

# GymGuru

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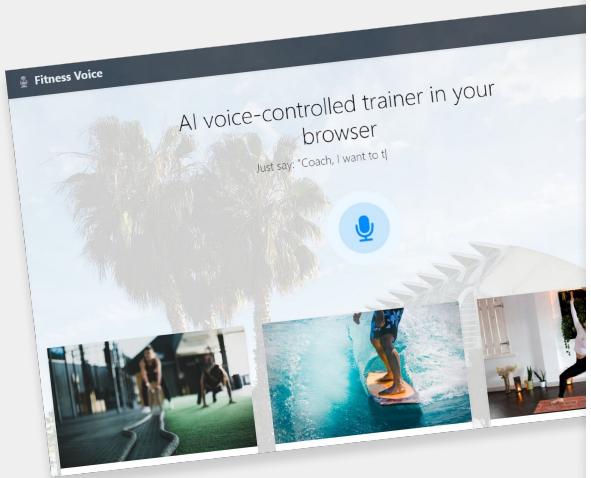
# Domain

## Training

- absence of accessible gym
- absence of sport coach
- wrong technique during self-training

## Fitness Test

- only offline
- inconvenient time slots
- no trainers attention for everyone



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)

The app page shows five screenshots of the Skill Yoga app. The first screenshot shows a person in a downward dog pose with the word "INCREASE" overlaid. The second screenshot shows a person in a handstand with the text "FUNCTIONAL YOGA FOR ATHLETIC PEOPLE" and "skill yoga" at the bottom. The third screenshot is a mobile phone displaying "Your Training Plan" with a "Beginner 2: Vinyasa & Chair pose" session. The fourth screenshot shows a person in a lunge position with the text "GET REAL TIME FEEDBACK ON YOUR POSTURE" and "Knee above ankle". The fifth screenshot is a mobile phone displaying "TODAY'S MEDITATION SESSION" with a video thumbnail of a person meditating.



## Marketing Research

Skill Yoga, Fitness voice, BeOne Sports

# The idea of the product

①

**Improve the  
correctness of physical  
exercises performing**

②

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

③

**Pass fitness test  
remotely from any  
device with camera**



# 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



**Gleb Bugaev**

ROLE:

Team leader

RESPONSIBILITIES:

GitHub Project,  
Team Organization



**Mariia Shmakova**

ROLE:

Report writer

RESPONSIBILITIES:

Google Docs,  
Figma



**Milana Sirozhova**

ROLE:

Report writer

RESPONSIBILITIES:

Google Docs,  
Draw.io



# Team



**Liana Mardanova**

ROLE:

Frontender

RESPONSIBILITIES:

HTML, Tailwind  
CSS, JavaScript



**Arina Goncharova**

ROLE:

Frontender

RESPONSIBILITIES:

HTML, Tailwind  
CSS, JavaScript



**Nail Minnemullin**

ROLE:

Backender

RESPONSIBILITIES:

Postgres, Docker,  
GitHub Actions,  
Flask



**Anna Gromova**

ROLE:

Backender

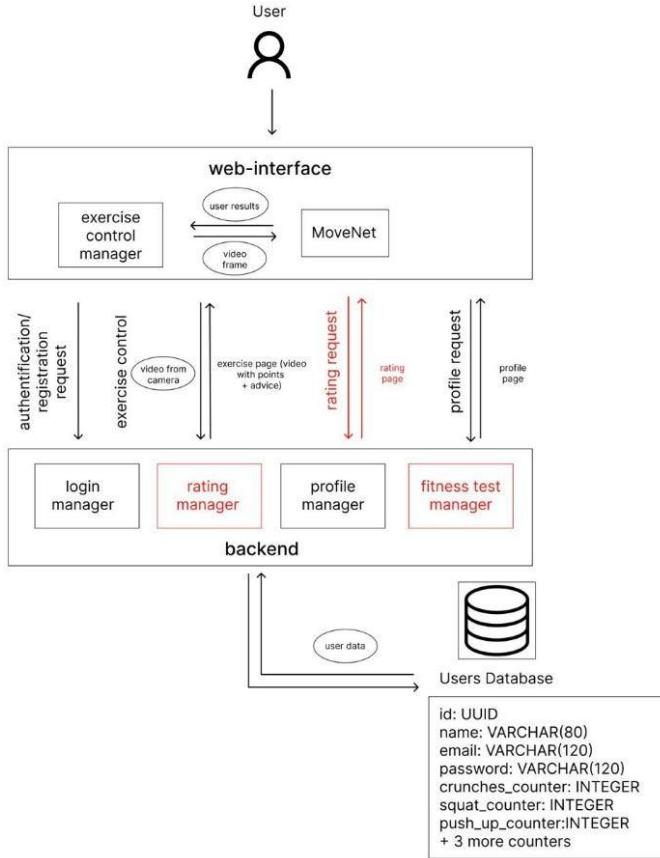
RESPONSIBILITIES:

JavaScript,  
MoveNet,  
MediaPipe

# Team leading and product backlog

GymGuru		Add status update											
		Backlog	Team capacity	Current Iteration	Roadmap	My items	+ New view						
Filter by keyword or by field													
Title			Assignees		Status	Priority	Size	Iteration					
1	<input checked="" type="checkbox"/>	Create web pages (Arina) #7	 arinagoncharova20...		Done	P1	M	Iteration 1					
2	<input checked="" type="checkbox"/>	Create web pages (Liana) #8	 liaaana		Done	P1	M	Iteration 1					
3	<input checked="" type="checkbox"/>	Create Postgres database #9	 nai1ka		Done	P2	S	Iteration 1					
4	<input checked="" type="checkbox"/>	Body recognition #10	 nai1ka		Done	P0	M	Iteration 1					
5	<input checked="" type="checkbox"/>	Rules for exercises #11	 amngrosha		Done	P0	L	Iteration 1					
6	<input checked="" type="checkbox"/>	Connect frontend to backend #12	 nai1ka		Done	P1	L	Iteration 1					
7	<input checked="" type="checkbox"/>	Deploy the prototype #13	 nai1ka		Done	P2	L	Iteration 1					
8	<input checked="" type="checkbox"/>	Write a report (Week 3) #14	 marishmak and Mil...		Done	P0	M	Iteration 1					
9	<input checked="" type="checkbox"/>	Add a recognition for different exercises #21	 amngrosha		Done	P0	L	Iteration 2					
10	<input checked="" type="checkbox"/>	Set up CI/CD #22	 nai1ka		Done	P0	M	Iteration 2					
11	<input checked="" type="checkbox"/>	Rating functionality #23	 nai1ka		Done	P1	S	Iteration 2					
12	<input checked="" type="checkbox"/>	Write a report (Week 4) #24	 marishmak and Mil...		Done	P0	M	Iteration 2					
13	<input checked="" type="checkbox"/>	Wish names for the fittest #25	 liaaana		Done	P1	M	Iteration 2					

# Reports writing and Diagram Drawing



## ① Reports Structure

- WEEK'S FOCUS AND IMPORTANCE
- FEEDBACK FROM TA
- WEEK'S OBJECTIVES
- CHALLENGES & SOLUTIONS
- CONCLUSIONS & NEXT STEPS

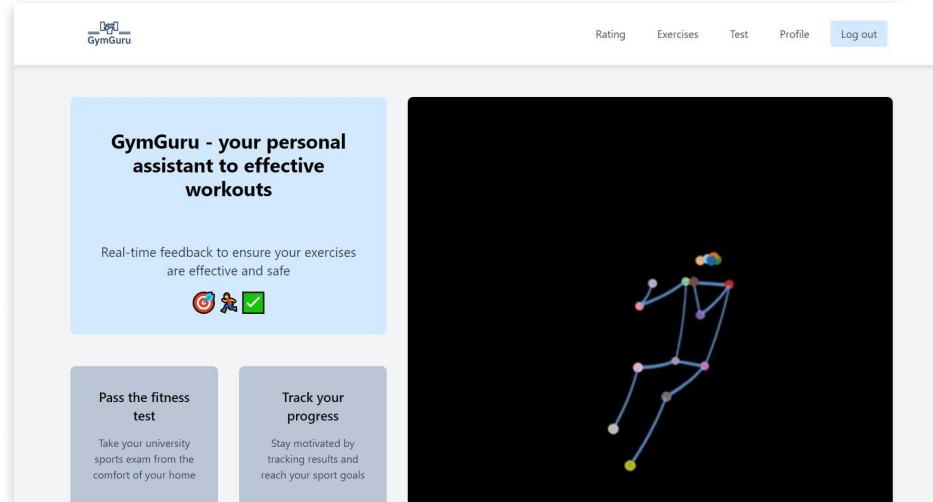
## ② Google Docs

- TEXT WRITING
- SIMULTANEOUS EDITING
- COMMENTS FROM TEAM MEMBERS

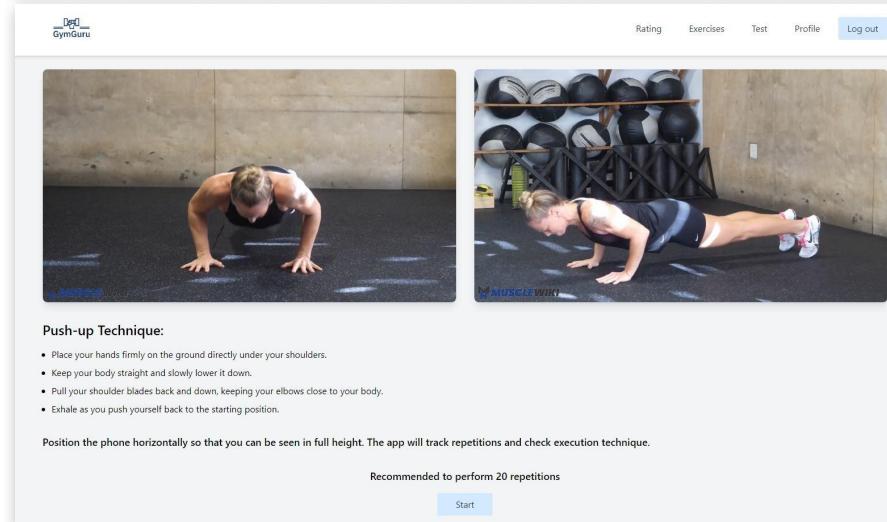
## ③ Visual Studio Code

- CONVERTING TO MARKDOWN
- PREVIEW WATCHING

# User Interface



The landing page for GymGuru features a light blue header with the logo 'GymGuru' and a navigation bar with links for Rating, Exercises, Test, Profile, and Log out. The main content area has a light blue background with the text 'GymGuru - your personal assistant to effective workouts'. Below this, a sub-section says 'Real-time feedback to ensure your exercises are effective and safe' with icons of a target, a person, and a checkmark. Two buttons are present: 'Pass the fitness test' (with the sub-instruction 'Take your university sports exam from the comfort of your home') and 'Track your progress' (with the sub-instruction 'Stay motivated by tracking results and reach your sport goals'). To the right is a large black area containing a colorful line graph.



The exercise guide for push-ups shows two photographs of a woman performing the exercise. The left photo shows her in the starting position, and the right photo shows her in the middle of a push-up. Below the photos is a section titled 'Push-up Technique:' with the following instructions:

- 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

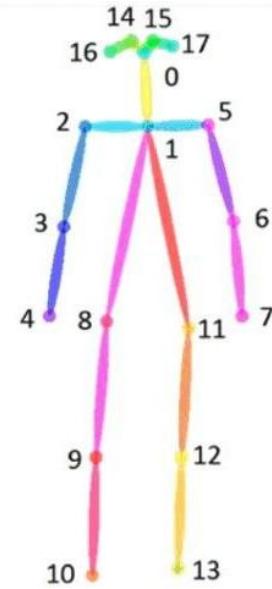
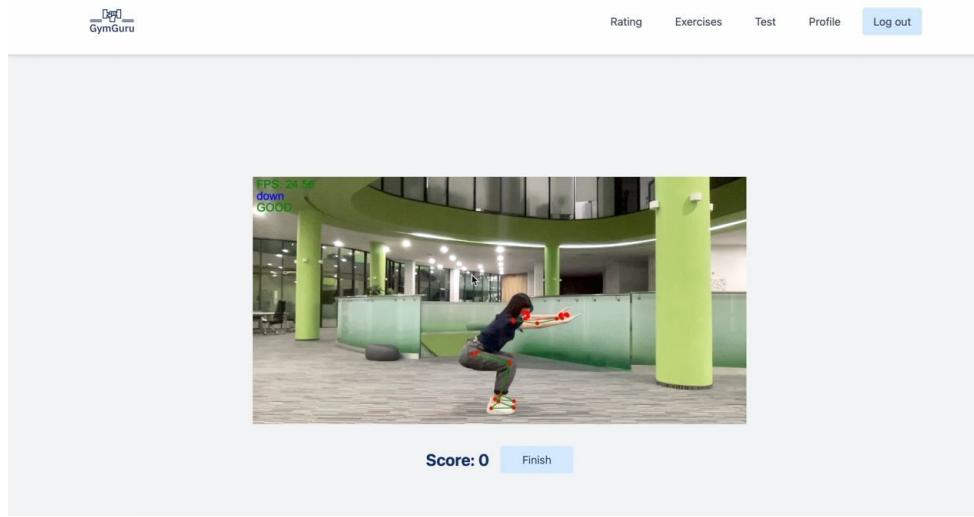
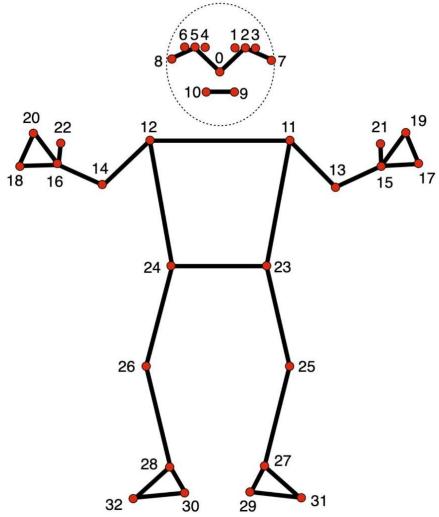
# Database, backend functionality

The screenshot shows a CI/CD pipeline interface. At the top, there are navigation links: Code, Issues (1), Pull requests, Actions, Projects (1), Wiki, Security, Insights, Settings. Below this, a breadcrumb trail says 'Build and Run Docker image' and the specific job title 'add loading functionality for fitness test #66'. A 'Re-run all jobs' button is on the right. The main area has tabs for Summary, Jobs, and a selected 'build-and-run' tab. Under 'Run details', it shows 'Usage' and 'Workflow file'. The 'build-and-run' tab displays a list of steps with their execution times: Set up job (0s), 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), and Complete job (1s). A 'Search logs' input field is at the bottom right.

The diagram illustrates a database schema with three tables: **fitness\_test\_results**, **users**, and **exercises**. The **fitness\_test\_results** table contains columns for user\_id (integer), test\_id (integer), datetime, height (integer), weight (integer), push\_up\_counter (integer), crunch\_counter (integer), and forward\_bend\_counter (enum). The **users** table contains columns for user\_id (integer), name (varchar), surname (varchar), user\_type (enum), email (varchar), and hashed\_password (varchar). The **exercises** table contains columns for user\_id (integer), push\_up\_counter (integer), squat\_counter (integer), curl\_counter (integer), crunch\_counter (integer), lunge\_counter (integer), v\_up\_crunch\_counter (integer), lateral\_raise\_counter (integer), forward\_bend\_counter (enum), and plank\_counter (integer). Relationships are shown between user\_id in **fitness\_test\_results** and **users**, and between user\_id in **users** and **exercises**.

fitness_test_results		users		exercises	
user_id	integer	user_id	integer	user_id	integer
test_id	integer	name	varchar	push_up_counter	integer
datetime	datetime	surname	varchar	squat_counter	integer
height	integer	user_type	enum	curl_counter	integer
weight	integer	email	varchar	crunch_counter	integer
push_up_counter	integer	hashed_password	varchar	lunge_counter	integer
crunch_counter	integer			v_up_crunch_counter	integer
forward_bend_counter	enum			lateral_raise_counter	integer

# Pose recognition, ML models and rules of checking the correctness





Rating

Log in

Register

## 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



# Demo



<https://gog.su/0cVh>

# Evaluation and Discussion

- ① **GymGuru solved problems with**
  - UNSUPERVISED TRAININGS
  - ONLY OFFLINE FITNESS TEST
  
- ② **By creating an ML-powered web application with**
  - DIFFERENT ML-SUPERVISED EXERCISES
  - IN-TIME VOICE ADVICE
  - HISTORY OF TRAINING SESSIONS
  - RATING AMONG ALL USERS
  - FITNESS TEST PASSING ABILITY

# Testing and Feedback

## We tested

- USER INTERFACE
- AVAILABILITY OF WEB SERVICES
- EXERCISES CHECKING

## Users' and expert's feedback

- UI & MAIN IDEA – GREAT
- ONLINE FITNESS TEST – CONVENIENT
- SEVERAL EXERCISES NEED TO BE SLIGHTLY RECONFIGURED

# Challenges and troubles

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①

**ML model choice**

②

**Tricks to deceive  
the checking  
system**

③

**Where to process  
the video**

## ROADMAP

# Future development

## Upcoming features

- VERIFICATION OF PERSON BY FACE
- MORE EXERCISES
- ONLINE COMPETITIONS

## Marketing Strategies

- INTEGRATION INTO UNIVERSITY SPORT SYSTEM
- DIGITAL MARKETING

Define structure  
and develop first  
prototype

July

Complete deployment  
and introduction to  
mass usage

September

June

Process user  
feedback, testing,  
finalize MVP

August

Expand functionality,  
improve existing solutions  
in human body recognition

October

Expand and integrate  
new hardware

WHAT WE LEARNED

# 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 gave us feedback during the product development process.

And we are grateful to our teacher assistant Karim ElDakroury, for his helpful advice and guidance.

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