

GymGuru

Gleb Bugaev

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Anna Gromova

Arina Goncharova

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· July 23nd 2024 ·

Problem

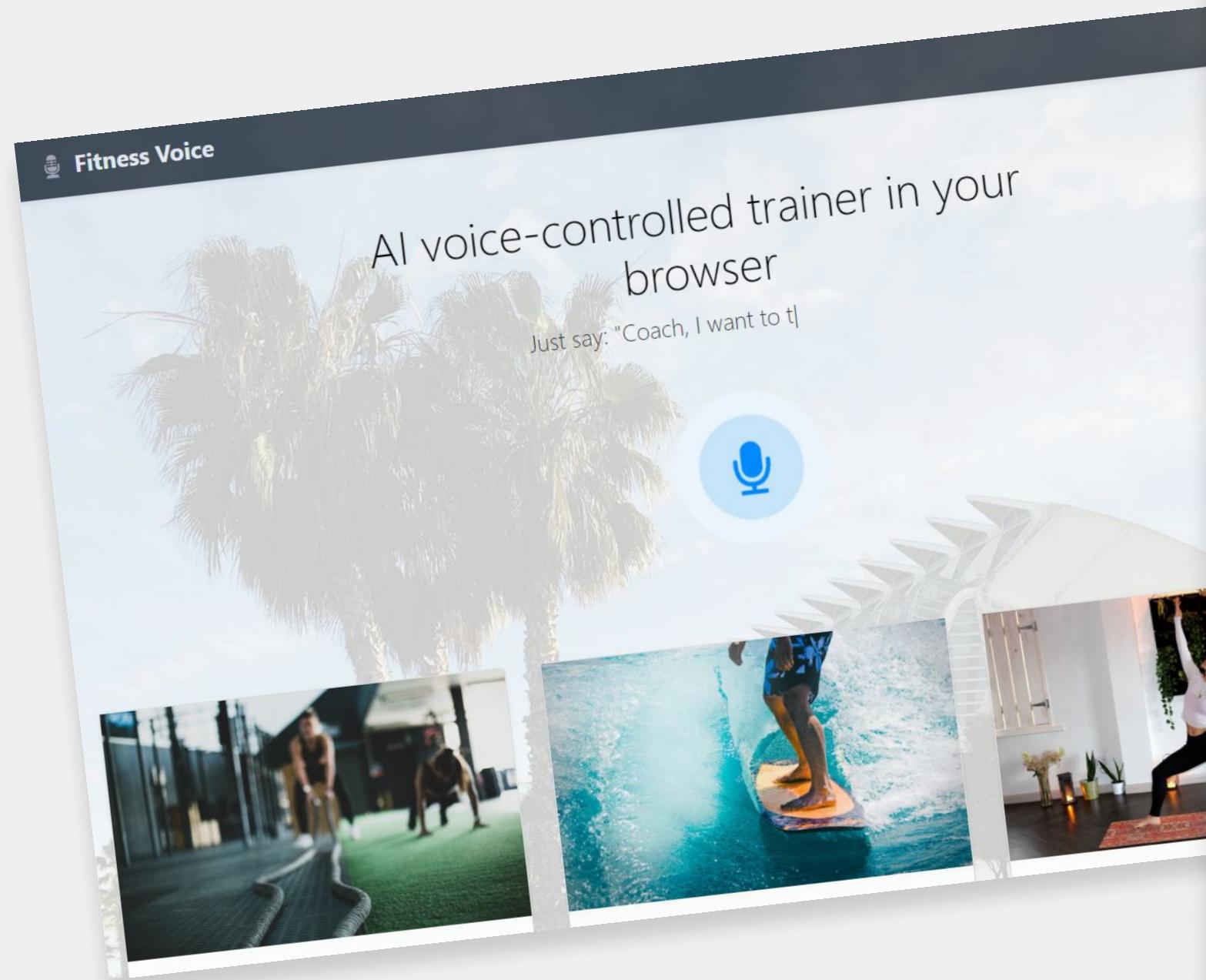
Two main problems we defined:

Fitness test:

only offline, may be no convenient time slots, no trainers attention to everyone

Online training:

the lack of a convenient application for training from home with tips on correct technique and supervision



Предпросмотр в App Store



Skill Yoga - Train Mind & Body [12+]
SkillYoga GmbH
Разработано для iPhone
★★★★★ 4,5 • Оценок: 4
Бесплатно • Включает встроенные покупки

Снимки экрана (iPhone)



Existing solutions

Skill Yoga, Fitness voice, BeOne Sports

The idea of the product is to create a web application that allows:

①

Pass fitness test
remotely from any
device with camera

②

Improve the
correctness of physical
exercises performing

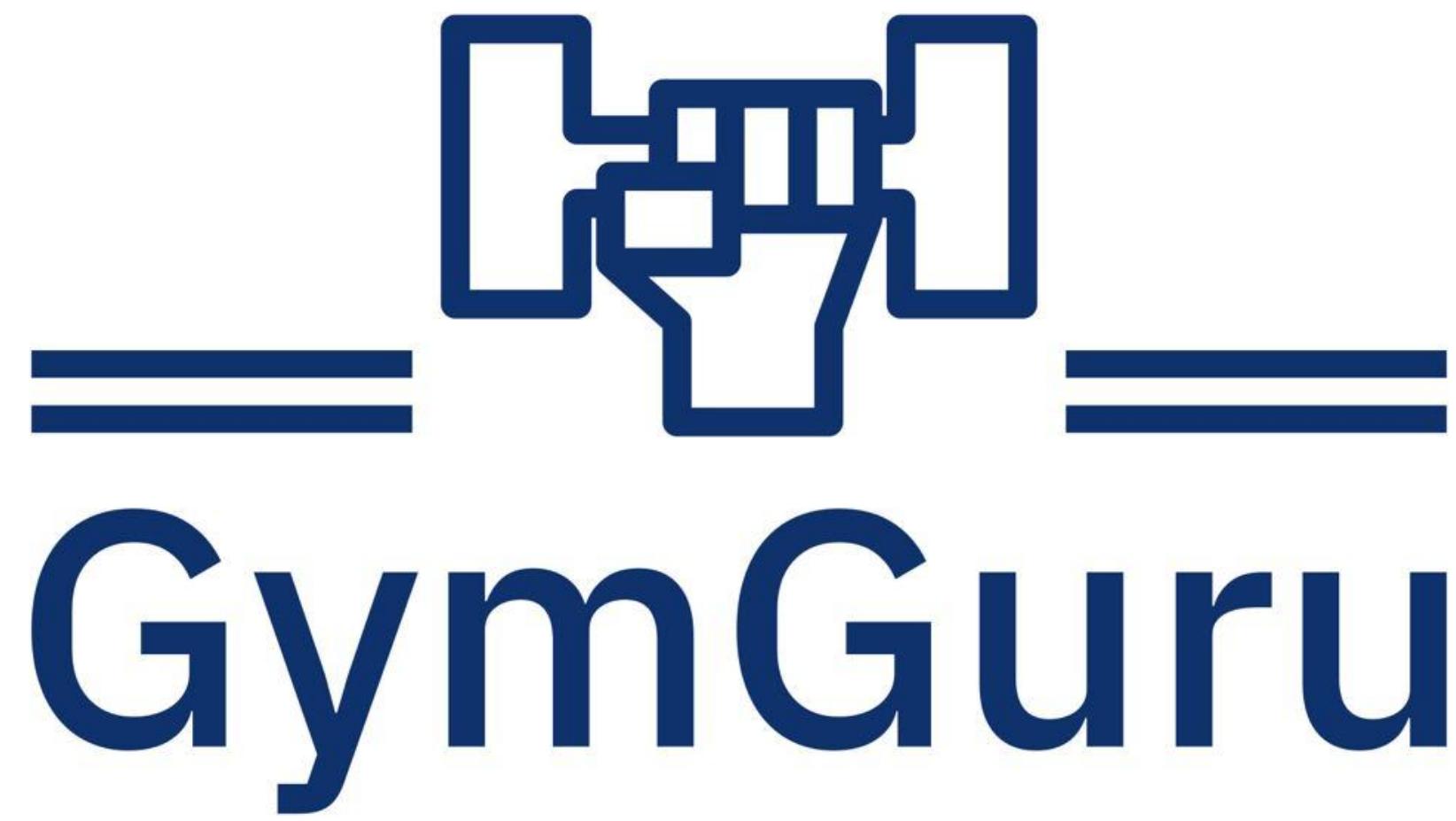
③

Train at home or in the
gym at a convenient
time without the need
for professional
supervision

Product functionality

What you can do using GymGuru

- Register / Login / Logout
- Train different exercises with supervision and score counting
- Pass fitness test
- See the history of your results
- See the rating of all users
- Load the spreadsheet of fitness test results (only for sport trainers)



Team members and their responsibilities

On the next slides we will present our team, members responsibilities and the implementation.

Role:

Team leader

Responsibilities:

Product management, team organization, working process organization, backlog (GitHub Project)



Gleb Bugaev

Team leading and product backlog

GymGuru

Backlog | Team capacity | Current iteration | Roadmap | My items | New view

Add status update

Filter by keyword or by field

	Title	Assignees	Status	Priority	Size	Iteration	
1	Create web pages (Arina) #7	arinagoncharova20...	Done	P1	M	Iteration 1	
2	Create web pages (Liana) #8	liaana	Done	P1	M	Iteration 1	
3	Create Postgres database #9	nai1ka	Done	P2	S	Iteration 1	
4	Body recognition #10	nai1ka	Done	P0	M	Iteration 1	
5	Rules for exercises #11	anngrosha	Done	P0	L	Iteration 1	
6	Connect frontend to backend #12	nai1ka	Done	P1	L	Iteration 1	
7	Deploy the prototype #13	nai1ka	Done	P2	L	Iteration 1	
8	Write a report (Week 3) #14	marishmak and Mil...	Done	P0	M	Iteration 1	
9	Add a recognition for different exercises #21	anngrosha	Done	P0	L	Iteration 2	
10	Set up CI/CD #22	nai1ka	Done	P0	M	Iteration 2	
11	Rating functionality #23	nai1ka	Done	P1	S	Iteration 2	
12	Write a report (Week 4) #24	marishmak and Mil...	Done	P0	M	Iteration 2	
13	Web pages for the fittest #25	liaana	Done	P1	M	Iteration 2	

Rooms Booking

- Lecture Room #305 (x25)
- Lecture Room #312 (x30)
- Lecture Room #313 (x60)
- Lecture Room #314 (x34)
- Lecture Room #318 (x30)
- Lecture Room #320 (x28)
- Meeting Room #3.1
- Meeting Room #3.2
- Meeting Room #3.3

Печать

Сведения

Students Booking Service Capstone Project Meeting

Когда: 20:00 Пн 08.07.2024 — 22:30
Где: Meeting Room #3.3 (g.bugaev@innopolis.university)
Booking on request from g.bugaev@innopolis.university

1 Июл 2
10:00 Rusla 11:00
11:30 Stude 13:20
+4
8 9
10:55 Stude 0:00 S
13:00 Natal 11:27
+6
15 16
22 23
29 30

Title

Start End

ДД.ММ.ГГГГ - ДД.ММ.ГГГГ

BOOK ROOM

Role:

Report writers

Responsibilities:

Writing the reports, diagrams creating,
delivering the information from
developers to the report readers



Mariia Shmakova



Milana Sirozhova

Reports writing

Developing the first prototype, creating the priority list

• Technical Infrastructure:

Before the working process of this week we organized all necessary technical infrastructure for convenient development process. We set up a GitHub Project with backlog, roadmap, milestones and issues to control features development process. Also, as a deployment platform we chose and rent a server with satisfactory parameters to maintain the main application logic and database. Of course, each team member has a software for the coding customized specifically for his/her preferences. In addition, since our team has 2 reporters, we creates a shared document for each report where all team members could see the progress in report writting and suggest any additions or recommendations.

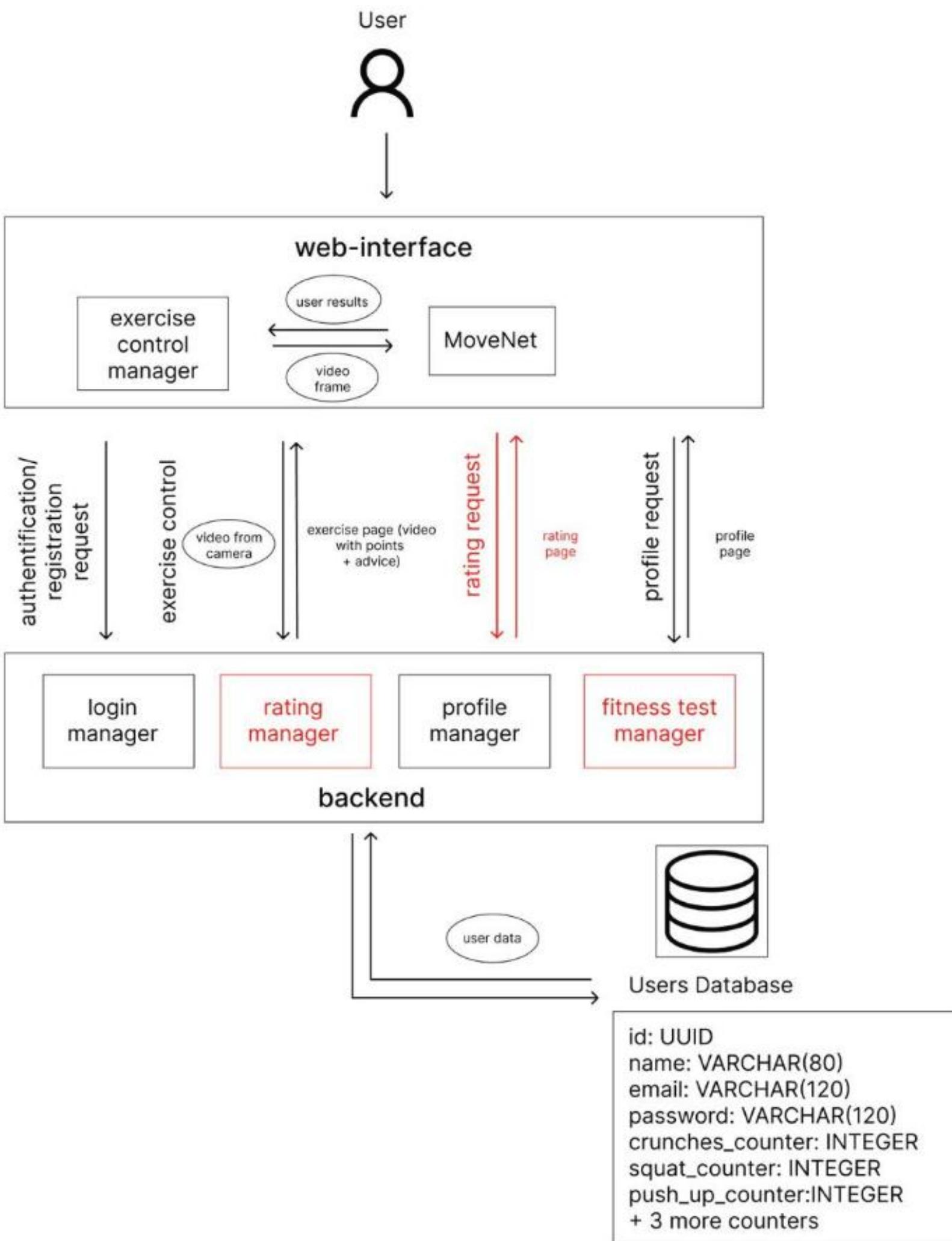
• Backend Development:

During this week our team was focused on the following tasks: recognition of a body by using MoveNet (pose detection model) was implemented, then correct execution checking was developed for some exercises. Moreover, we chose a domain name, rented a server and hosted our web application.

• Frontend Development:

As about our progress on frontend: we have finished with all important pages: main page, registration and login page, rating page with possibility to flipping through pages with exercises results, page with exercises, where user can click on the exercise preview and see the page with the video of a correct technique and can train with the help of video model assistant. Also, we have implemented a fitness test page, where users can see the necessary thresholds to pass for each exercise. The html was used to create the layout of the web pages and the Tailwind css framework contributed to quick and efficient styling.

Capstone Project
Team GymGuru
Week 3 - Developing the first prototype, creating the priority list
Week's focus and importance
Web application
Prototype Features
User Interface
Developing the first prototype, creating the priority list
Using the feedback from TA
Challenges & Solutions
Conclusions & Next Steps



Role:

Frontend developers

Responsibilities:

UI designing, web pages creating,
development of all UI elements and
transitions



Arina Goncharova



Liana Mardanova

UI



GymGuru - your personal assistant to effective workouts

Real-time feedback to ensure your exercises are effective and safe



Pass the fitness test

Take your university sports exam from the comfort of your home

Track your progress

Stay motivated by tracking results and reach your sport goals

[Rating](#)[Exercises](#)[Test](#)[Profile](#)[Log out](#)

Push-up Technique:

- Place your hands firmly on the ground directly under your shoulders.
- Keep your body straight and slowly lower it down.
- Pull your shoulder blades back and down, keeping your elbows close to your body.
- Exhale as you push yourself back to the starting position.

Position the phone horizontally so that you can be seen in full height. The app will track repetitions and check execution technique.

Recommended to perform 20 repetitions

[Start](#)[Rating](#) [Exercises](#) [Test](#) [Profile](#) [Log out](#)

Role:

Backend developer

Responsibilities:

Database creating and management,
backend and frontend connection,
GitHub CI/CD, rating and fitness test
functionalities



Nail Minnemullin

Database, backend functionality

The screenshot shows a CI/CD pipeline interface. At the top, there are navigation links: Code, Issues (1), Pull requests, Actions (selected), Projects (1), Wiki, Security, Insights, and Settings. Below this, a specific pull request is highlighted: "add loading functionality for fitness test #66". The "build-and-run" job status is shown as "succeeded yesterday in 20s". The job details list the following steps:

- > Set up job (2s)
- > Cleanup build folder (0s)
- > Checkout code (1s)
- > Build Docker container (6s)
- > Stop and remove existing container if it exists (1s)
- > Run Docker container (1s)
- > Post Checkout code (1s)
- > Complete job (1s)

A "Search logs" input field and a "Re-run all jobs" button are also visible.

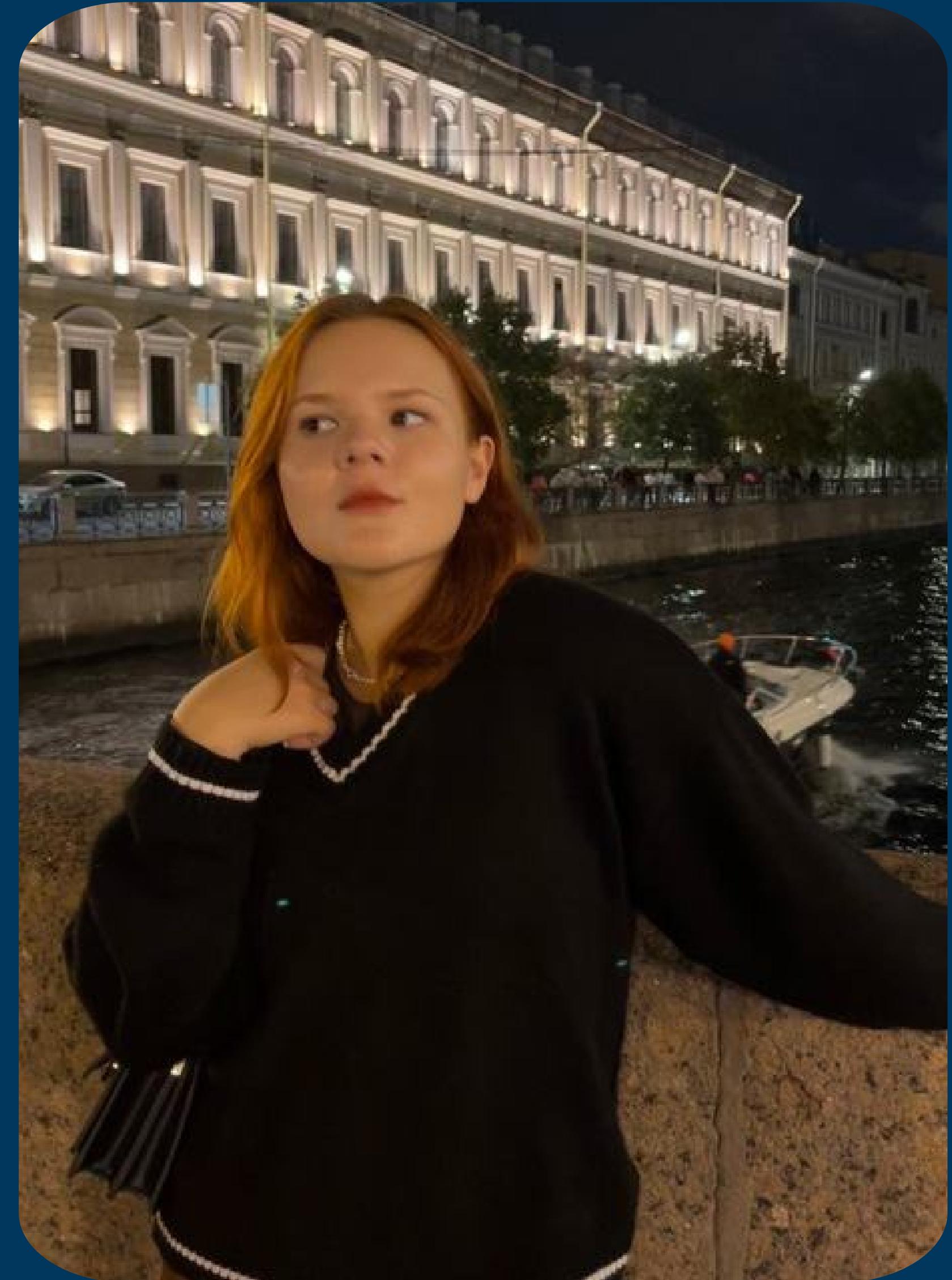
fitness_test_results	users	exercises
user_id ↗	integer	user_id ↗
test_id ↗	integer	user_id ↗
datetime	datetime	push_up_counter
height	integer	squat_counter
weight	integer	curl_counter
push_up_counter	integer	crunch_counter
crunch_counter	integer	lunge_counter
forward_bend_counter	enum	v_up_crunch_counter
		lateral_raise_counter
		forward_bend_counter
		plank_counter

Role:

Backend developer

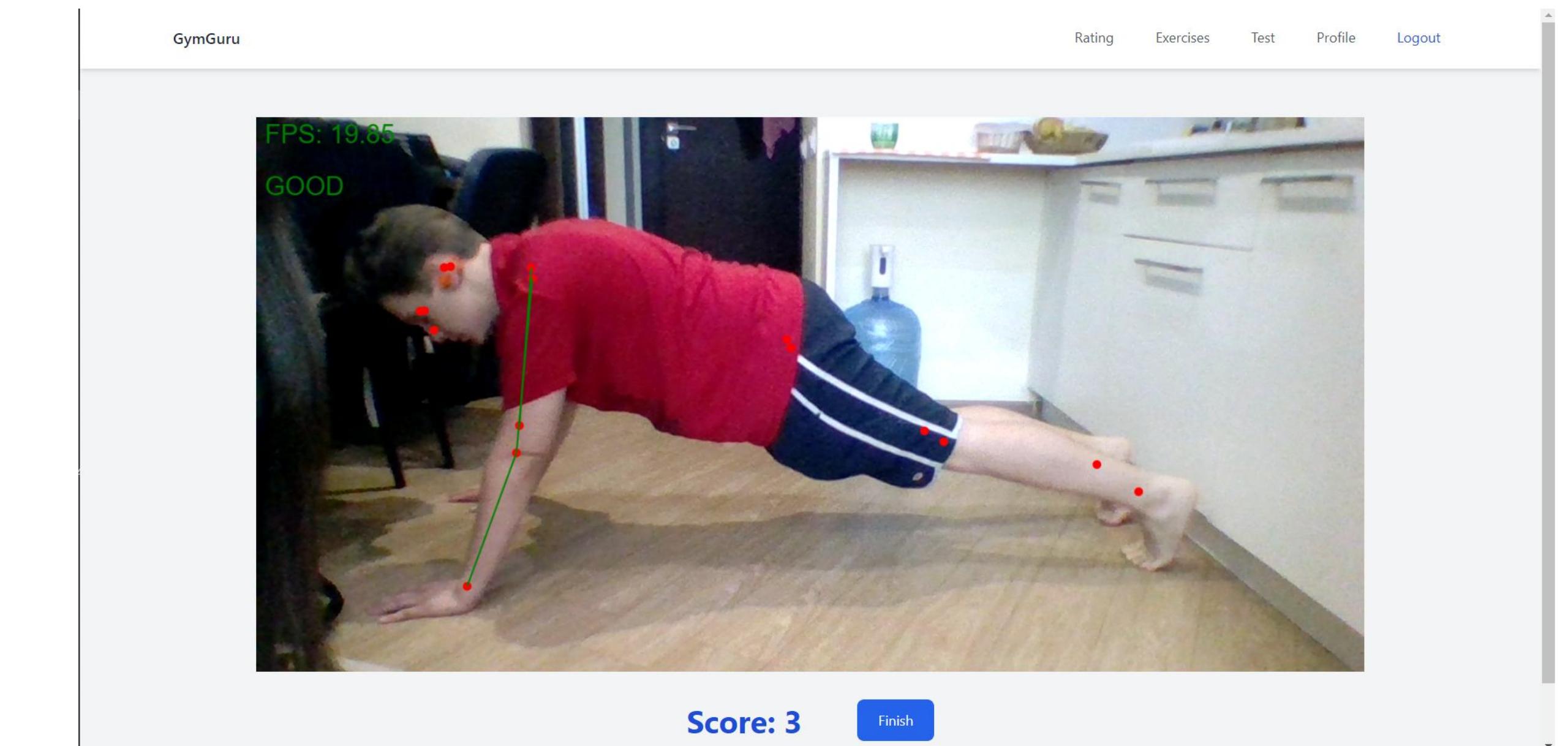
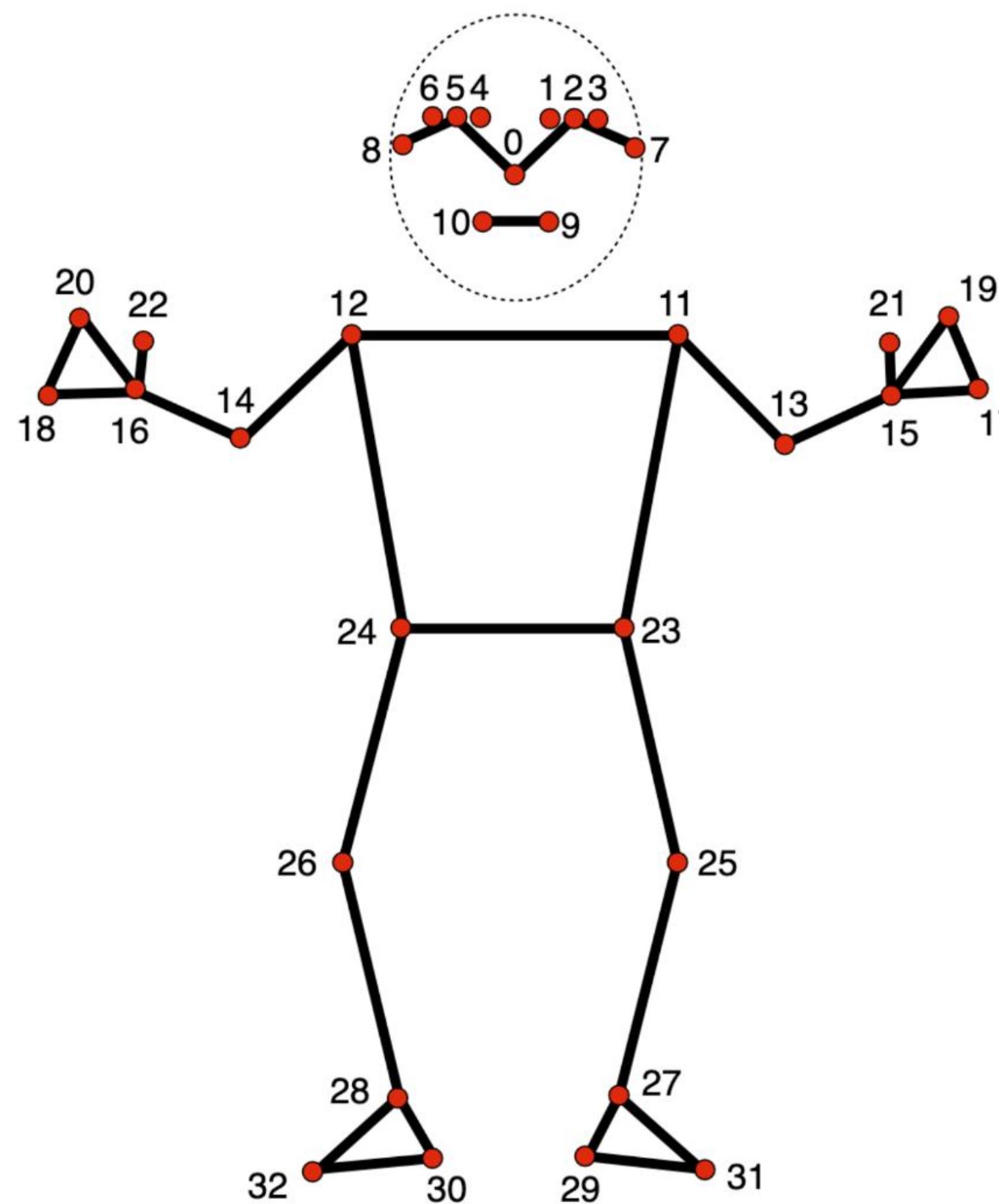
Responsibilities:

Body pose recognition, checking of the physical exercises performing correctness



Anna Gromova

Pose recognition, ML models and rules of checking the correctness



Challenges and troubles

①

ML model choice

②

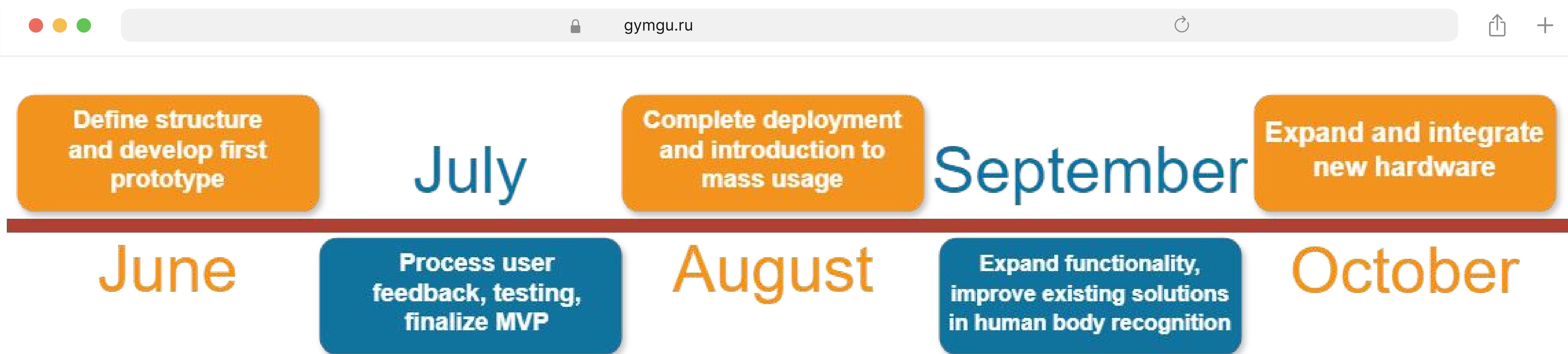
Tricks to deceive
the checking
system

③

Video processing
on the client side

ROADMAP

Future development



WHAT WE LEARNED DURING THE COURSE:

Reflection

- ① GitHub Project organization and Actions (CI/CD and Runners)
- ② Integration of ML tool into client side of the application
- ③ Planning meetings with a large team (of 7 members)

Thanks from us

- We are grateful to all the students of Innopolis University who agreed to give us feedback during the product development process.
- Also, special thanks to Innopolis University sport coach Yana Bogdanovich for her professional opinion and valuable advice.



Web application link

[HTTPS://GYMGU.RU/](https://GYMGU.RU/)

Thanks!

GYMGURU