

TALLINNA TEHNIKAÜLIKOOL
School of Information Technologies

Ahmed Abdullajev 192816IADB

COMFORTABLE STUDENT SITE FOR LEARNING

Distributed systems project

Supervisor: Andres Käver

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Author's declaration of originality

I hereby certify that I am the sole author of this thesis. All the used materials, references to the literature and the work of others have been referred to. This thesis has not been presented for examination anywhere else.

Autor: Ahmed Abdullajev

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INTRODUCTION

Briefly from the beginning. Web application where users:

- 1) can take quizzes in various subjects (Math, Physics, JavaScript, Python, Linux, etc..).
- 2) can ask questions & make posts on different topics, and other users can answer & comment on these posts/questions.
- 3) can also create Todo lists.

I am making this web application with the goal of creating a pleasant and comfortable environment for students to study with other similar students. In order to help students with lessons, so that they reinforce their knowledge in a certain subject, in order to help prepare for exams in various subjects. For example, in such subjects as Javascript, Java, C#, .net. etc.

And one of the ways to help students and make their studies more comfortable and interesting is with the help of quizzes (tests). Because it's simple and fast. For each subject, the admin will add quizzes. Each subject will have its own quizzes each quiz will have its own multiple-choice questions with 1 correct answer. That is, the theme(title) of the quiz should correspond to the subject. Also, questions in quizzes should correspond to the theme(title) of the quiz. Everything is pretty logical.

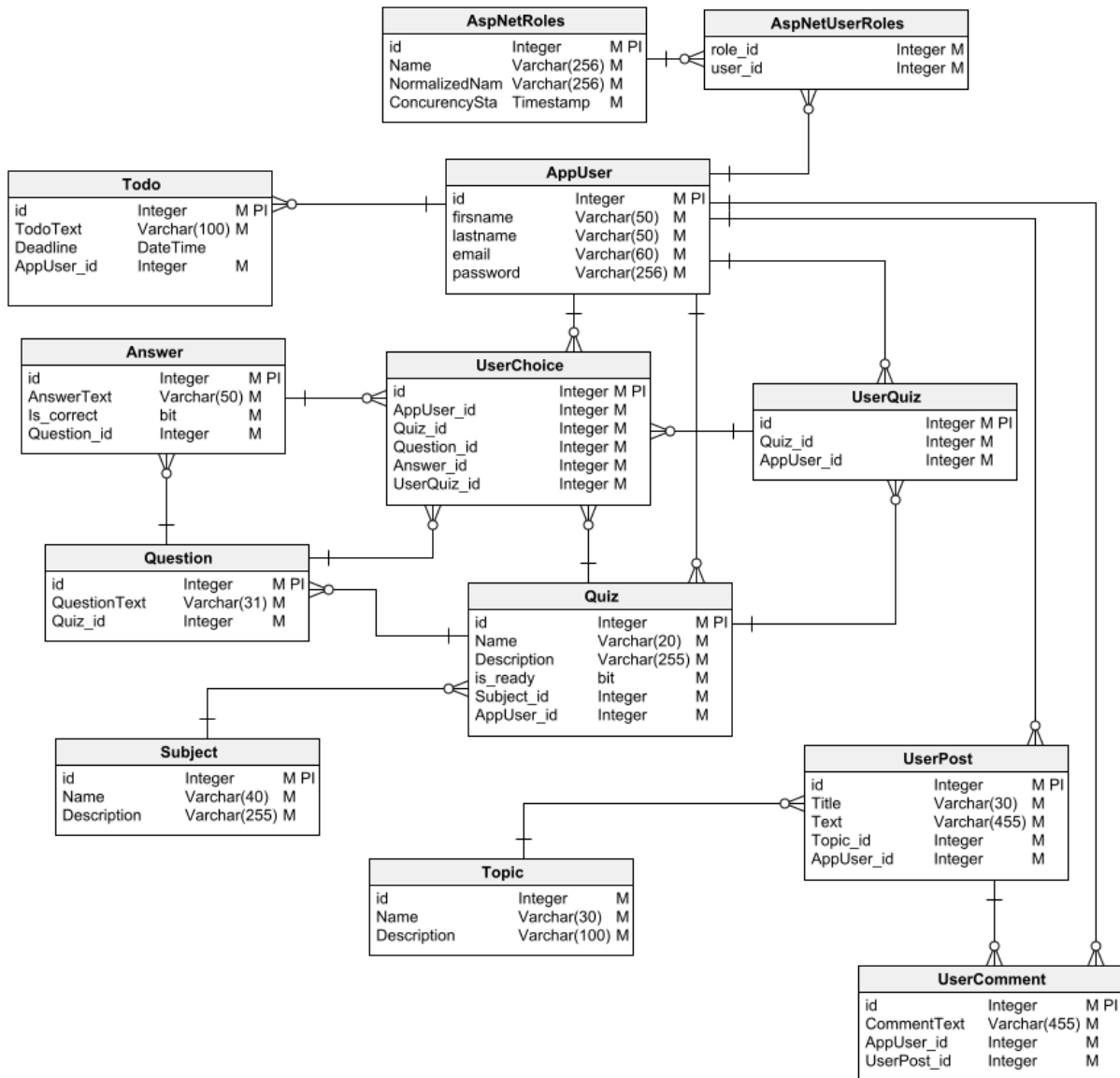
Students will be able to take quizzes in any subject as long as they want and will also see their results, so they can practice and prepare for exams by taking tests. It is logical that the admins who will do quizzes for the subjects will be those who have already successfully passed this subject.

Students will also be able to ask their questions on various topics mainly related to their studies in special topics on the site and will be able to receive answers from other users. Or they can simply make posts on different topics on the site and be able to lead a discussion, which will help them to plunge into their studies as much as possible.

Students will also be able to create their To-do lists. Let's say they were asked to do some homework and there is some kind of deadline. They will be able to add it to their Todos with a description and a due date on our website so that they do not have to use another specialized application for this. All for the convenience of the student. We have taken everything into account.

Topics, subjects, quizzes, questions for quizzes and answers for questions can only be added by Admins(role) (for now, I will be the admin, then maybe I will find people). Students(role) can only take quizzes, create posts & questions on topics and add comments to posts, as well as create their own to-do lists.

ERD Diagram



ABOUT EACH TABLE IN DATABASE AND ANALYZE

TABLES FOR QUIZ FLOW

Ok lets start from main feature of our web application, which is taking quizzes:

Subject – table:

To make it easier for students to navigate which subject the quiz belongs to, we need a Subject table that will have quizzes corresponding to it. Let's say the JavaScript subject will have quizzes about: frameworks (React, Vue), JS OOP, JS datatypes, JS history and so on.

Quiz – table:

As you already understood, each subject will have its own quizzes, and the quizzes will have their own corresponding questions. So, if quiz is ready with all his questions and answers. `is_ready` field will be `true(1)`. Admin will decide if quiz is ready.

Question – table:

Each of the quizzes will have a number of questions. Let's say in one quiz there can be 5 questions in some 20 questions. It is logical that the questions will correspond to the topic of the quiz. Also, each question will have a list of answers - selective answers, with 1 correct answer (küsimused valikvastusega, kus on 1 õige vastus)

Answer – table:

Questions will have a list of answers, the answer may be true or false.

UserChoice – table:

In this table, we already collect the user's answers to each question that he answered. Also here we have data about the quiz, about the question. Data is added to the table during the quiz, with each answer to the question.

UserQuiz – table:

We need this table to show the results of the quiz after passing it, since the user can take the same quiz as much as he wants. I would say it is helper table for user quiz flow.

TABLES FOR POSTS&COMMENTS FLOW

Next feature of our web application is user's ability to add posts and comments on posts:

Topic – table:

To make it easier for users to navigate, we will have different topics on the site, under which they can add relevant posts. Let's say the title of topic is "Studying in America", then under it the user can add a corresponding post, for example, "Is it expensive to study in America?", And under the post, users can already add comments, for example, "Yes, studying in America is expensive, because ..."

UserPost – table:

This is the post table that stores the posts of the user.

UserComment – table:

Under each post, the user can add a comment.

TABLE FOR ADDING TODOS FLOW

Last feature of our web application is adding your todos with deadline if you want.

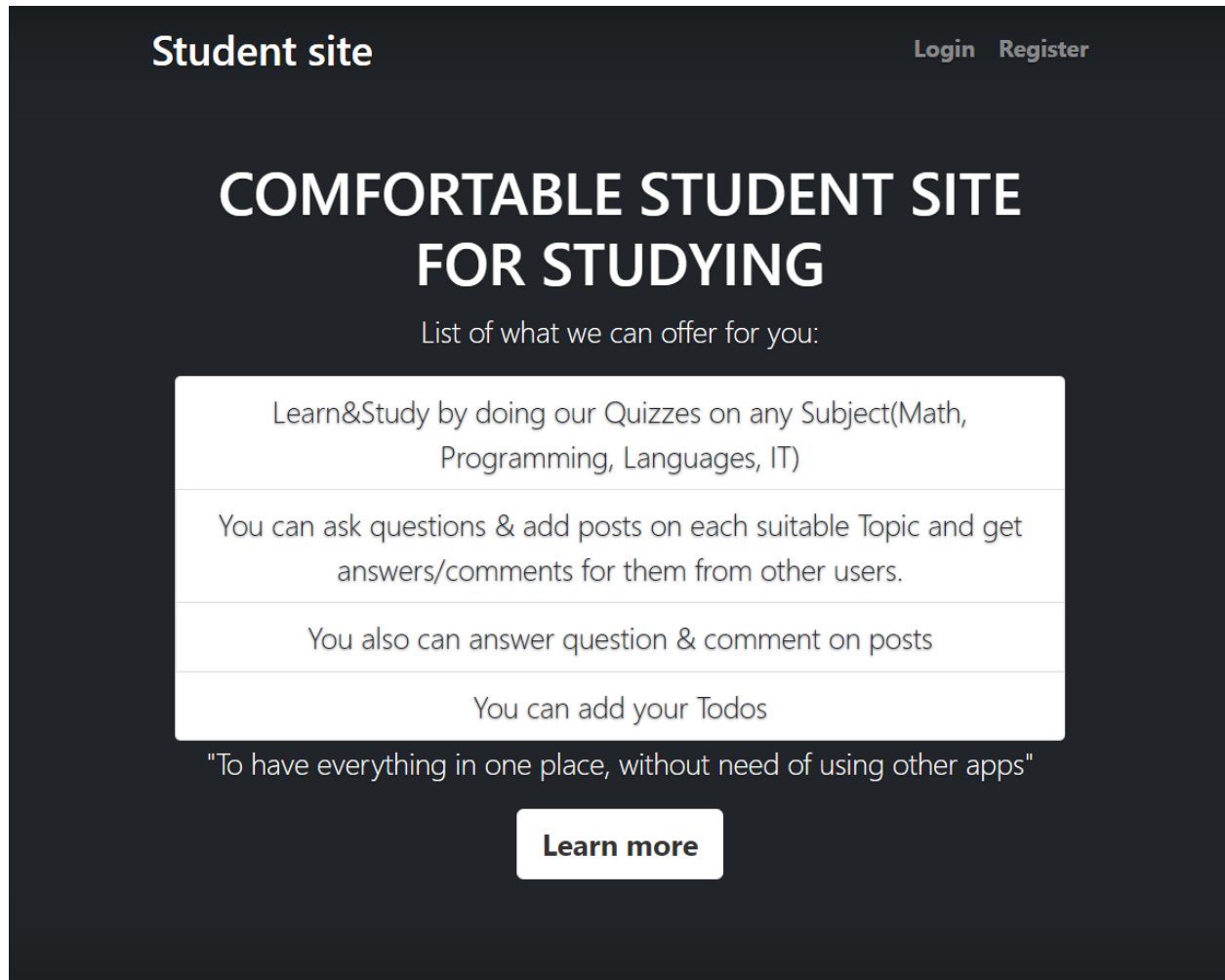
Todo – table:

This table stores users' Todos. Suppose a user can add here all his homework with a due date and description, so that he does not have to go somewhere and look for homework if he forgot.

CLIENT POSITIVE FLOW WITH PROTOTYPES

MAIN PAGE

The first page that the user will see, there will be a brief description of our web application - a list of what we can offer the user. From there, he can go to the registration and login page.



AUTHORIZATION PAGE

The user liked the idea of our site and the list of what we can offer him. He goes to the registration page, where he writes his data to register.

Student site

Login

REGISTRATION PAGE

Email address

First Name

Last Name

Password

Repeat Password

Submit

DASHBOARD

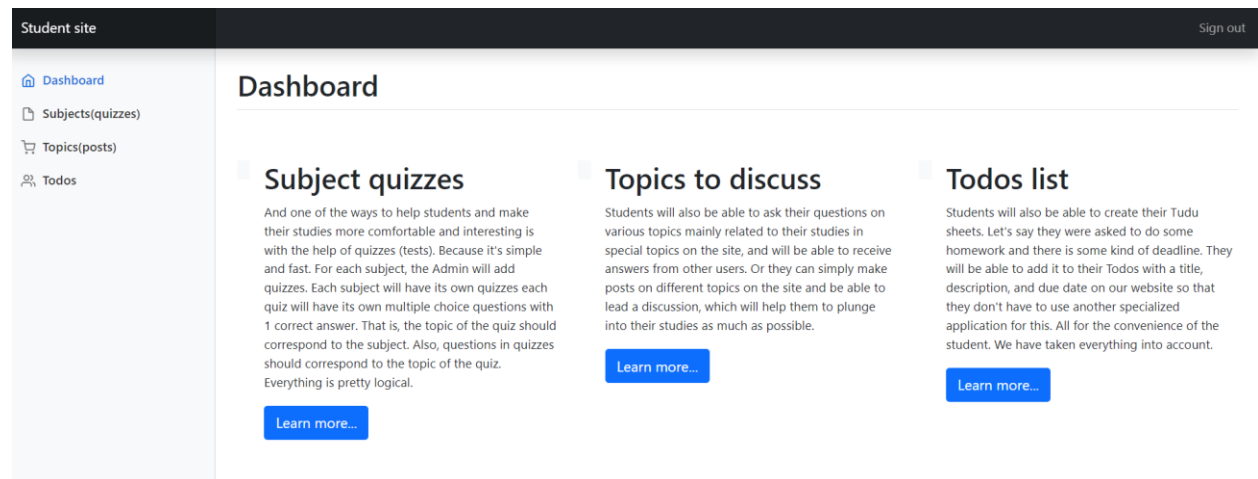
The most important part of the web application, everything happens here.

When the user has successfully logged in, he will be taken to the dashboard. Here he can choose what he wants to do. Immediately on the main dashboard page there will be all the main sections of our web application. Also, all the main sections will be in the sidebar. Under the main sections there will be subsections.

The 3 main sections of our website are Subject, Topics and Todos. These sections will have subsections. In the Subject section there will be all the subjects that the admin added, under the subjects there will be corresponding quizzes.

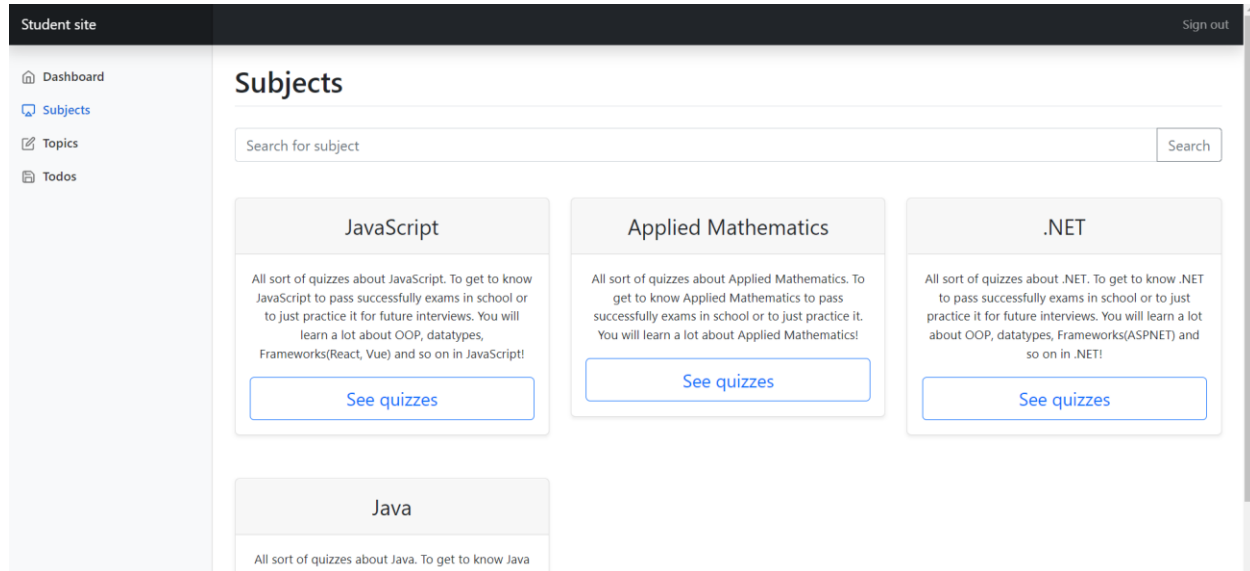
Under the different Topics added by the admin, there will be all relevant posts that users add (also add comments under the posts).

Under Todos, all the user's todos, where they can add Todos and see the entire list.



Subjects page

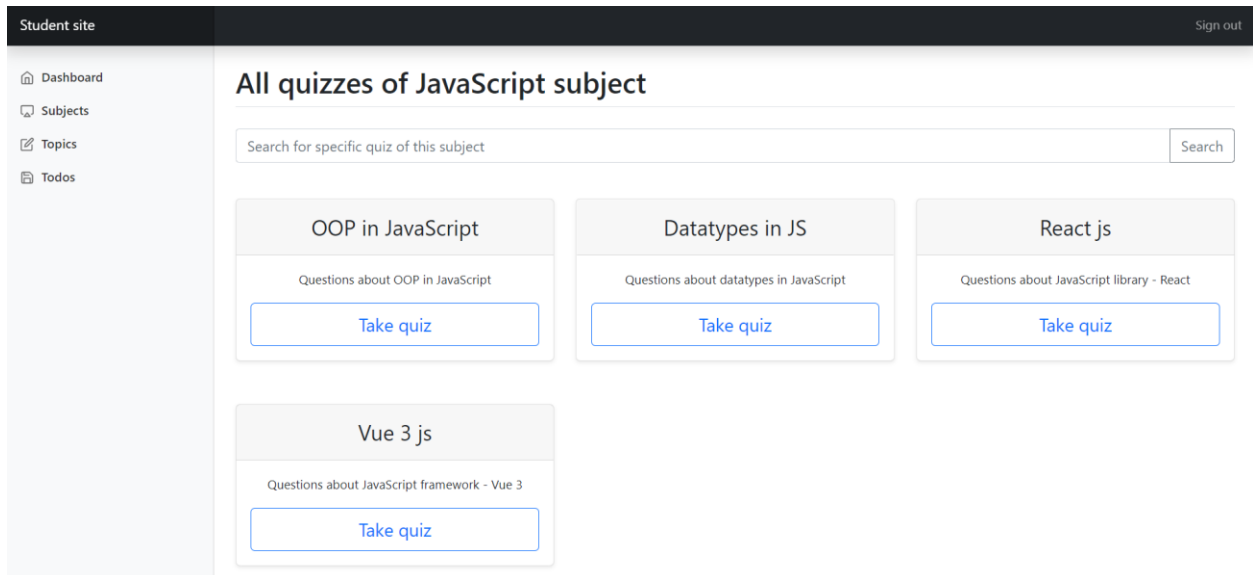
On the Subject page, the user will see all the available subjects that can be taken in quizzes. He will see the name of the subjects as well as their description. Also, the user will be able to find the subject through the search. When you click on the “See quizzes” button, it will go to a page with quizzes on the selected subject.



On this page, all existing subject on the site (which were added by the admin).

Quizzes page

When the user has selected a subject, he will be given all the quizzes on the selected subject. The user will see the name of the quizzes, description. Also, the user can find a quiz by name through the search. When you click “Take quiz”, he will go to the page with this quiz, where he will already answer the quiz questions.



Here we have moved to the JavaScript subject page, where we see all the quizzes on this subject.

Taking specific quiz page

A page with a quiz, where the user takes the quiz(answers to questions), he sees the question and can choose one answer. When you click on an answer, he will immediately see whether he answered correctly or not, he will also see his score and the question number. At the end of the quiz, he will see all his answers and also see if he answered correctly.

JavaScript OOP - Quiz

Question 1/6

Inside which HTML element do we put the JavaScript ?

<script>

<js>

<scripting>

<javascript>

Your score:

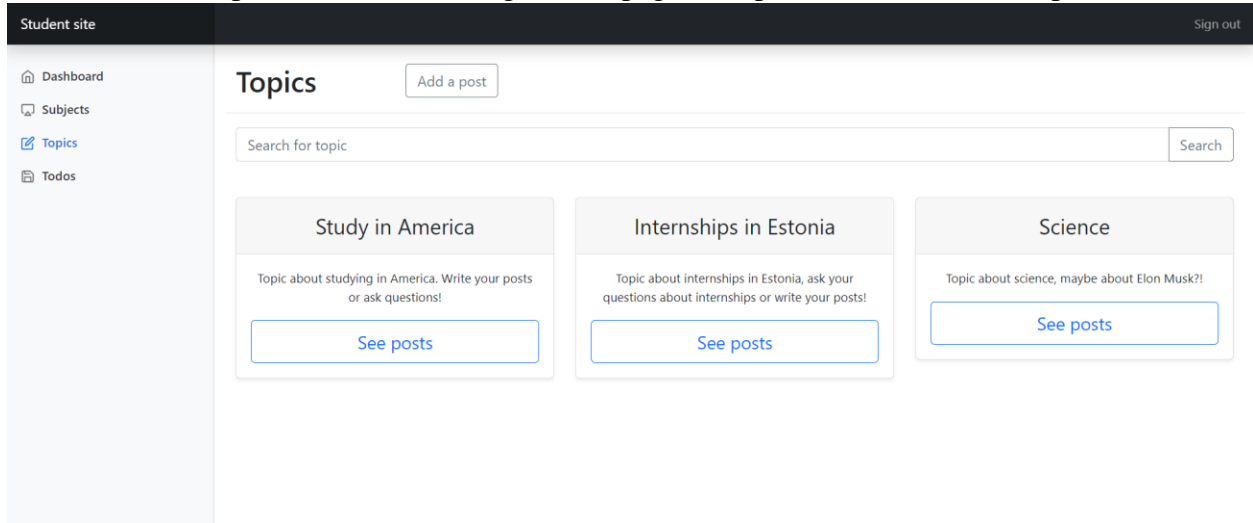
0/6

Skip

Next

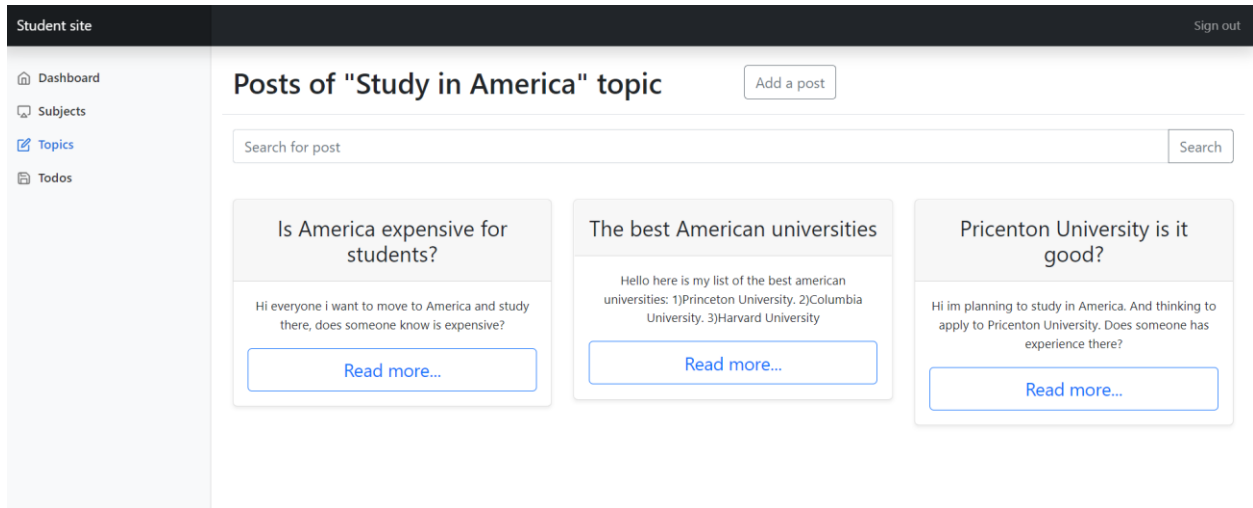
Topics page

On the Topics page, the user will see all available topics for discussion - for adding and viewing posts. He will see the title of the topics as well as their description. Also, the user will be able to find a topic through the search and there will be an “Add a post” button on the page. When you click on the “See posts” button, it will go to the page with posts on the selected topic.



Posts page of selected topic

This page will contain all the posts on the selected topic. The user will see the post titles as well as their description. Also, the user will be able to find the post through the search. There will also be an “Add a post” button on the page. When you click on the Read more button, he will go to the page with the selected post where the post itself will be and comments under it, and the user will also be able to add a comment under the post.



Here we moved to a topic called “Study in America”

Selected Post page

On this page we will already see the post itself that we have chosen. The user will see the post, comments under it, and can also write his own comment.

Student site

Sign out

Dashboard

Subjects

Topics

Todos

Post: Is America expensive for students?

Is America expensive for students?

Hi everyone i want to move to America and study there, does someone know is expensive?

Author: Ahmed Abdullajev

James Thomas

Yes it is...

Michael Hussey

Don't ask dumb questions.

Thomas Key

It is really expensive.. for you for sure.

Write your comment

Submit

Todos page

On the Todo page, the user can add their own Todos, and can also add a deadline to them. Also, the user can find Todo through the search. On the same page, they see their Todos. Everything is pretty user friendly.

Student site

Sign out

Dashboard

Subjects

Topics

Todos

Todos

Todo

Deadline

| No. | Todo item | Deadline | Actions |
|-----|---------------------------|------------|---------------------------------------|
| 1 | Do Javascript hw | 22.03.2022 | <input type="button" value="Delete"/> |
| 2 | Do Hajus homework | 22.03.2022 | <input type="button" value="Delete"/> |
| 3 | Sign up for online course | 22.03.2022 | <input type="button" value="Delete"/> |

SUMMARY

I think you understand what I want to do. I did not make prototypes for all pages. But I think you roughly understand what the project will look like. The project will not look exactly like on the prototypes, may differ. All prototypes are in my Gitlab:

<https://gitlab.cs.ttu.ee/ahabdu/icd0021-21-22-s>