Netcracker
An NEC Company

BIKEPACKER

Bikepacker

Android app for cycle touring

Students:

Alexander Baklanov
Valentina Filonova
Alexander Matyuhin
Alexander Ryazantsev

Tutors:

Ilya Chudov
Eduard Kiselev
Oleg Tekuchev

Agenda

1. Meet the team
2. What is Bikepacker?
3. App features
4. Architectural diagram
5. Backend used technologies
6. CI/CD
7. Data model
8. App design system
9. Frontend used technologies
10. App requirements and demonstration
11. Extension points and monetization

Meet the team

student

Alexander Baklanov

The Faculty of Information Technology and Computer Security student,
Voronezh State Technical University

@ComeBak

student

Valentina Filonova

The Faculty of Computer Sciences student,
Voronezh State University

@press1Em

student

Alexander Matyuhin

The Faculty of Computer Sciences student,
Voronezh State University

@al_mttn

student

Alexander Ryazantsev

The Faculty of Physics postgraduate student,
Voronezh State University

@ad_ryaz

tutor

Ilya Chudov

Software Engineer at Netcracker Technology

tutor

Eduard Kiselev

Group Manager at Netcracker Technology

tutor

Oleg Tekuchev

Software Engineer at Netcracker Technology

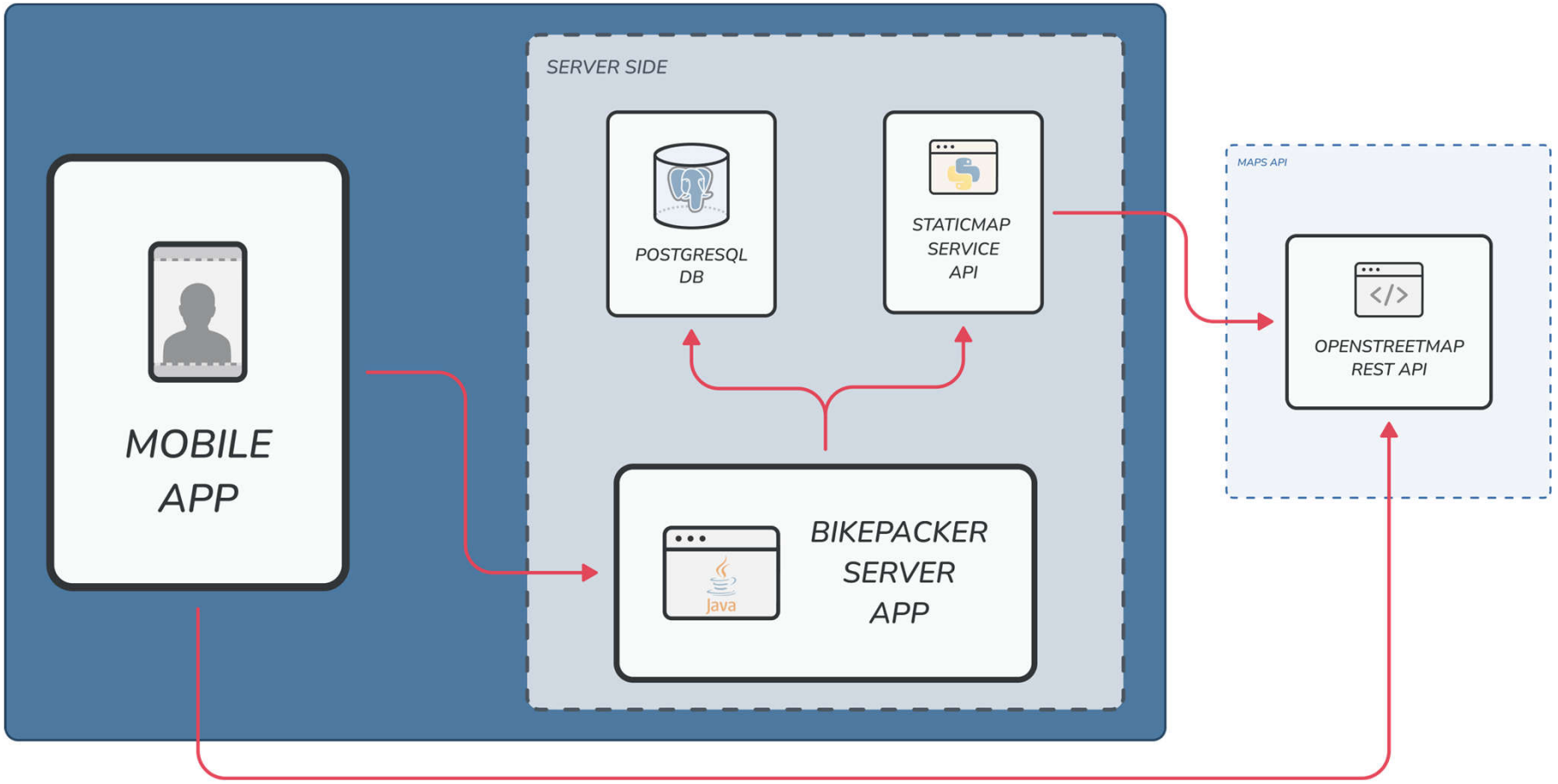
What is Bikepacker?

Bikepacker is an application for planning cycle trips.

App features

1. Implementation of a graphical interface for working with geodata.
2. Creating, saving and displaying bicycle routes.
3. Adding and describing points on the route, corresponding to interesting places on the route.
4. Collecting and providing basic statistics on completed rides.
5. Adding other people's routes to favorites for future reuse.
6. Finding and adding new friends. Use their tracks.
7. Creating travel articles/stories.
8. Importing and exporting .gpx files.
9. Easy migration from Strava.

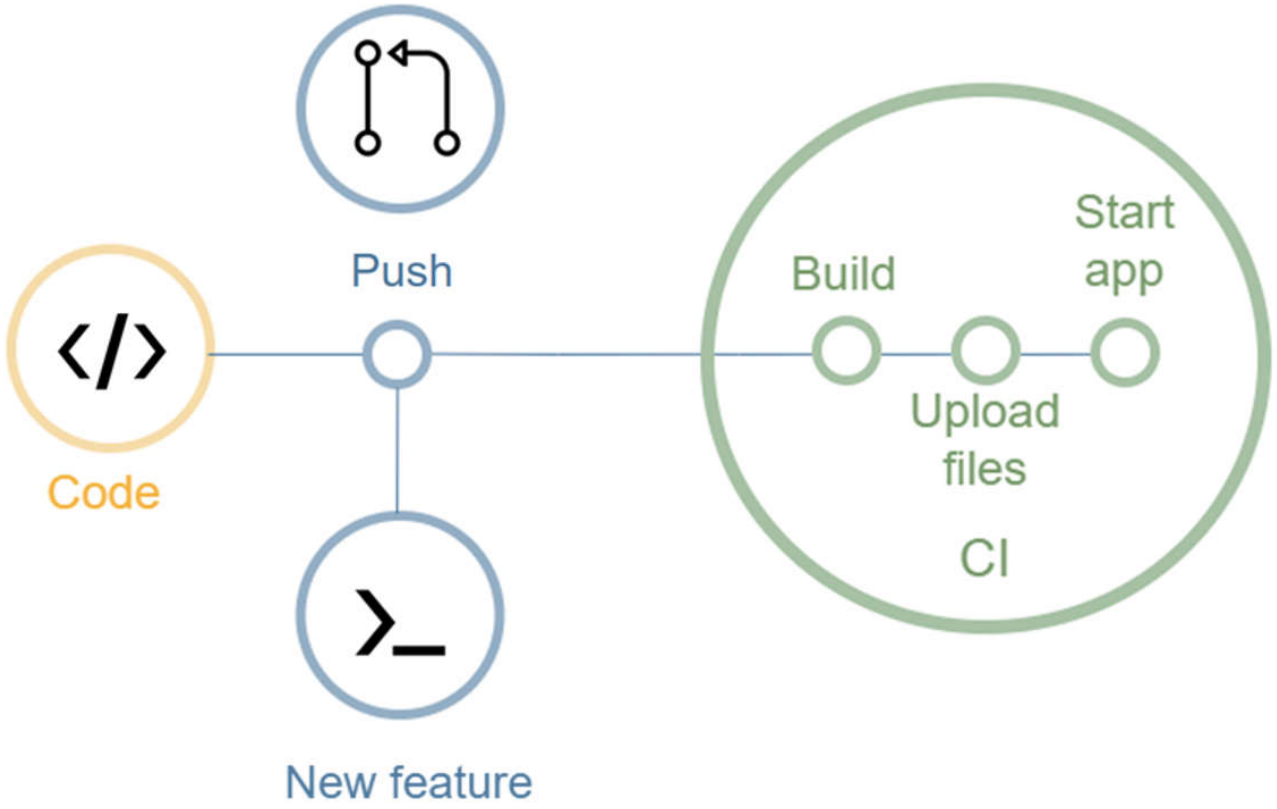
Architectural diagram



Backend used technologies

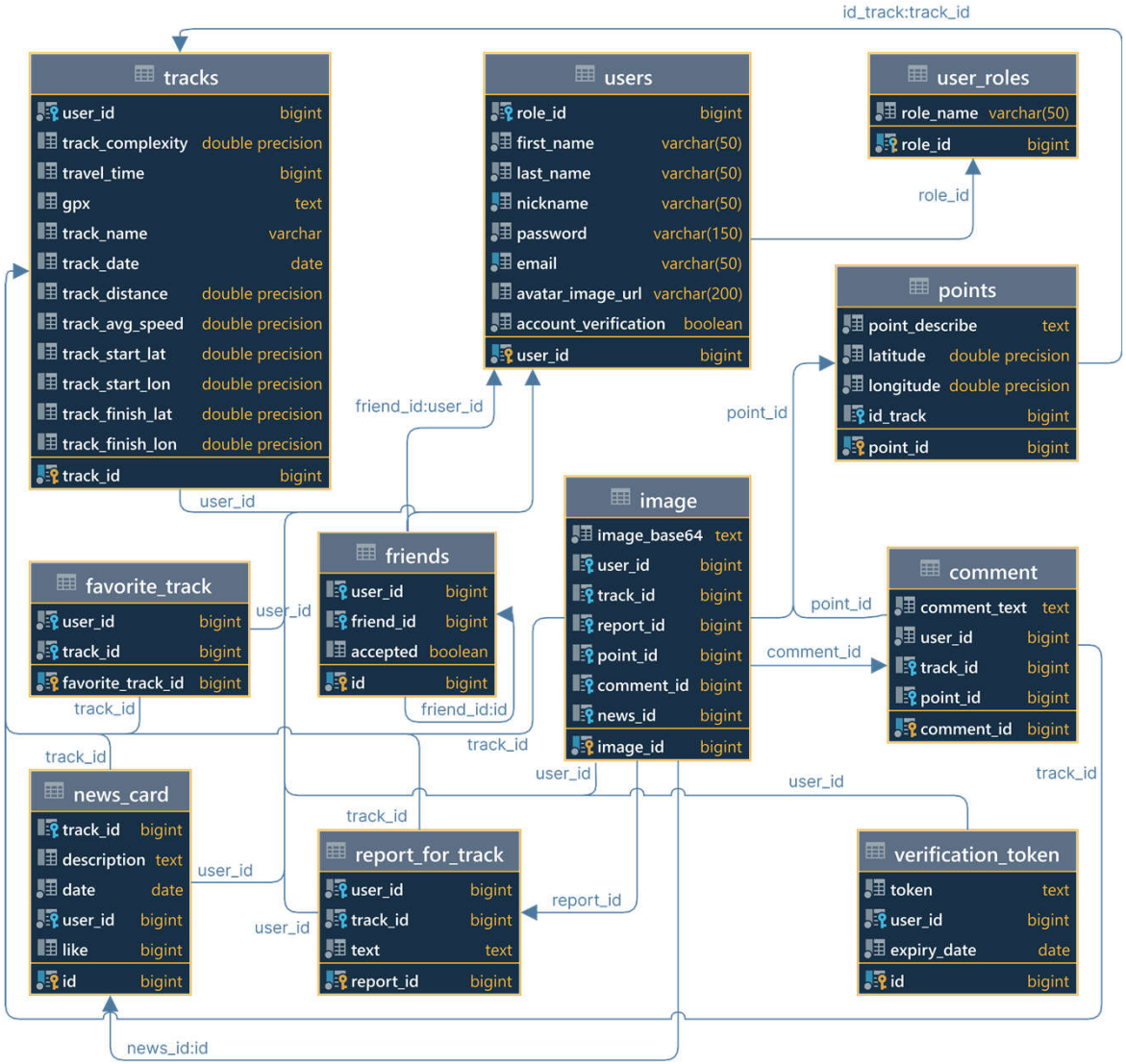
- Ubuntu Server
- Java
- Spring Framework
- Flask Framework
- PostgreSQL
- OpenStreetMap API
- Swagger
- Git
- Github CI/CD

CI/CD



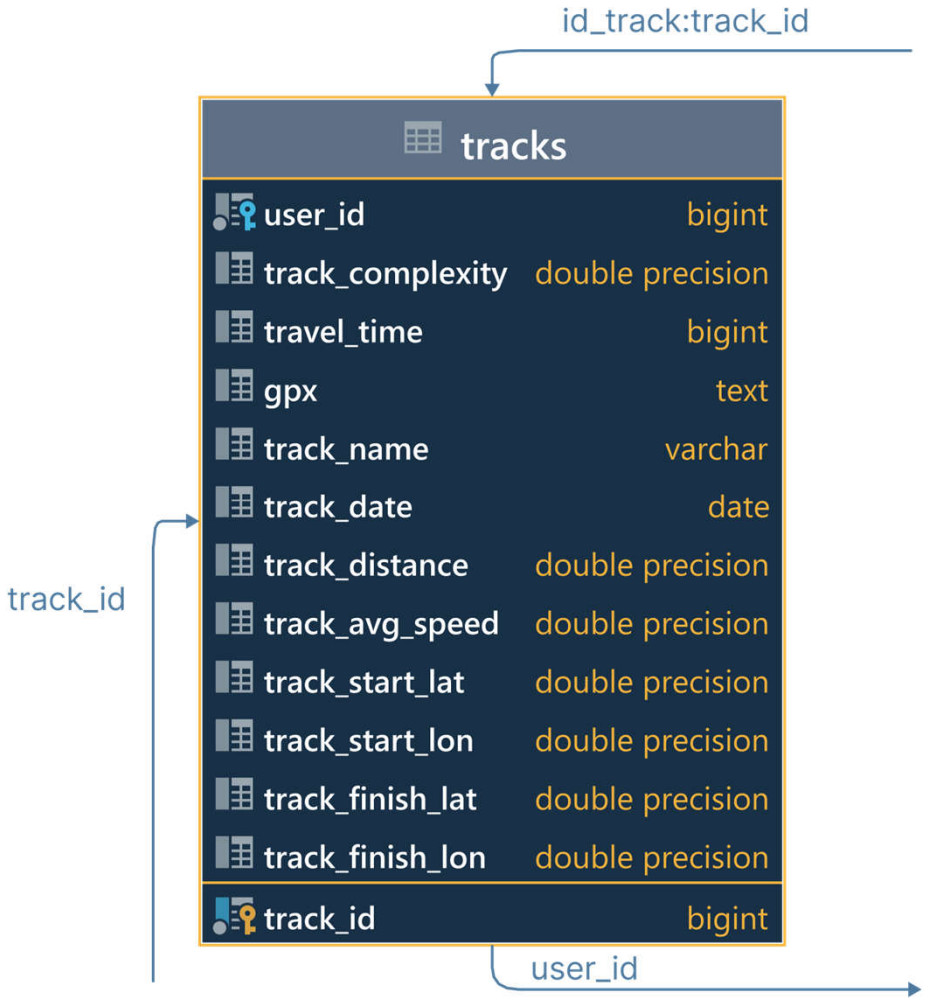
Data model

This diagram represents the database model of the project.



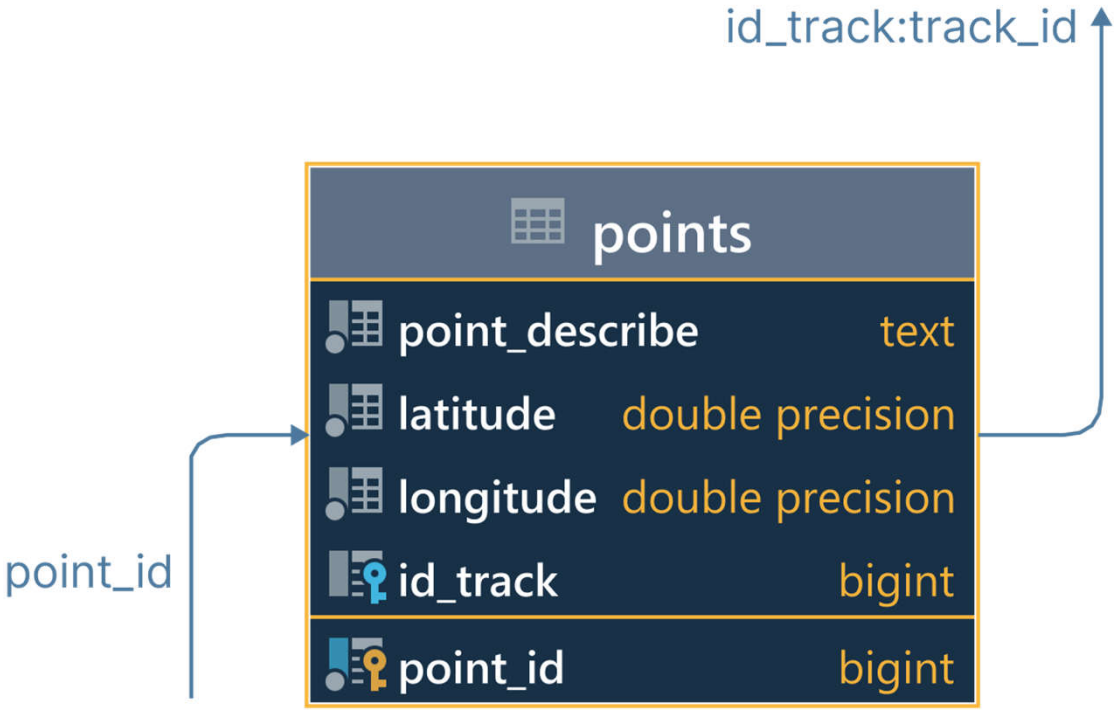
Tracks table

Data model



Points table

Data model



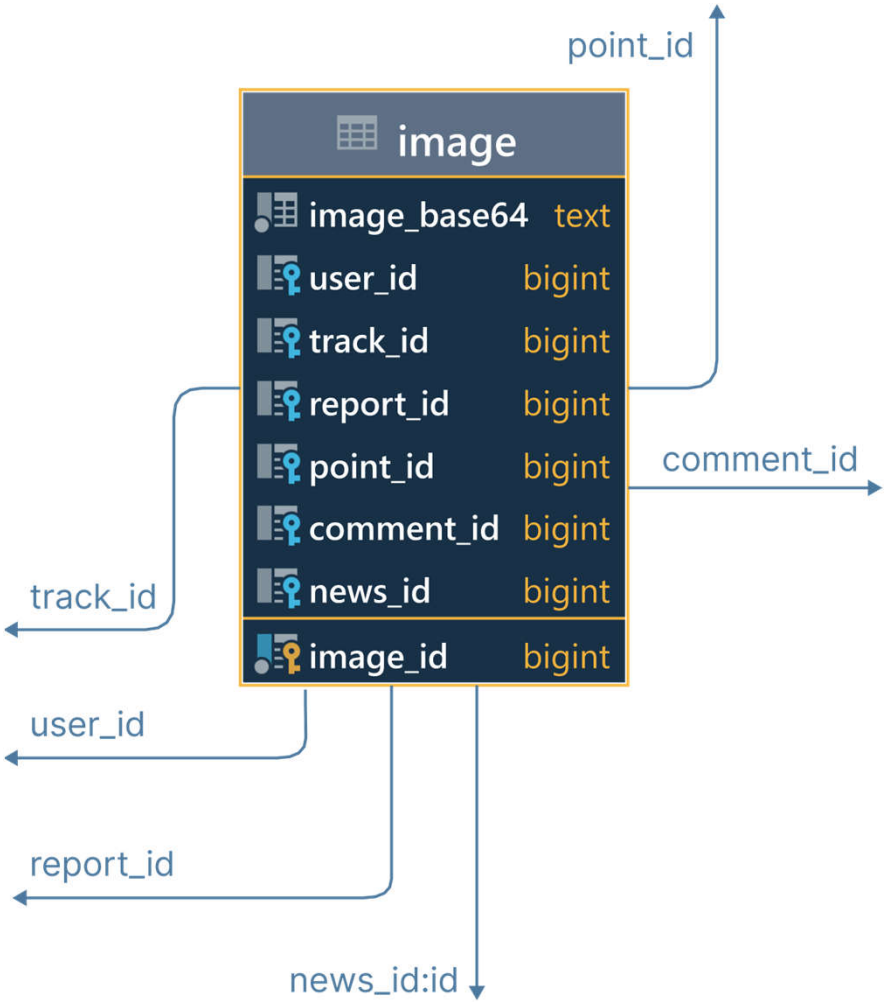
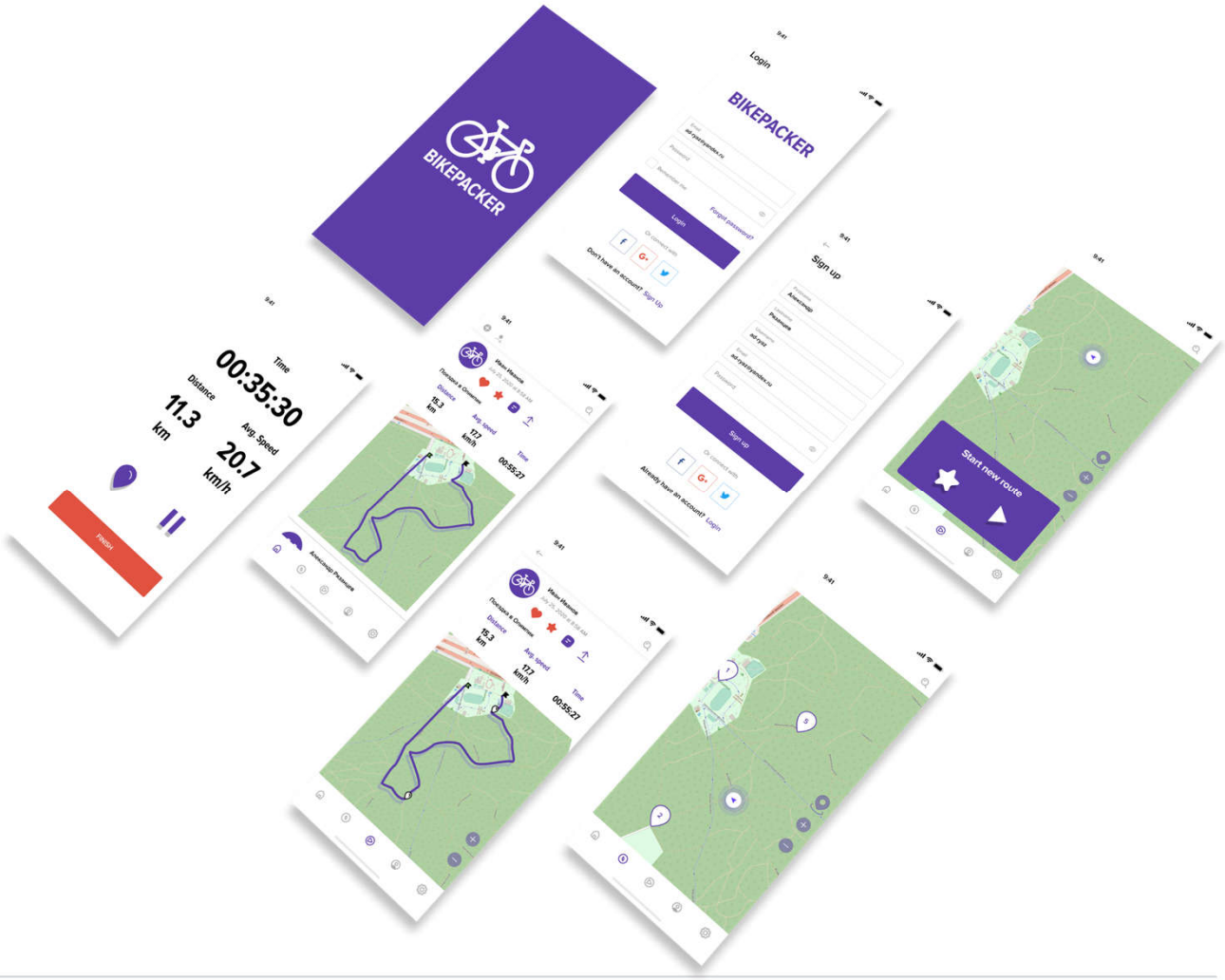


Image table

Data model

App design system

A design system was created for the android application using Figma.



Frontend used technologies

- Android
- osmdroid
- Retrofit 2
- JPX
- Picasso

App requirements

Android

9.0+

supported version

Required permissions

Location

User has to allow access to device's location

Storage

User has to allow access photos, media and files on device

Extension points

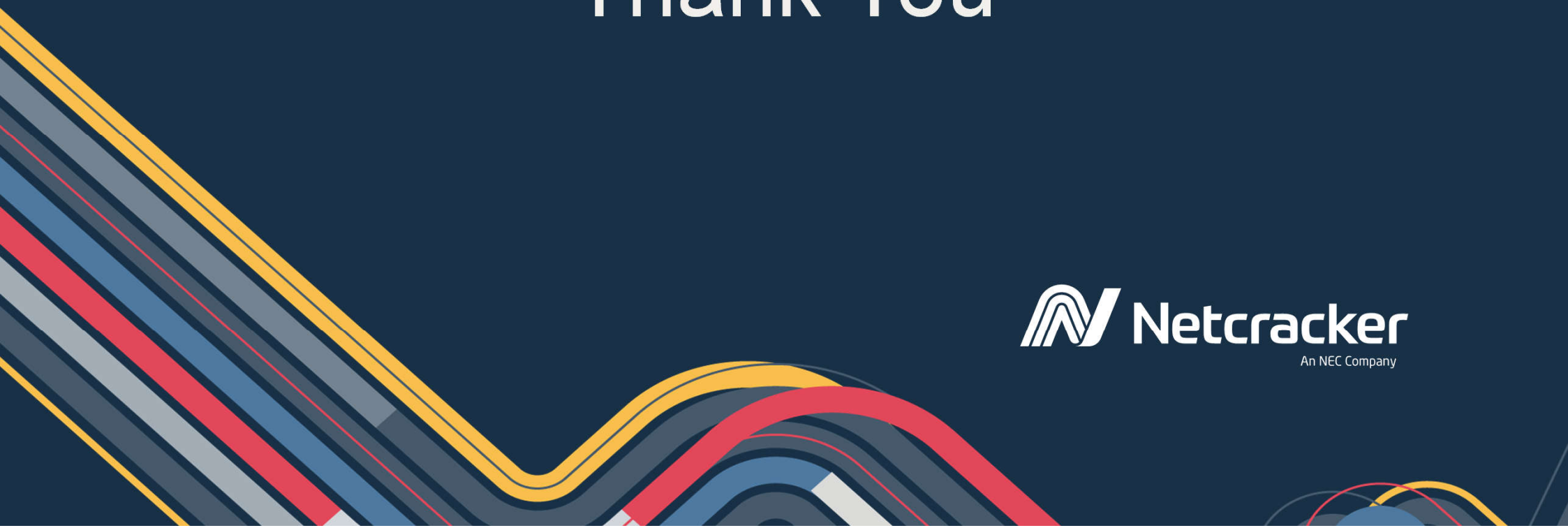
1. Detailed analysis of saved tracks.
2. Recommendation system for app users.
3. Integration with photo services.
4. Integration with smart watches and fitness trackers.
5. Bikepacking global activity map (heatmap).
6. Articles and reviews on bikes and equipment.
7. Organizing weekend and long trips, brevets and other competitions.
8. Integration with equipment resellers as a means of monetization.

Ways of monetization

1. Articles and reviews on bikes and equipment
2. Organizing weekend and long trips, brevets and other competitions
3. Integration with equipment resellers

netcracker.com

Thank You



Netcracker
An NEC Company