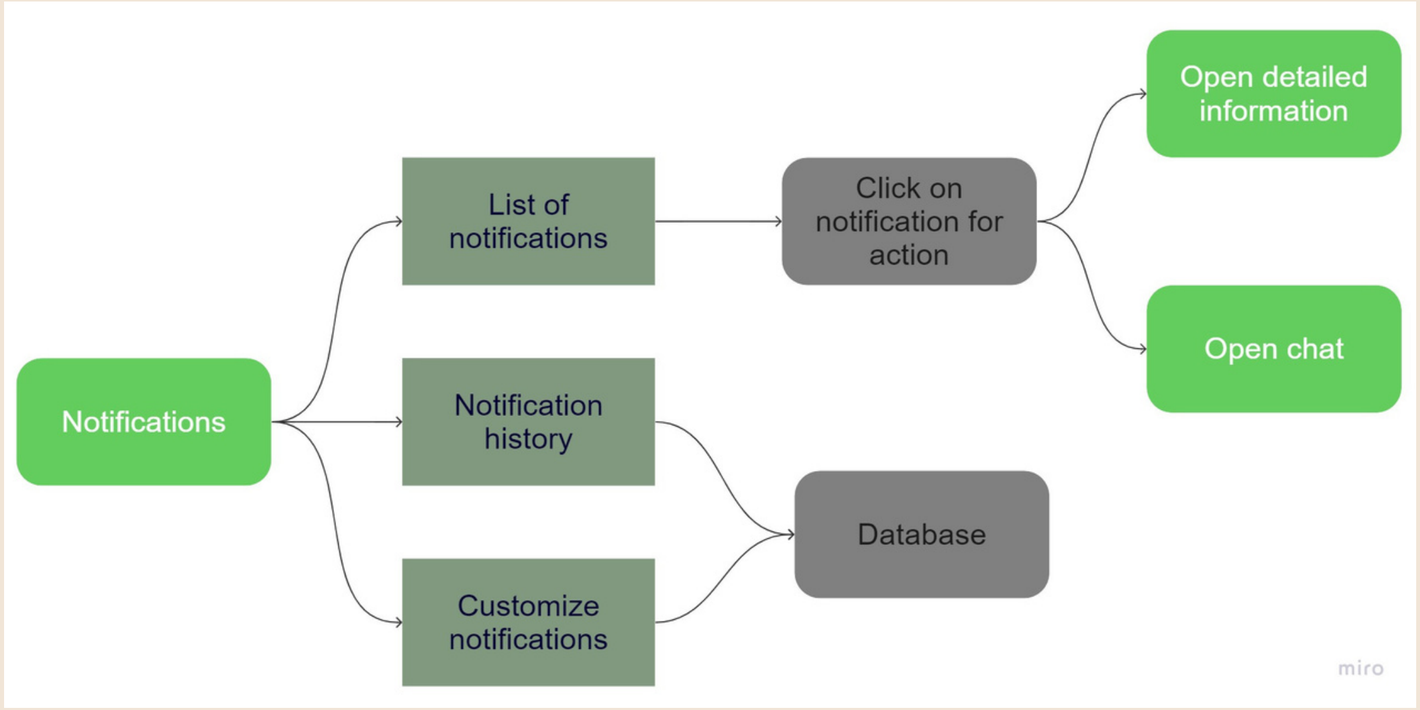
Functional:	Non-functional:
User logout	Performance
Profile picture upload	Security
Bio or about me section	Mobile responsiveness
Add car	Scalability




IFix
Profile
Nazar
I wanna die
nazarzha@gmail.com
Personal information
Customisation
Add car
Set car for sale
Wish List
Log out

Notifications

Functional:	Non-functional:
Notification display	Data protection
Real-time notifications	Security
Clickable notifications for action	Mobile responsiveness
Notifications history	Error handling



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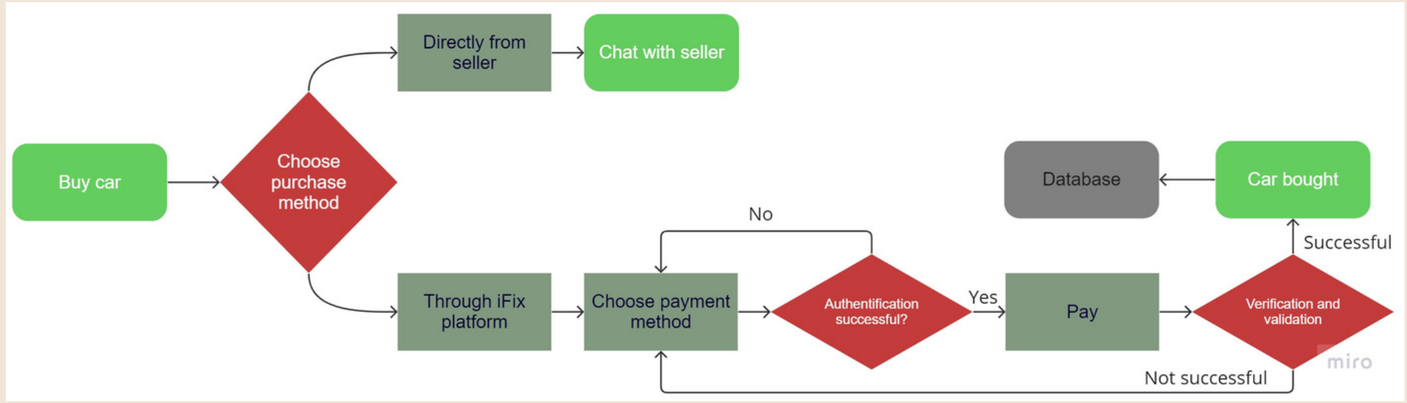
Notifications

Barbi sent you a messege

You have a special proposition!
CLICK HERE

Buy a car

Functional:	Non-functional:
Purchase way: directly from seller – chat	Data protection
Purchase way: through our platform – choose payment method	Security
Pay	Encryption
	Redirect



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Buy

Mazda Miata

Buy

Barbi
1994
54.987 km

Total:
22.000$
twenty two thousand american dollars

Contact:

Name:
Nazar

Forname:
Zhanabergenov

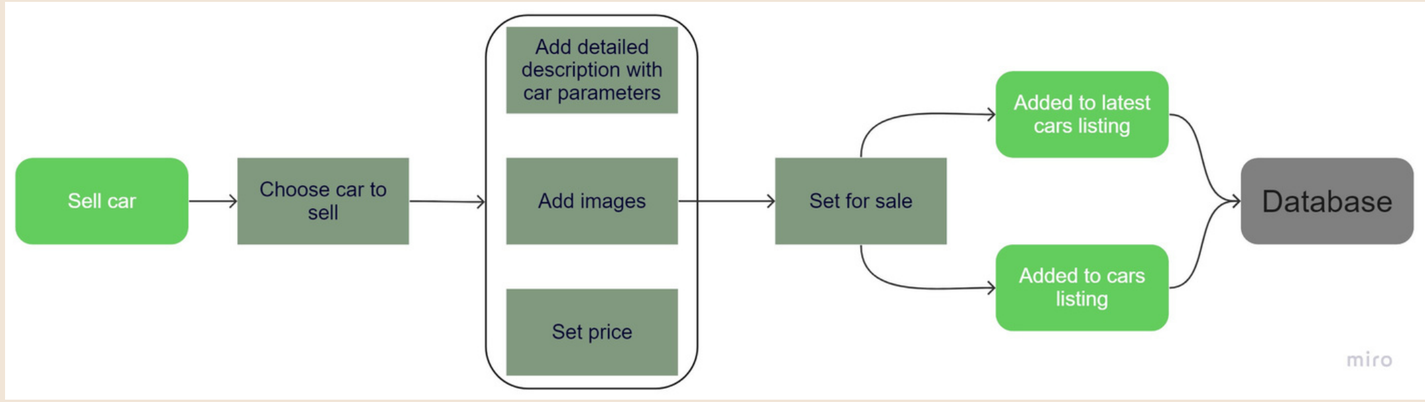
Number:
+8 701-222-77-20

Email:
nazarzha@gmail.com

City:
Where?

Sell a car

Functional:	Non-functional:
Car Listings	Performance
Search and Filter	Security
Contact Seller	User-Friendly Interface
Car Comparison	Error Handling



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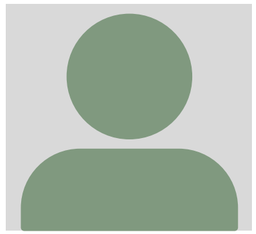
Sell a car



Add photos

Info:

Which car?

Model

Year

Price:

$

Sale?

Yes

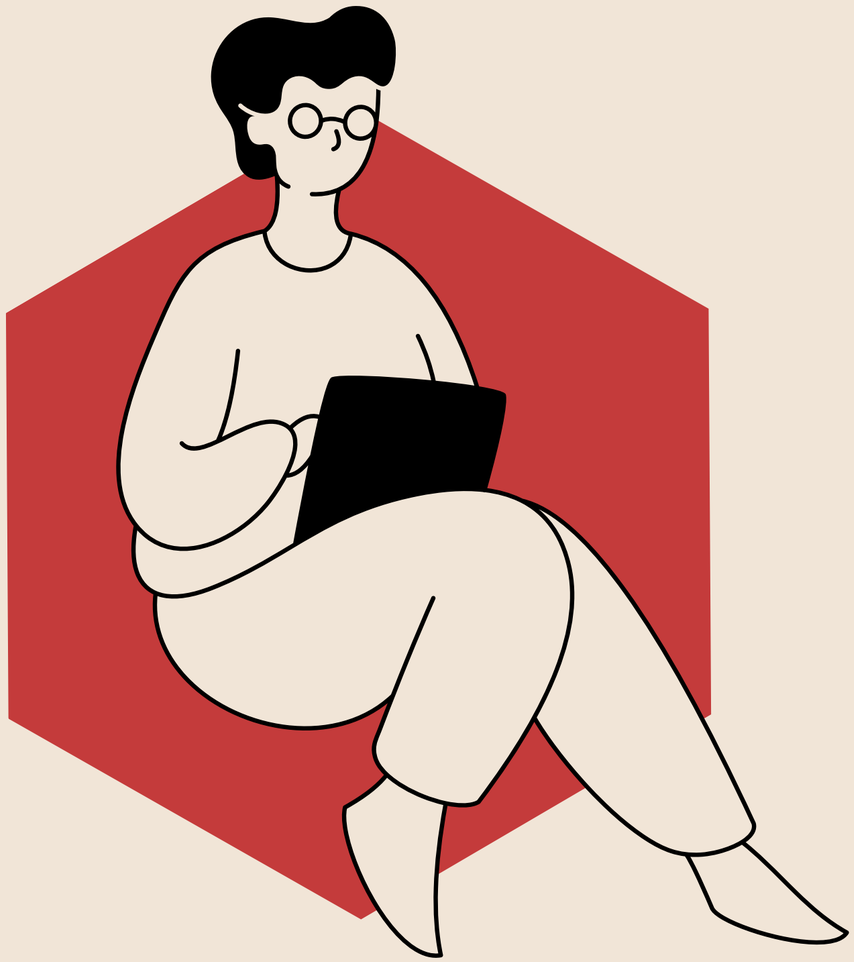
No

Your info:

Name:

Forname:

Number:



Measurement

Activities	Metrics	Parameters

Login	response time, connection with database	user ID, number of users, user's number of logins per day, session duration
Sign up	response time, availability, visibility, database efficiency check	email, username, number of signups (new users) per day
Fill in application	database efficiency check, connection	user's first name, last name, gender, age, country, city, address, phone number, special health condition, car info (optional)
Add car data	correctness of database "create record" and "write"	car brand, model, year, type, mileage, condition, color, accidents history, problems, insurance, pet in the car, number of drivers
Edit car data	connection with database, visibility, error handling	frequency of car data edits, last oil change, last filter change, etc
Delete car data	correctness of data base "delete record"	number of users deleting cars, most deleted cars
Edit profile	correctness of database "edit record"	which data users edit the most, frequency of edits

Search for problem	keywords, correctness of database “read”, visibility	keywords, frequency, most searched problems, problem – car brand/ model/ type/ mileage correlation
Problems history	data storage check, connection to database, visibility	problem – user age/ gender/ country/ city correlation, problems – location correlation
Notifications	notifications delivery check, connection	most opened notification type, notifications check frequency
Map of service centers	GPS connection correctness, network stability	current geolocation, most visited locations, service centers availability, frequency of map using, most visited service centers
View car offers	session start and end, database stability check, correctness of database “read”	most popular: car brand, car type, car model, car color, car year, car mileage, price range, sellers
Buy car	database connection, security, encryption correctness	most buying: car brand, car type, car model, car color, car year, car mileage, price range

Sell car	start and end of offer time, availability, database check	most selling: car brand, car type, car model, car color, car year, car mileage, price range
Car search	keywords, correctness of database “read”, visibility, search speed	keywords, frequency, duration, which time search the most, most searched: car brand, car type
Filters	database response, correctness of filters applications	most used filters, frequency of filters usage
Wish list	items limit, database connection and visibility	most added to wish list: car brand, car type, car model, car color, car year, car mileage
Search history	keywords, correctness of database “read”, visibility, database connection	keywords, frequency, most searched: car brand, car type, car model, car color
P2P chat	connection, response time, correctness of message and data share	session duration, frequency, with who user chats the most, sellers that get most messages

Learn

What and For What

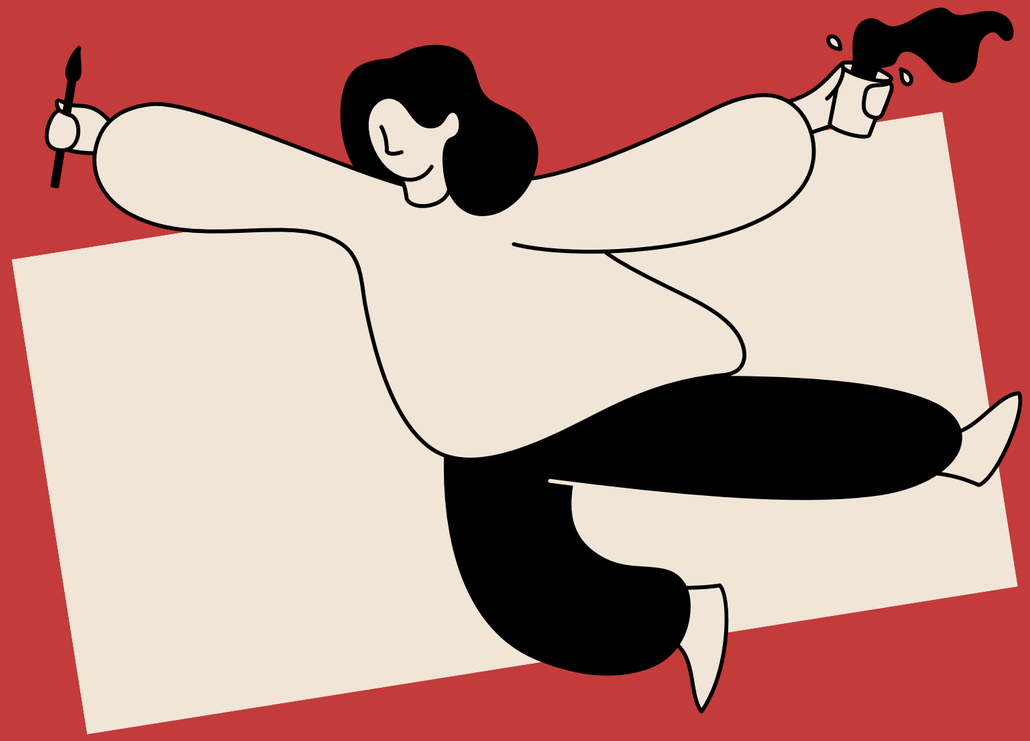
What

User’s age, gender, country, city, address, most visited places, users who own cars locations, most popular services, most searched problems, most searched and buying car brand, car type, car model, car color, car year, car mileage, price range, sellers, view – buy ratio, most added to wish list, most deleted cars.

For What

All these data will help us to decide where to open our car dealership with service center, which cars are in most demand to sell them, which cars to avoid selling (not reliable / not liked by users) and which services are most popular, so we provide them.

For our own investment



For our own investment

What

Number of users, user’s number of logins per day, session duration, number of signups (new users) per day, notifications check frequency, search frequency, search duration, which time search the most, chat session duration, chat usage frequency.

For What

Using this data, we will be able to identify the trend (number of users increasing or decreasing), demand on our application, frequency and duration of application usage.

What

All technical data: response time, connection with database, visibility, session start time, session end time, availability, connection, database efficiency check, correctness of database “create record”, correctness of database “edit record”, correctness of database “delete record”, security, error handling, keywords, correctness of database “read” and “write”, data storage check, notifications delivery check, GPS connection correctness, network stability, update state check, search speed, database response, correctness of filters applications, wish list items limit, correctness of message and data share.

For our own investment

For What

This data is very important for errors correction, maintenance of our software development, its further scalability and improvement of the quality.

For our own investment

For insurance companies

What

User’s gender, age, country, city, address, special health condition, accidents history, pet in the car, number of drivers, problem – car brand/ model/ type/ mileage correlation, problem – user age/ gender/ country/ city correlation, problems – location correlation, car age – problems frequency correlation.

For What

Using this data, insurance companies would be able to identify the car models, car owner types, locations which have / cause the most problems with cars. So, by applying knowledge from data, they will set insurance prices more precisely.

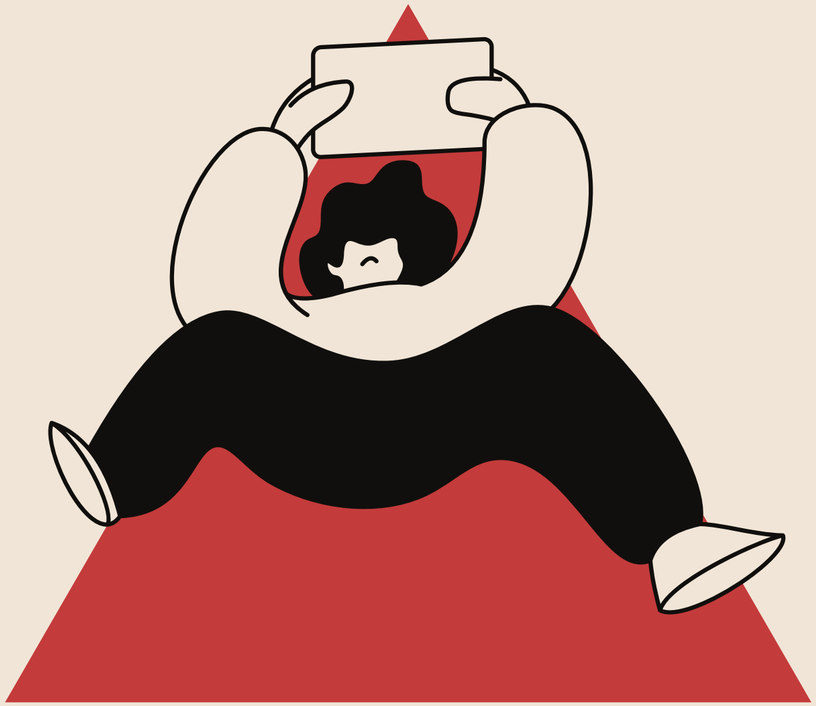
What

Most searched problems, problem – car model/ type/ mileage correlation, problems – location correlation, car age – problems frequency correlation, most buying: car type, car model, car color, car year, car mileage, price range.

For What

Using this data car manufacturers can easily identify which car models are in most demand and best-selling. Also, they will get valuable real-life data on exploitation of their cars, which car models face particular problems. So, manufacturers will be able to fix these issues while building cars.

For car manufacturers



What

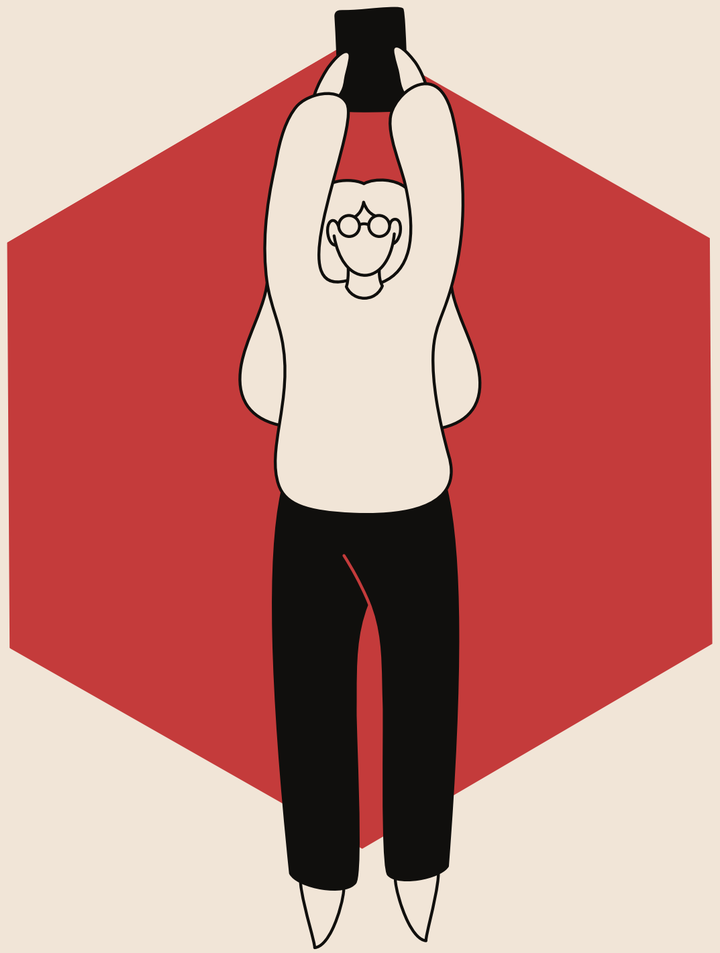
User’s gender, age, country, city, address, most visited locations, frequency of map using, most visited service centers, most searched problems, problem – car brand/ model/ type/ mileage correlation, problem – user age/ gender/ country/ city correlation, problems – location correlation, car age – problems frequency correlation, most popular service.

For What

By analyzing and applying knowledge from this data, service centers will be able to: find the best and in-demand place for new service center, which services are most popular in particular area and customer’s type, what are the typical and most frequent problems with particular car brands/ models.

For service centers

For car dealerships



What

Most popular and buying: car brand, car type, car model, car color, car year, car mileage, price range; view – buy ratio, problem – car brand/ model/ type/ mileage correlation, car – user age/ gender/ country/ city correlation, problems – location correlation, car age – problems frequency correlation.

For What

With help of this data, car dealerships will be able to identify the most popular and buying cars for particular regions and customer’s type. Also, they will know which cars to avoid selling in the dealership due to huge number of problems occurring to that car models.

For taxi services

What

Car brand, car type, car model, car color, car year, problem – car brand/ model/ type/ mileage correlation, car age – problems frequency correlation

For What

The best cars for taxi services are those which are the most reliable and cause minimum problems. With this data taxi services will have the information about the most and least reliable cars, what are the typical and most occurring problems for particular car brand / model. So, they will be able to fill their taxi park with most suitable cars and avoid not reliable ones.

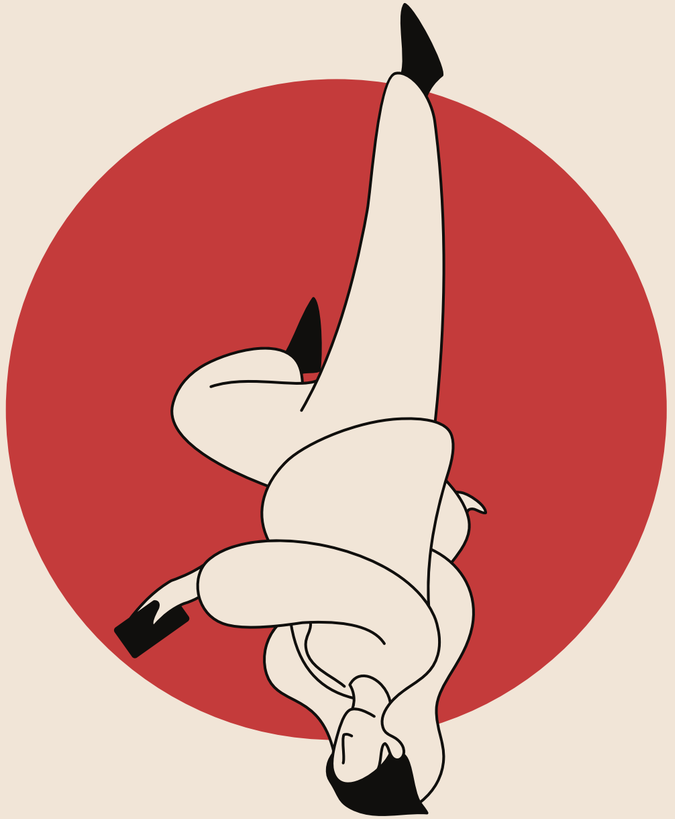
What

User’s gender, age, country, city, address, most popular: car brand, car type, car model, car color, car year, problem – car brand/ model/ type/ mileage correlation, car age – problems frequency correlation.

For What

Using this data car rental companies will know which car brands / models are most and least reliable, which cars clients like the most. So, they will know what cars to acquire to their rental saloons for maximum profit and customers satisfaction.

For car rental companies



Thank you
from our IFix
team!