Lappeenrannan teknillinen yliopisto
School of Technology

Sofware Development Skills

Maria Małysa 003005073

LEARNING DIARY

Software Development Skills: Full-Stack MODULE

Content

1 NODEJS PART 3

2 MONGODB PART 3

3 EXPRESS PART 6

4 REACT PART 9

5 MERN STACK 13

6 MY PROJECT 14

LEARNING DIARY

15.05.2025

I enrolled in the course

Environment Setup.

Installing and connecting applications.

16.05.2025

1 NODEJS PART

Video:

"Node.js Crash Course"

Content:
Node.js as an open-source JavaScript runtime.
Usage, advantages.
How Node.js Works.

Making project `nodejs-crash-2024`, files in repo.

2 MONGODB PART

Video:

"MongoDB Crash Course 2022"

Content:

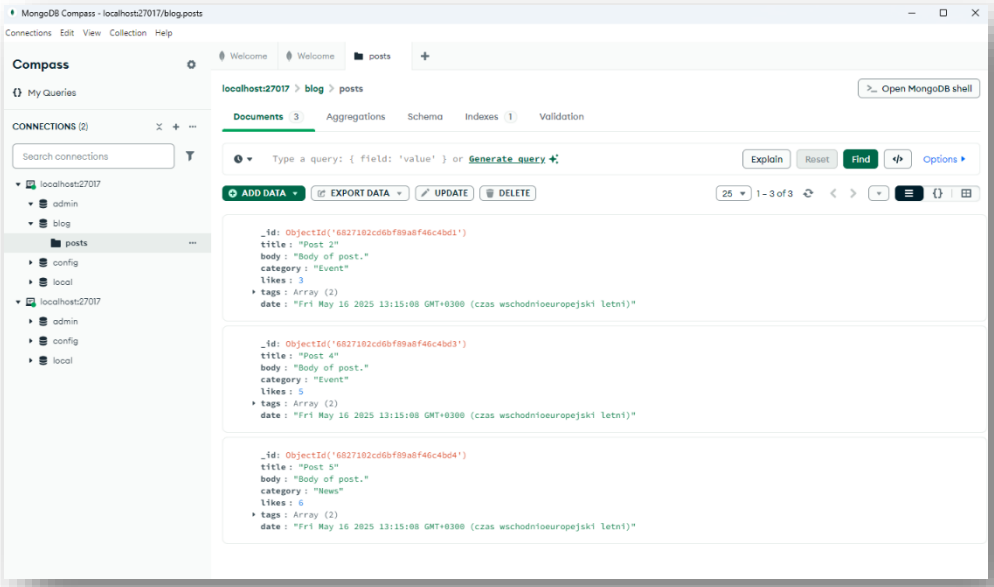
MongoDB as NoSQL (NotOnly SQL) – document database JSON.

Schema comparison and structure, scaling.

The importance and operation of the program.

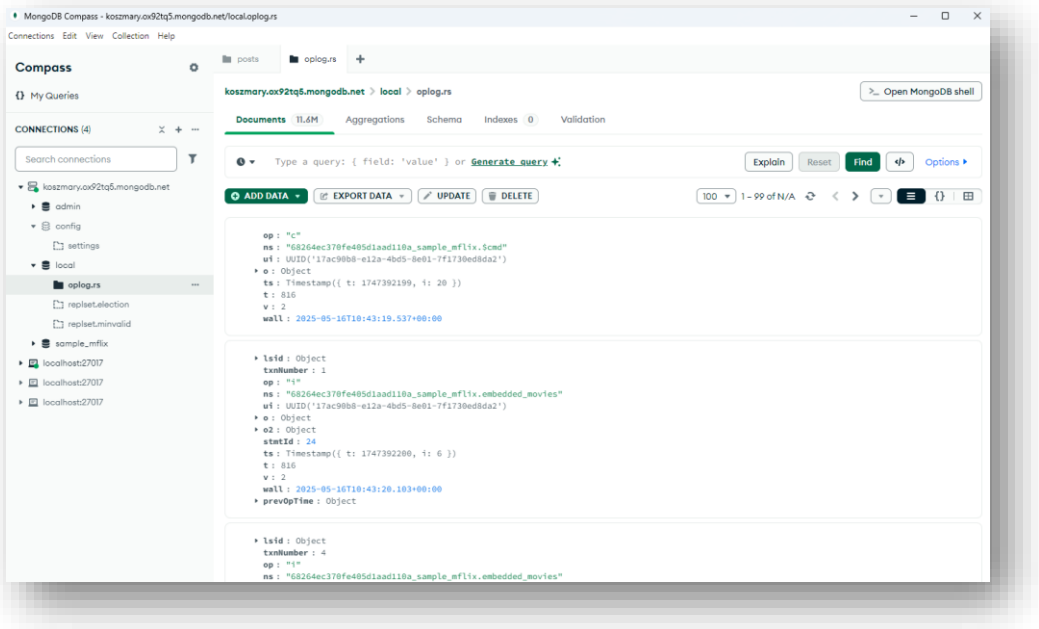
I started working with MongoDB and added text file in repo.

Everything worked and here are results after using cmd:

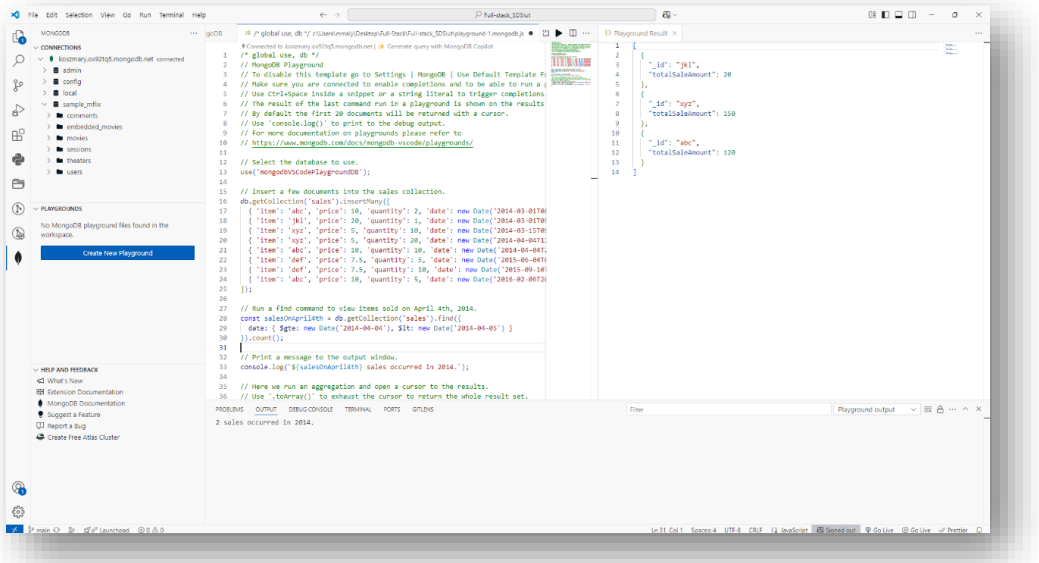



```
blog> db.posts.find()
[
  {
    _id: ObjectId('6827102cd6bf89a8f46c4bd1'),
    title: 'Post 2',
    body: 'Body of post.',
    category: 'Event',
    likes: 3,
    tags: [ 'news', 'events' ],
    date: 'Fri May 16 2025 13:15:08 GMT+0300 (czas wschodnioeuropejski letni)'
  },
  {
    _id: ObjectId('6827102cd6bf89a8f46c4bd3'),
    title: 'Post 4',
    body: 'Body of post.',
    category: 'Event',
    likes: 5,
    tags: [ 'news', 'events' ],
    date: 'Fri May 16 2025 13:15:08 GMT+0300 (czas wschodnioeuropejski letni)'
  },
  {
    _id: ObjectId('6827102cd6bf89a8f46c4bd4'),
    title: 'Post 5',
    body: 'Body of post.',
    category: 'News',
    likes: 6,
    tags: [ 'news', 'events' ],
    date: 'Fri May 16 2025 13:15:08 GMT+0300 (czas wschodnioeuropejski letni)'
  }
]
blog>
```

Added new database with sample data:



Database in VS:



MongoDB
Username: admin
Password: admin

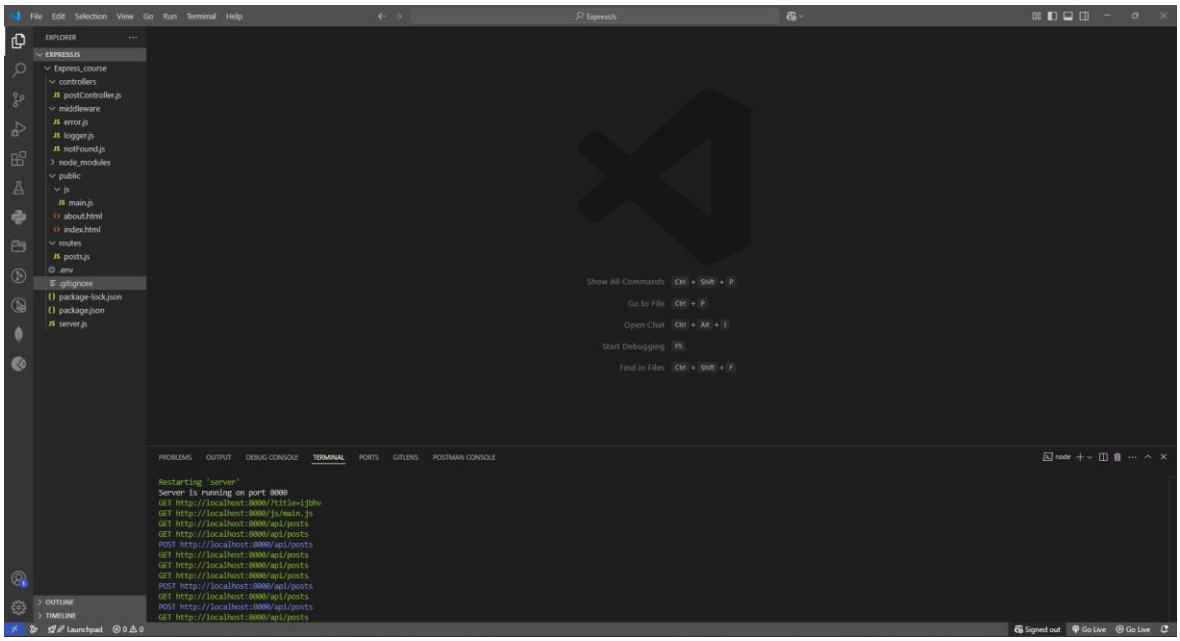
mongosh "mongodb+srv://koszmary.ox92tq5.mongodb.net/" --apiVersion 1 --username admin

17.05.2025

3 EXPRESS PART

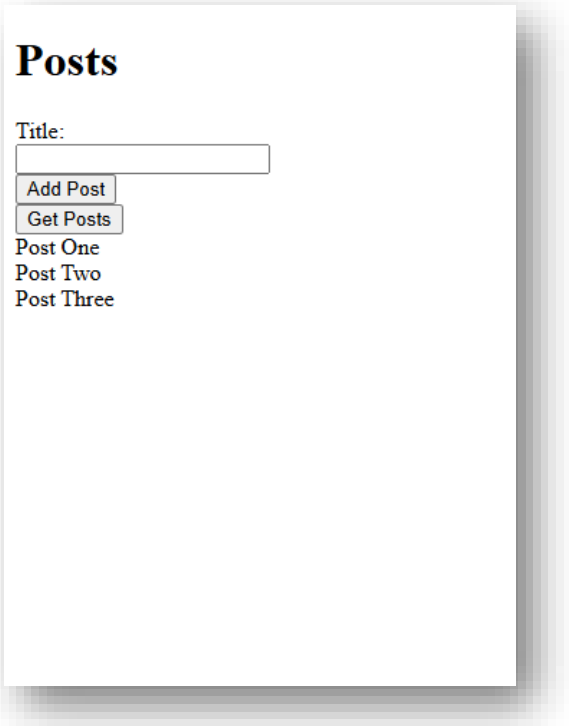
Video:
“Express Crash Course”
Content:
Express as framework for Node.js.
Usage, importance.
Opinionated vs Unopinionated framework.

Making project, files in repo.

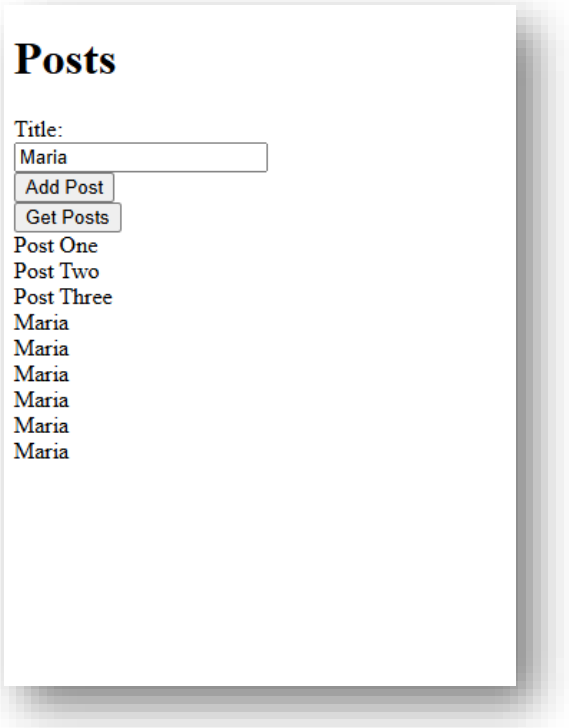


Everything is working properly.

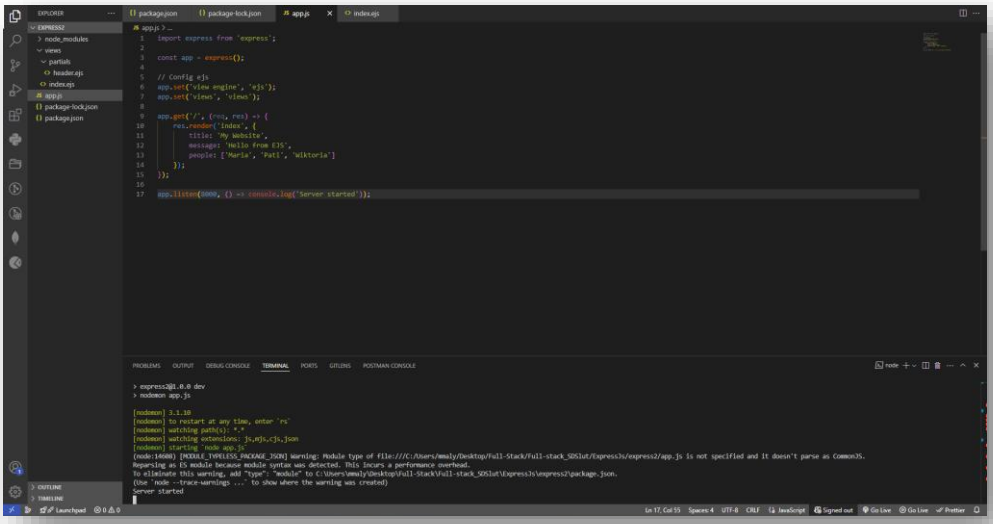
Working localhost:
Get Post

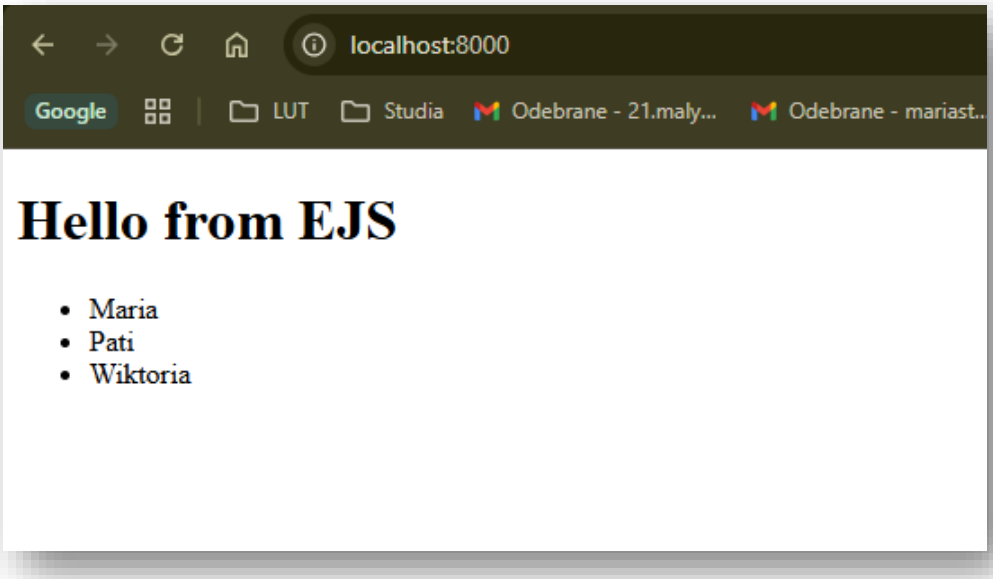


Add Post “Maria”



EJS part:


app.js
import express from 'express';
const app = express();
// Config ejs
app.set('view engine', 'ejs');
app.set('views', 'views');
app.get('/', (req, res) => {
res.render('index', {
title: 'My Website',
message: 'Hello from EJS',
people: ['Maria', 'Pati', 'Wiktoria']
});
});
app.listen(8000, () => console.log('Server started'));
TERMINAL
> express2@1.0.0 dev
> nodemon app.js
[nodemon] 3.1.10
[nodemon] to restart at any time, enter `rs`
[nodemon] watching path(s): *.*
[nodemon] watching extensions: js,mjs,cjs,json
[nodemon] starting `node app.js`
Reparsing as ES module because module syntax was detected. This incurs a performance overhead.
To eliminate this warning, add "type": "module" to C:\Users\mmaly\Desktop\Full-Stack\Full-stack_SDSlut\ExpressJs\express2\package.json.
(Use `node --trace-warnings ...` to show where the warning was created)
Server started


localhost:8000
Google
LUT
Studia
Odebrane - 21.maly...
Odebrane - mariast...
Hello from EJS
Maria
Pati
Wiktoria

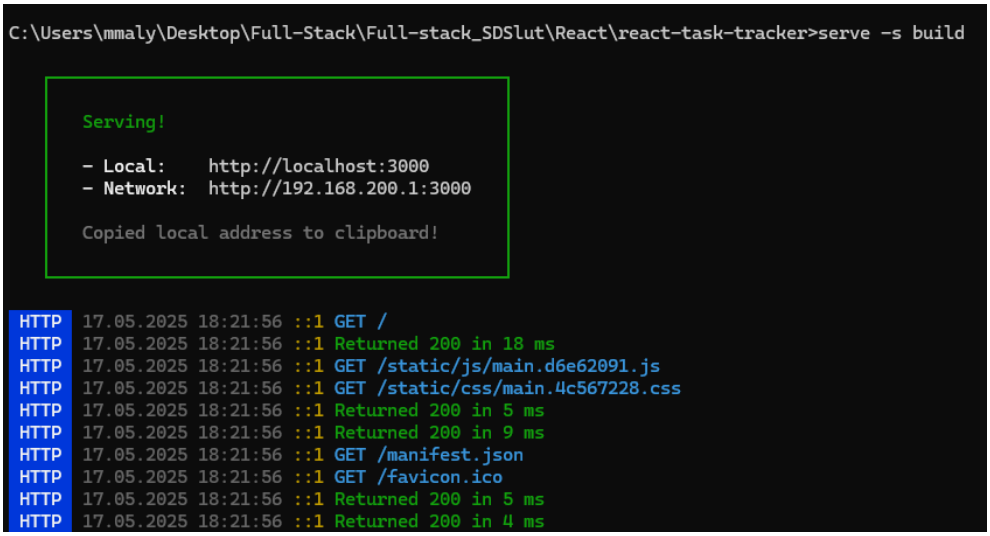
4 REACT PART

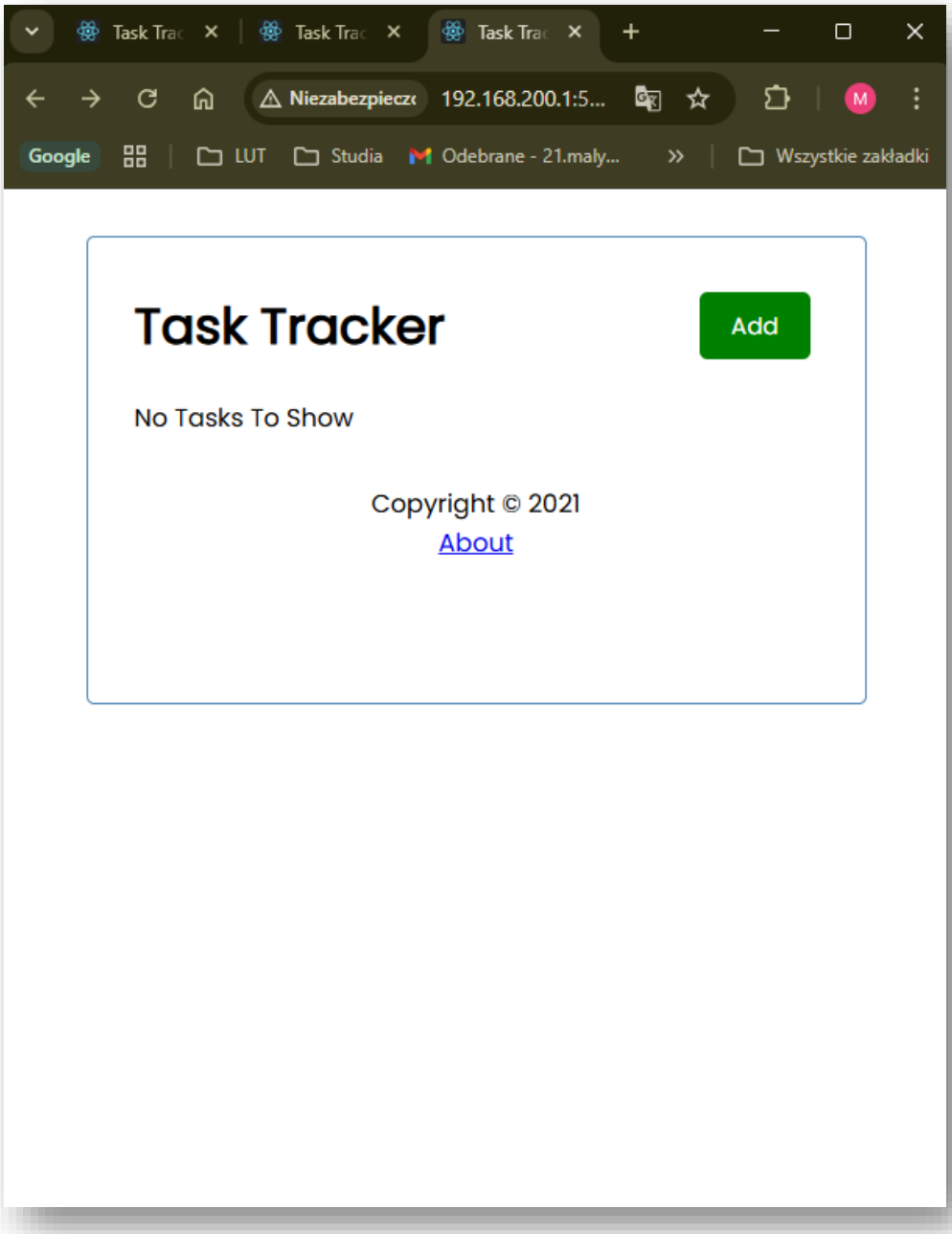
18.05.2025

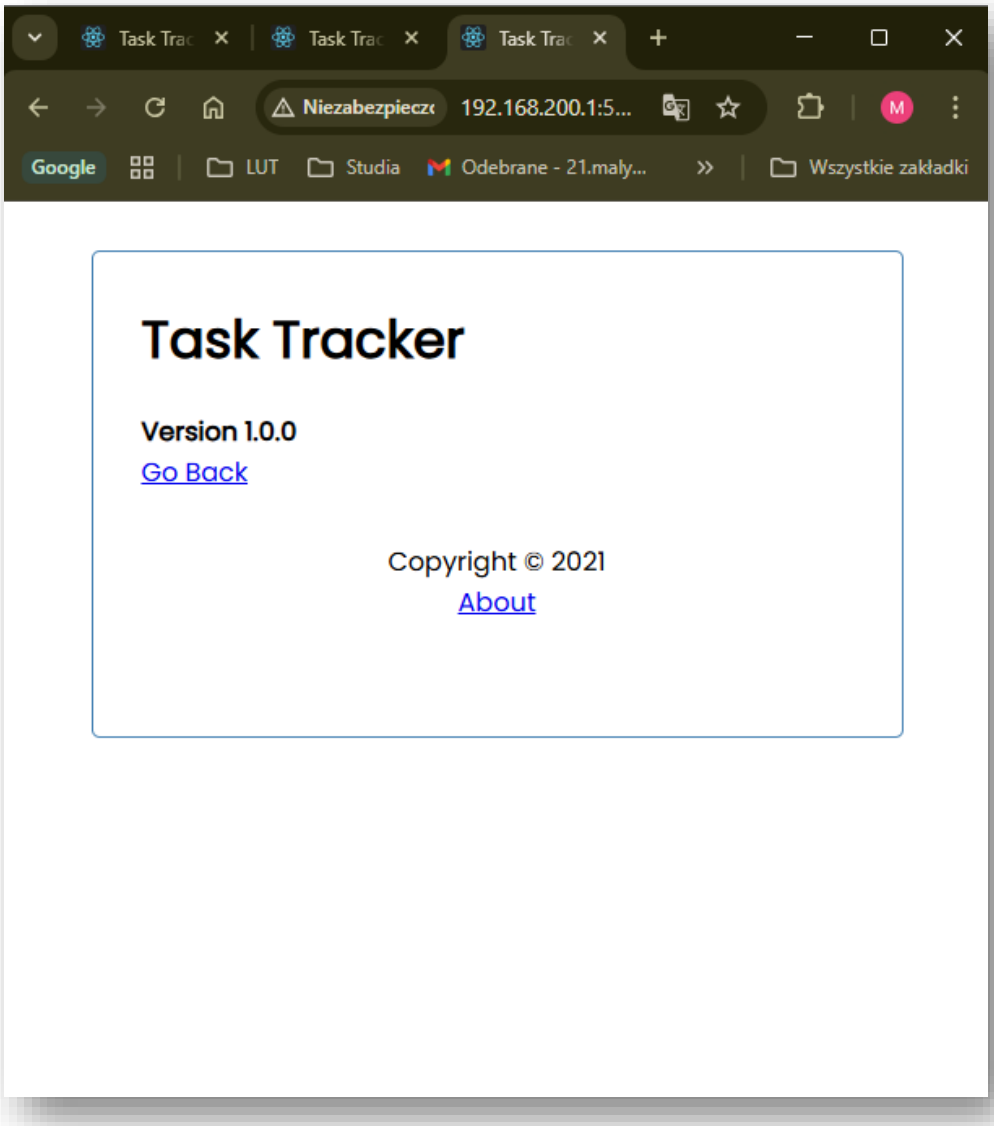
Project: https://react.dev/learn
Content:
Using components, markup and styles.
Data display and share, conditions and lists.

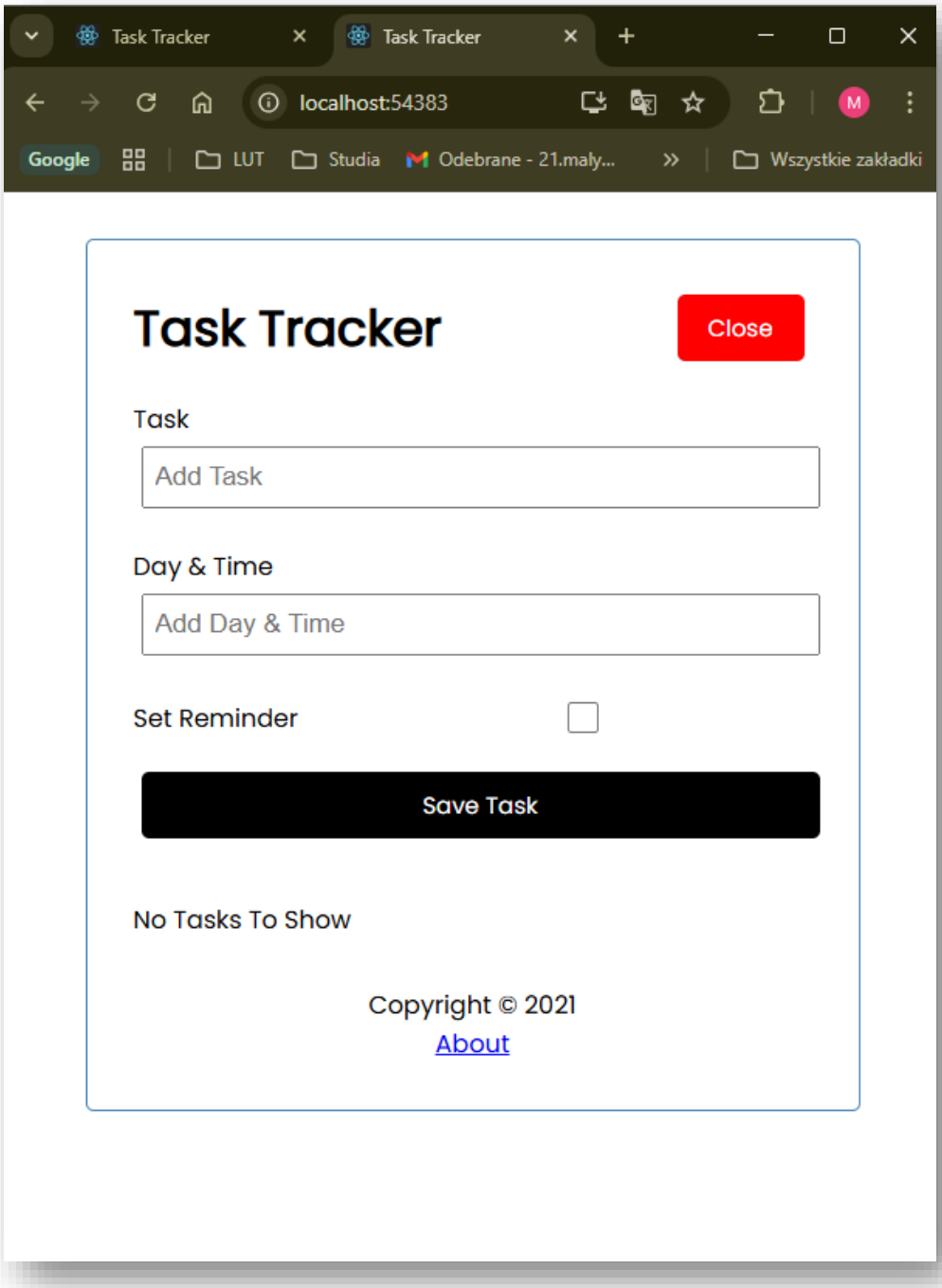
Video: "**React JS Crash Course**"
React as a library for building user interfaces – front end framework.
Importance , usage.
Components.
Working with State

Working project:




Task Trac
Task Trac
Task Trac
Niezabezpiecz
192.168.200.1:5...
Google
LUT
Studia
Odebrane - 21.maly...
Wszystkie zakładki
Task Tracker
Add
No Tasks To Show
Copyright © 2021
About

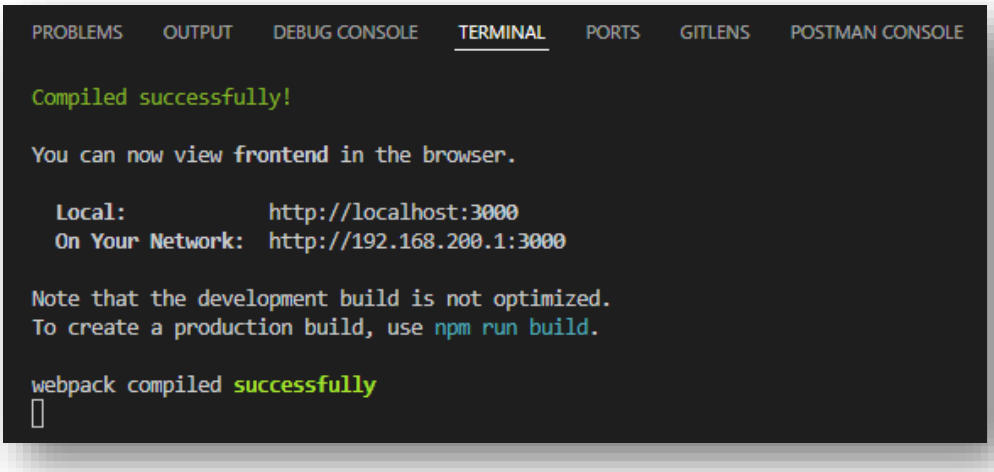

Task Trac
Task Trac
Task Trac
Niezabezpieczo
192.168.200.1:5...
Google
LUT
Studia
Odebrane - 21.maly...
Wszystkie zakładki
Task Tracker
Version 1.0.0
Go Back
Copyright © 2021
About

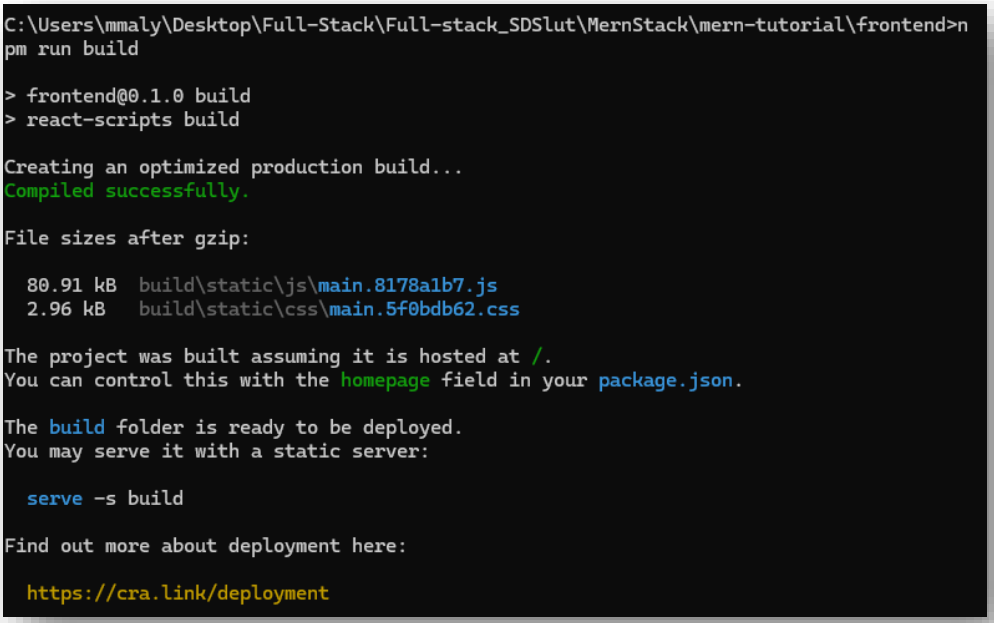

Task Tracker
Task Tracker
localhost:54383
Google
LUT
Studia
Odebrane - 21.maly...
Wszystkie zakładki
Task Tracker
Close
Task
Add Task
Day & Time
Add Day & Time
Set Reminder
Save Task
No Tasks To Show
Copyright © 2021
About

5 MERN STACK

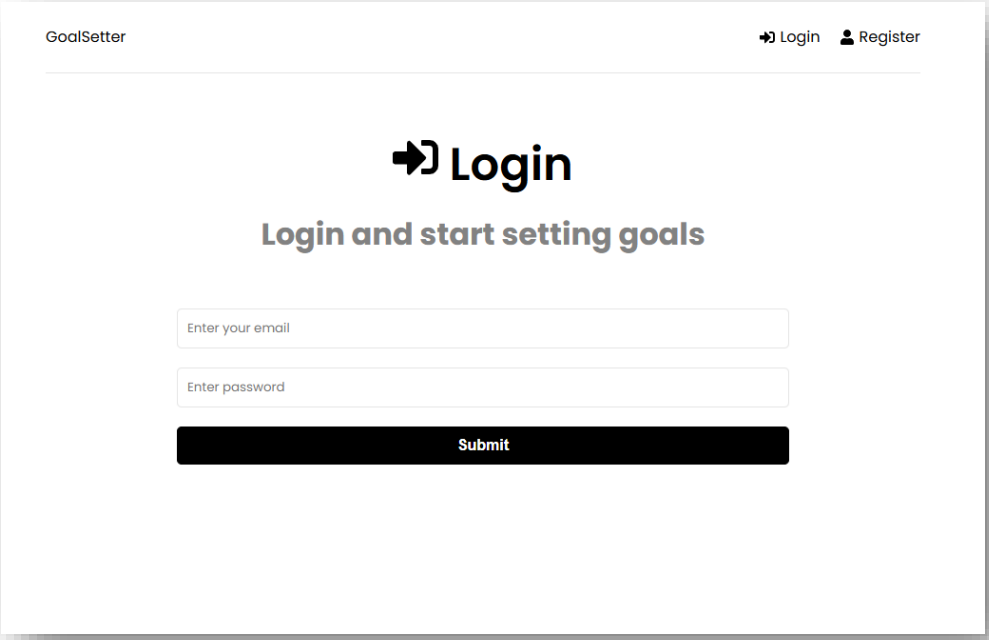
19.05.2025

Course work from [playlist]





```
(node:11068) [MONGODB DRIVER] Warning: useNewUrlParser is a deprecated option: us
eNewUrlParser has no effect since Node.js Driver version 4.0.0 and will be remove
d in the next major version
(Use `node --trace-warnings ...` to show where the warning was created)
(node:11068) [MONGODB DRIVER] Warning: useUnifiedTopology is a deprecated option:
 useUnifiedTopology has no effect since Node.js Driver version 4.0.0 and will be
removed in the next major version
Server started on port 5000
MongoDB Connected: ac-7xhkmru-shard-00-01.spcnpip.mongodb.net
```



6 MY PROJECT

I created the application as a simple and interactive platform for practicing basic mathematical operations. Its main goal is to enable users – especially children or people who want to improve their mathematical foundations – to practice adding, subtracting, multiplying and dividing on a daily basis.

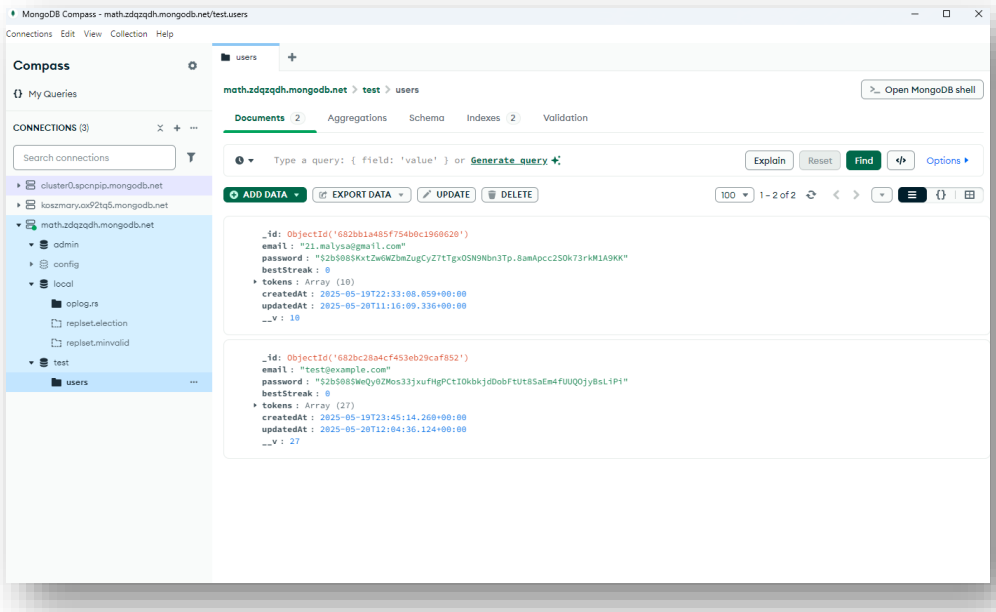
I wanted the application to be quick, intuitive and motivating to use, which is why I introduced features such as:

- counting the result and the current series of correct answers (streak),
- a system of messages informing about the correctness of the answer,
- a simple and clear interface.

I used a modular approach – each component has its own responsibility. Thanks to the backend with JWT authorization, you can log in and track your progress.
My goal was to create something that could be expanded – e.g. with new game modes, ranking, daily challenges, achievements or integration with a teacher account.

Working backend:

MongoDB compass:



Register

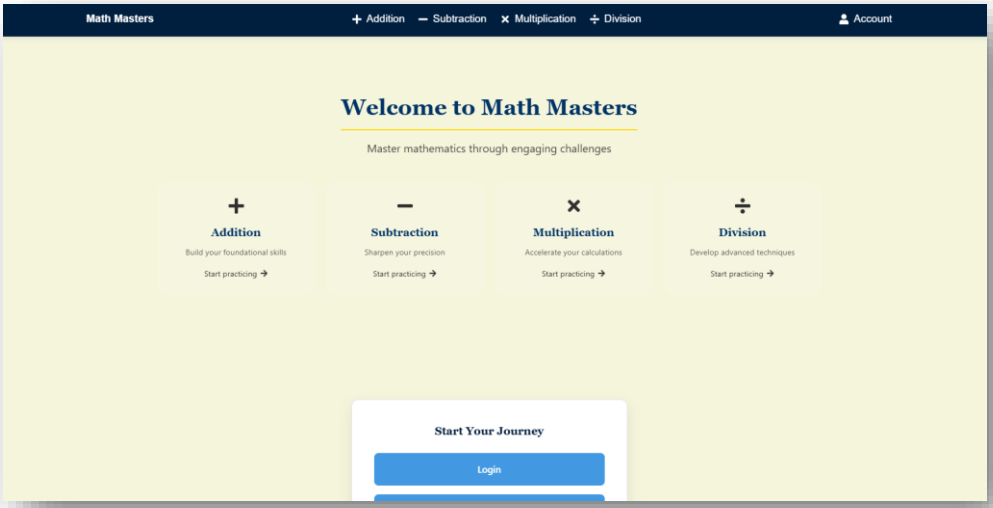
```
C:\Users\mmaly\Desktop\Full-Stack\Full-stack_SDSlut\Project\MathMasters\backend>curl -X POST http://localhost:5000/api/auth/register -H "Content-Type: application/json" -d "{\"email\":\"test@example.com\",\"password\":\"test123\"}"
{"user":{"email":"test@example.com","password":"$2b$08$WeQy0ZMos33jxufHgPCtIOkbkjdDobFtUt8SaEm4fUUQOjyBsLiPi","bestStreak":0,"_id":"682bc28a4cf453eb29caf852","tokens":[{"token":"eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJfaWQiOiI2ODJiYzI4YTRjZjQ1M2ViMjljYWY4NTIiLCJpYXQiOjE3NDc2OTgzMTR9.NwiZL9sS1Y-ubHu70KFWwMNd5Yq3pzIUFk-oReUC40Y","_id":"682bc28a4cf453eb29caf854"}],"createdAt":"2025-05-19T23:45:14.260Z","updatedAt":"2025-05-19T23:45:14.330Z","__v":1},"token":"eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJfaWQiOiI2ODJiYzI4YTRjZjQ1M2ViMjljYWY4NTIiLCJpYXQiOjE3NDc2OTgzMTR9.NwiZL9sS1Y-ubHu70KFWwMNd5Yq3pzIUFk-oReUC40Y"}
```

Login

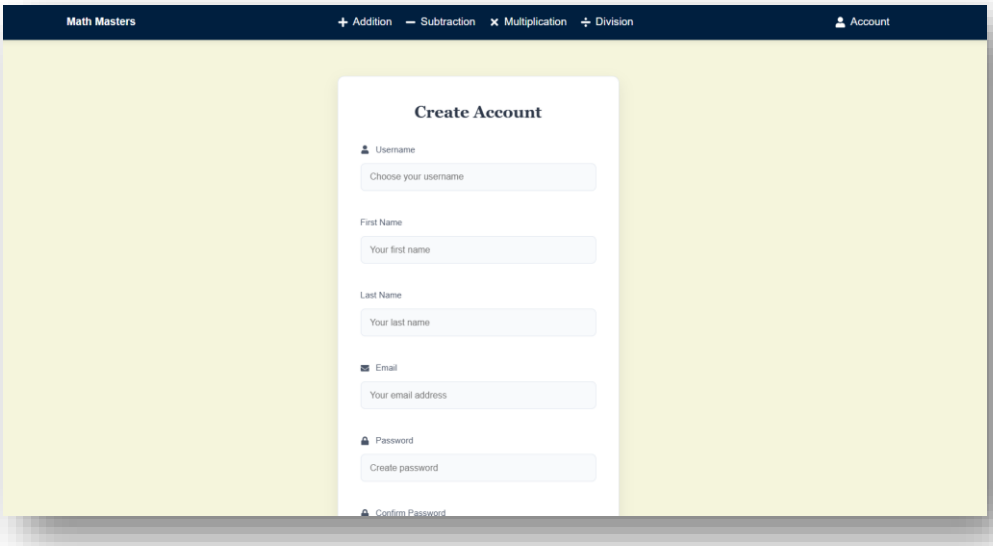
```
C:\Users\mmaly\Desktop\Full-Stack\Full-stack_SDSlut\Project\MathMasters\backend>curl -X POST http://localhost:5000/api/auth/login -H "Content-Type: application/json" -d "{\"email\":\"test@example.com\",\"password\":\"test123\"}"
{"user":{"_id":"682bc28a4cf453eb29caf852","email":"test@example.com","bestStreak":0},"token":"eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJfaWQiOiI2ODJiYzI4YTRjZjQ1M2ViMjljYWY4NTIiLCJpYXQiOjE3NDc2OTgzOTJ9.m6N6u1lb82rYPDTqEcA-BPrll1baEbsBk2VBeOP0fo"}
```

Frontend:

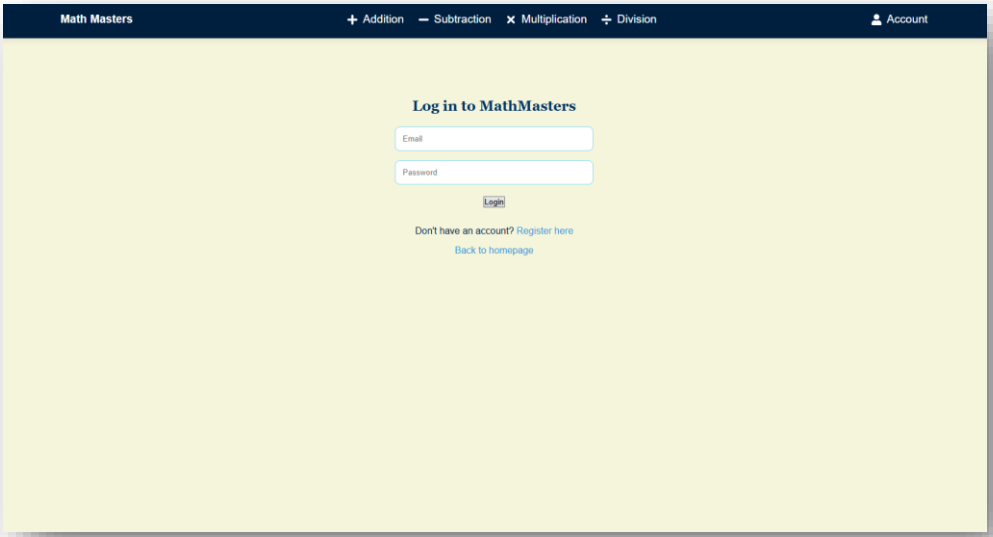
Home page



Register page

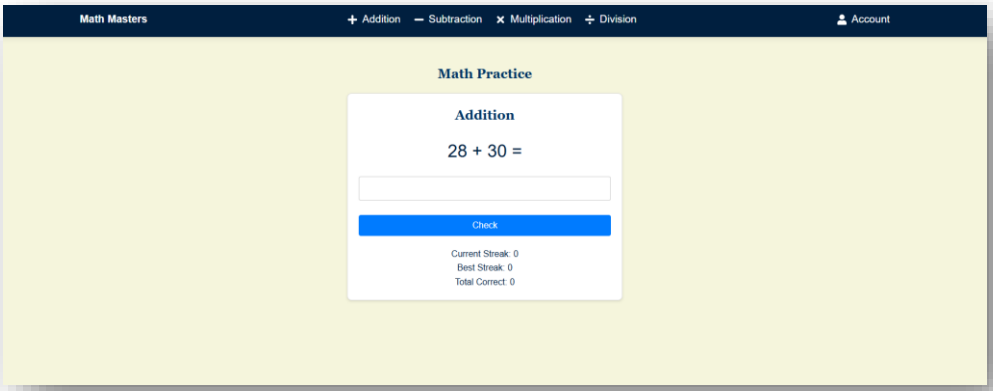


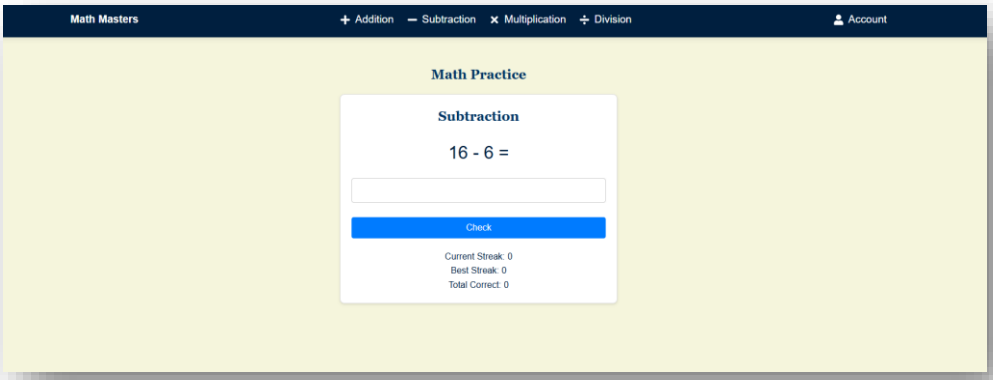
Login page

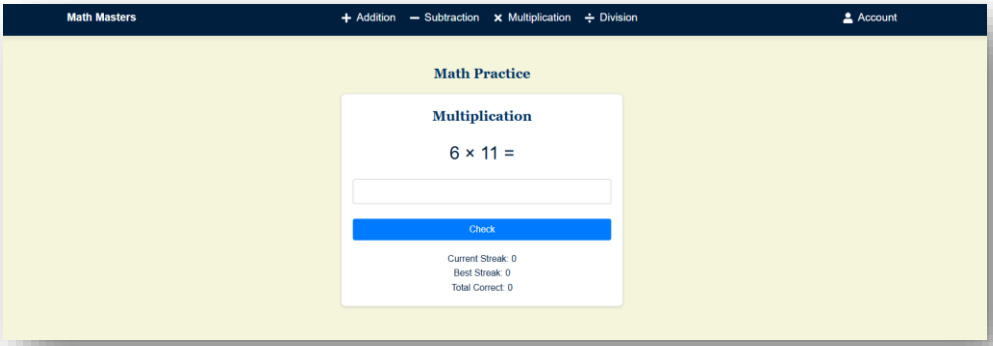


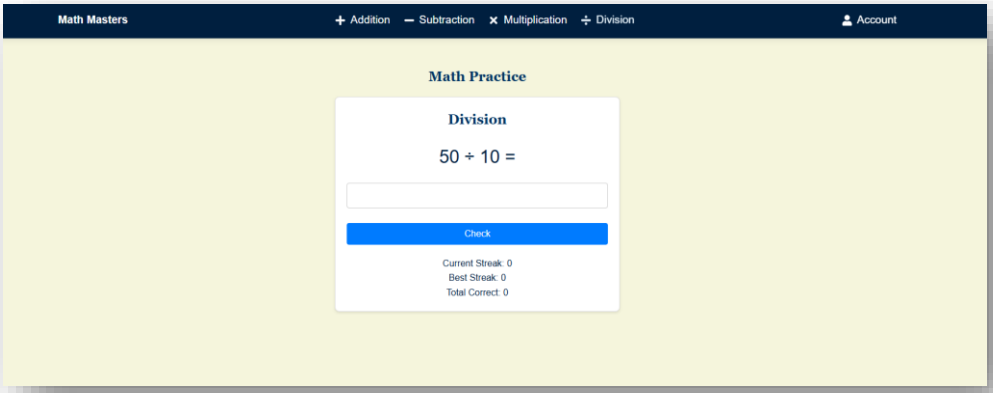
Example credentials:
Email: test@example.com
Password: test123

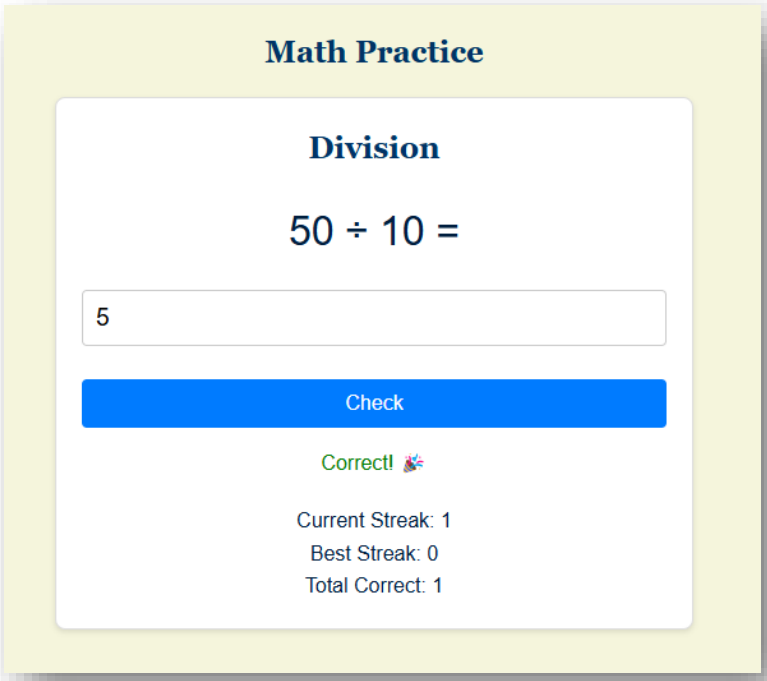
Practice page

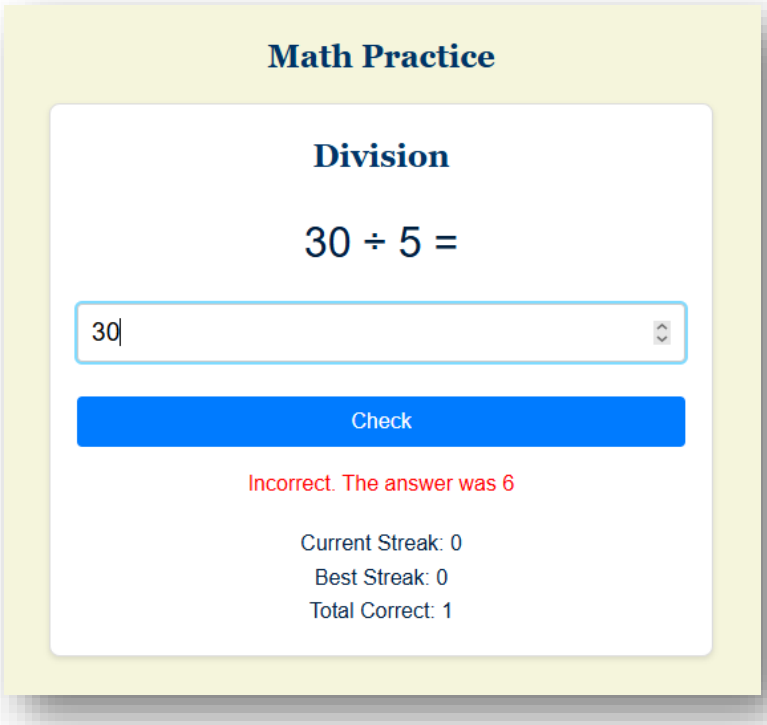



Math Masters
+ Addition
− Subtraction
× Multiplication
÷ Division
Account
Math Practice
Subtraction
16 - 6 =
Check
Current Streak: 0
Best Streak: 0
Total Correct: 0


Math Masters
+ Addition
− Subtraction
× Multiplication
÷ Division
Account
Math Practice
Multiplication
6 × 11 =
Check
Current Streak: 0
Best Streak: 0
Total Correct: 0


Math Masters
+ Addition
− Subtraction
× Multiplication
÷ Division
Account
Math Practice
Division
50 ÷ 10 =
Check
Current Streak: 0
Best Streak: 0
Total Correct: 0


Math Practice
Division
50 ÷ 10 =
5
Check
Correct! 🎉
Current Streak: 1
Best Streak: 0
Total Correct: 1


Math Practice
Division
30 ÷ 5 =
30
Check
Incorrect. The answer was 6
Current Streak: 0
Best Streak: 0
Total Correct: 1

Video of my project running:
https://youtu.be/T7u3N2qqn2o