T3A2

Coder Academy Full Stack Web App Assignment

Raphael Florea, Zak Mohamed, Benjamin Phillips

Purpose

The purpose of this project is to make an app that combines the addictiveness of short-form content with education. Youths of modern times spend lots of time scrolling through short-form videos on platforms such as Tik Tok and Youtube Shorts. During this time, they're not productive at all, effectively wasting up to hours of their day not accomplishing anything due to the content being so addictive.

The app will still have the same short-form content, but it will only be educational and also have a mix of videos with some multiple-choice questions. These questions that show up from time to time will encourage the user to remember facts about the content they just watched, as they will be about the topics of those videos. If users can get questions right a lot for a particular topic, they can 'level' up for that topic, get more difficult videos and related questions, and be able to upgrade their account.

Justification

Because this app still only has short-form content, it should still remain addictive, but using it won't be a complete waste of time as its users will be encouraged to remember facts to get the occasional multiple-choice question correct. They'll be motivated to do so as if they can get questions correct, they'll progress to more difficult videos from that same topic, but also get potential prizes for getting to higher topic difficulties such as being able to customise their profile. Thus, users will be able to walk away from using this app after long periods of time having memorised some facts and useful information, and not having completely wasted their time.

Functionality

This app will mostly be a platform for short-form content like the above two mentioned, so its main function will be to have a constant stream of short videos that a user will be able to scroll through, much in the same way that can be done on Tik Tok and Youtube Shorts. As mentioned previously, it will only have educational videos. Each video will be part of a topic, such as geography, Python coding, history of the industrial revolution, etc.

After every 5 videos, with each video coming from any topic, a single multiple choice question pops up. Users only get one attempt at this question, and it will be about a topic from one of the past 5 videos. If users manage to get enough right answers for a given topic, for instance get the last 4 out of the 5 questions correct for a given topic, then their 'level' for that topic will increase. As an example, if in a day they go through 5 multiple-choice questions about flags of different countries, and manage to correctly identify 4 flags correctly, they will go from 'Level 1' to 'Level 2' on geography. Now the videos and related questions will be more difficult, this time asking about capital cities of various countries.

Target audience

The target will be kids and younger adults who have access to technology, many of whom often find themselves spending up to hours scrolling through short-form content while not being productive at all. As this is the group that tends to stay hooked on short form content for a long time, it only seems natural that they should also stay hooked to this particular app as well.

Tech stack
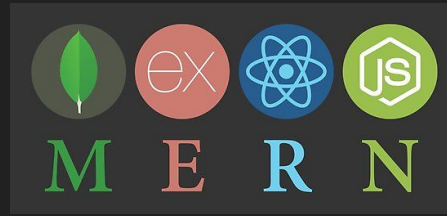
This software will feature the MERN stack, and also utilise links to Youtube shorts (for testing purposes).

MongoDB will be used to store both data on users, their points/statistics, data on all the videos that will show up in the app, and also questions for each video topic. The videos for this demonstration will be educational videos from Youtube shorts from a variety of Youtube channels that provide free and public educational videos.

Express will be used to obtain data from the database to be given to the front-end of the app. Likewise, it will also be used to update data in the MongoDB database. Mongoose will also be important for providing schemas for the database.

React will be used to display the videos to the user, and also the multiple choice questions based on the data collected and calculations made, as will as the sign-in/sign-up pages. React will then be able to pass information from the user when they answer the multiple choice questions.

Node will be essential for doing calculations regarding each user, and also randomly picking out videos as well as questions for the videos. It will be used to determine what videos from what topics should be displayed, based on the questions the user was able to get correct.

Dataflow diagrams

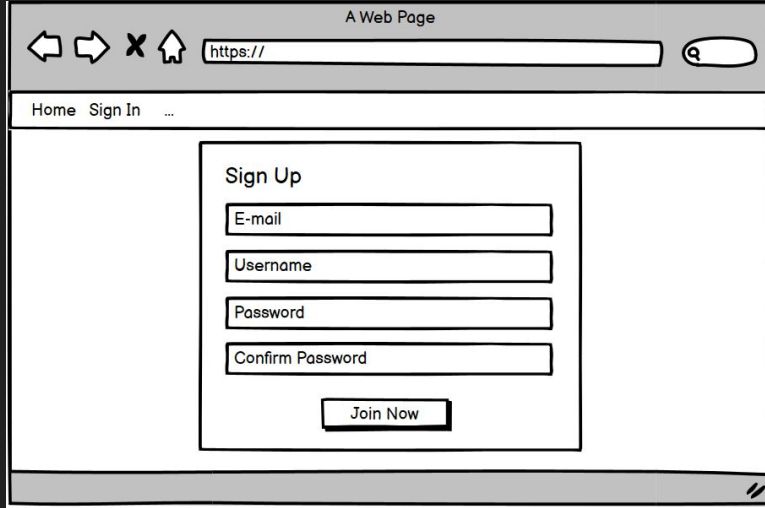Searching & Serving Videos and Questions
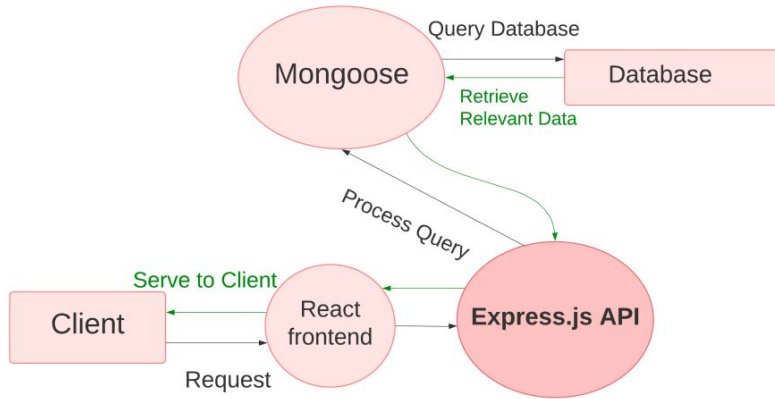
User Authentication
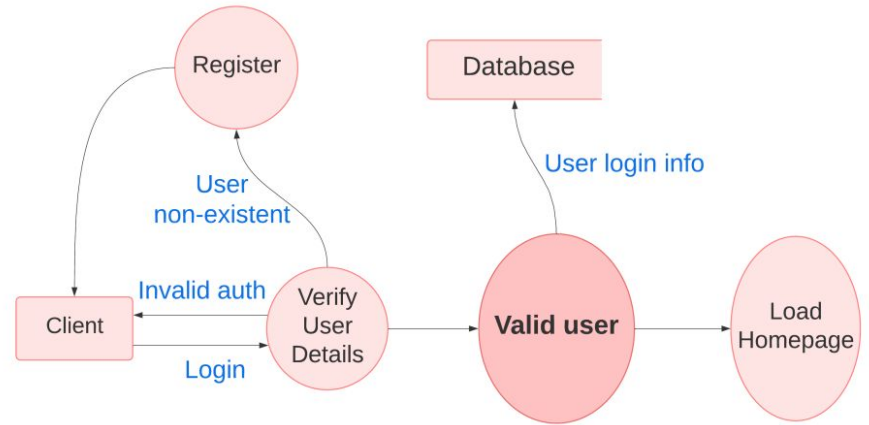
Application architecture diagram
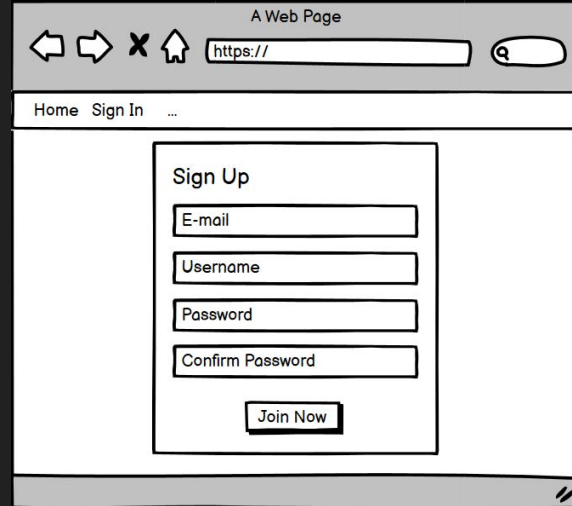
Sign-up page wireframes

Desktop

Tablet

Mobile

Sign-in page wireframes

Desktop

Tablet

Mobile

Main video page wireframes
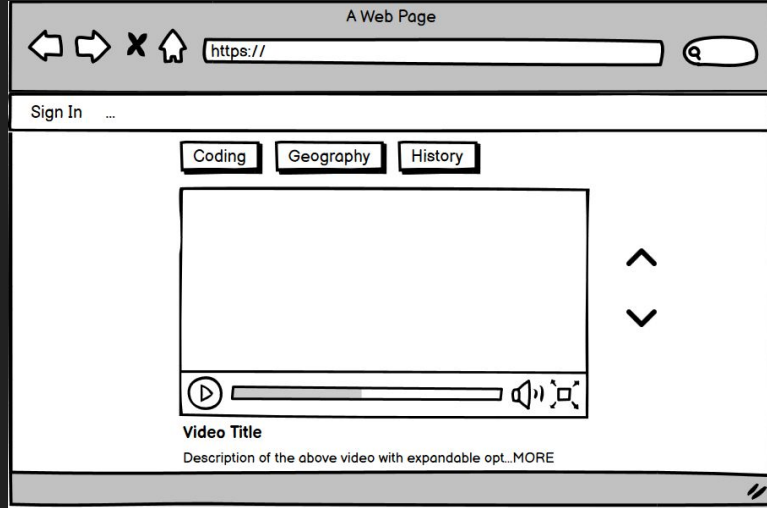
Desktop
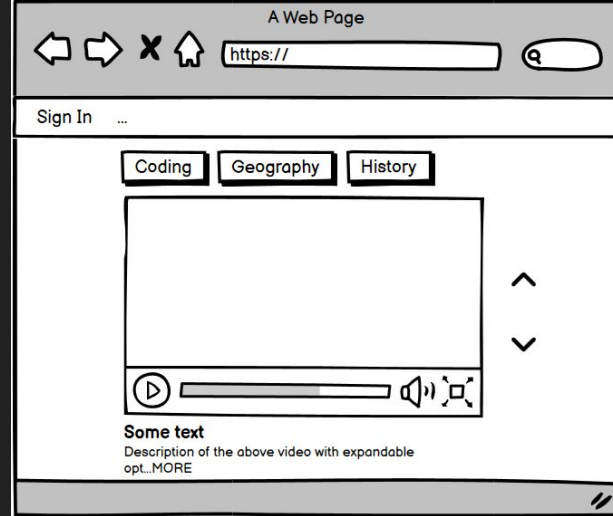
Tablet

Mobile

Question page wireframes
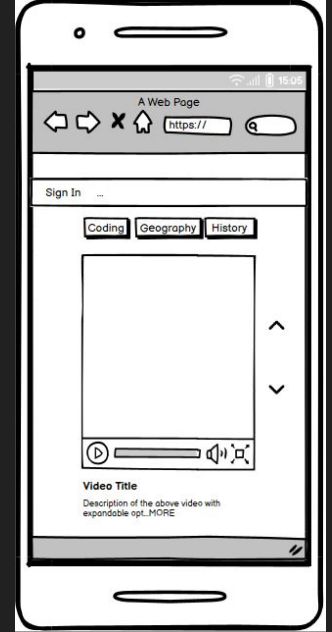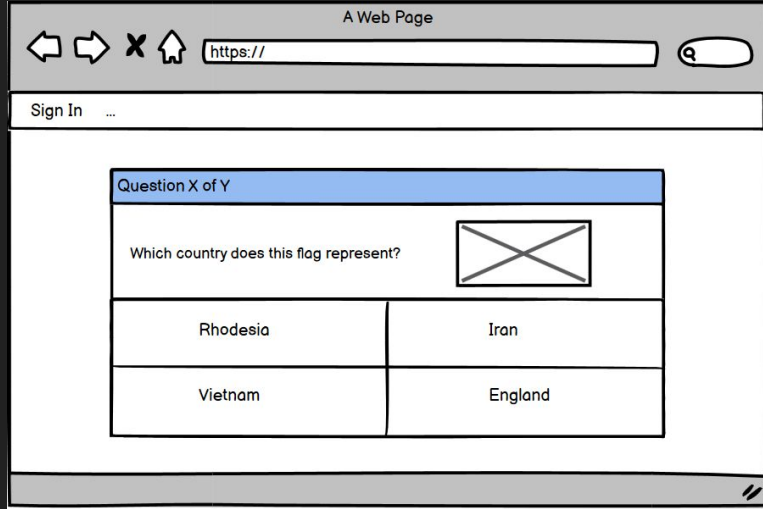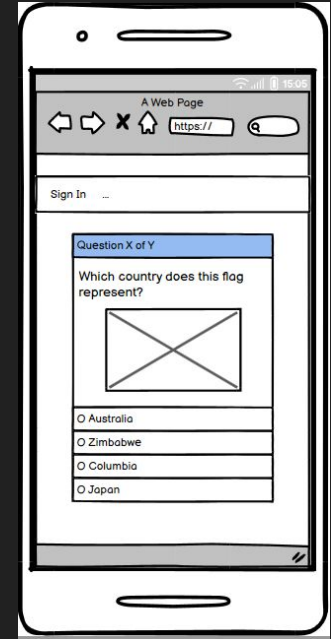

Desktop
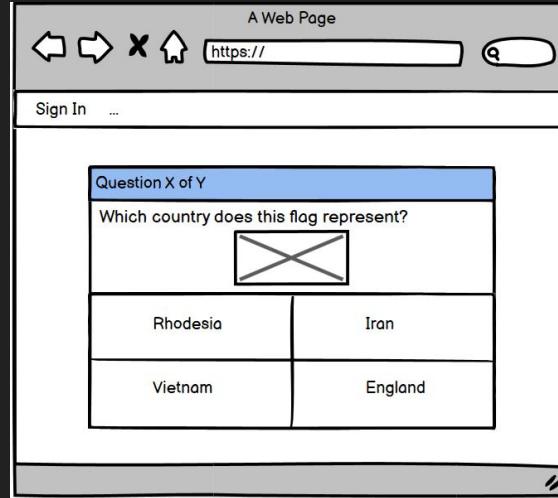
Tablet

Mobile

User stories

User 1		
Title	**Priority**	**Time**
Parent	High	2 days

As a parent who's concerned about what their kids are online, I don't want to stop them from using technology completely, but I'm worried if the videos they're watching are appropriate for children. I also know they're curious and love to learn new things. I'm hoping they can use an app that has only educational videos, and that the app is fun enough to use so that they have motivation to use this educational app, rather than other platforms with disturbing content.

| User 2		
Title	**Priority**	**Time**
High School student	High	3 days

As a high school student, I want to get some benefit from my screen time. I find myself spending hours scrolling through short videos, but feeling like I've wasted the afternoon. Because I'm a student though, I want to keep learning new things, and do it during the time when I'm not being productive. So, I want to have a feature where I can be tested on the knowledge of the content I just watched, and be tested frequently so I remember it.

User 3		
Title	**Priority**	**Time**
Coder student	High	3 days

As an aspiring coder, I want to feel motivated to become a better coder. However, studying coding is really hard, and I feel like I'm making no progress in my course. So, I want to have an app that has easy and entertaining coding content to watch, but gets progressively harder as I engage with it over time, so I can feel like I'm making progress with my coding knowledge.

Trello screenshot 1
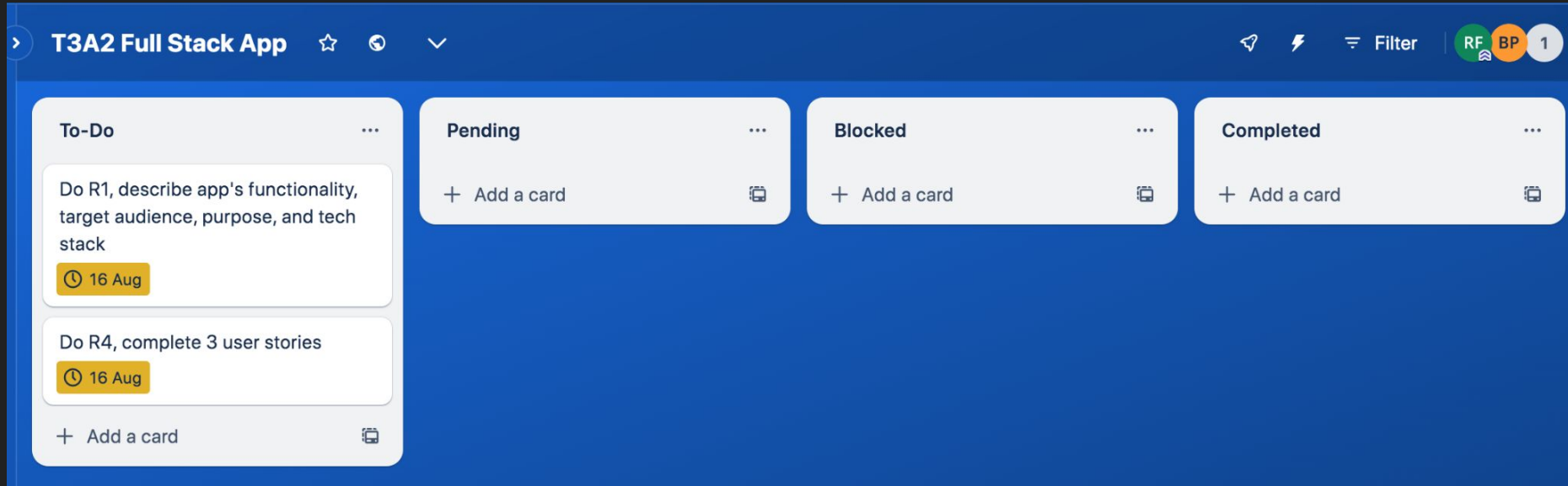
Trello screenshot 2
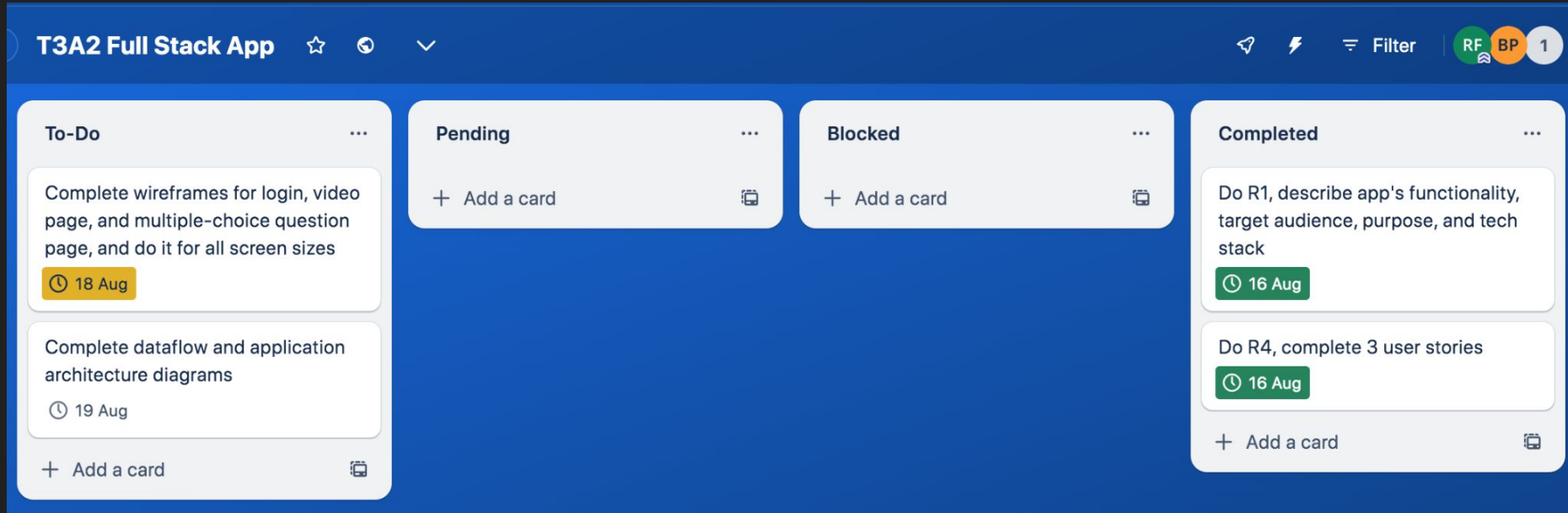
Trello screenshot 3

T3A2 Full Stack App   ☆ 🌐 ⌄   Filter   RF BP 1

To-Do ···

Complete dataflow and application architecture diagrams

🕐 19 Aug

Completely finish documentation, set up github, be ready to start coding

🕐 20 Aug

+ Add a card

Pending ···

+ Add a card

Blocked ···

+ Add a card

Completed ···

Do R1, describe app's functionality, target audience, purpose, and tech stack

🕐 16 Aug

Do R4, complete 3 user stories

🕐 16 Aug

Complete wireframes for login, video page, and multiple-choice question page, and do it for all screen sizes

🕐 18 Aug

+ Add a card

Trello screenshot 4

To-Do   ···

+ Add a card

Pending   ···

Completely finish documentation, set up github, be ready to start coding

🕐 20 Aug

+ Add a card

Blocked   ···

+ Add a card

Completed   ···

Do R1, describe app's functionality, target audience, purpose, and tech stack

🕐 16 Aug

Do R4, complete 3 user stories

🕐 16 Aug

Complete wireframes for login, video page, and multiple-choice question page, and do it for all screen sizes

🕐 18 Aug

Complete dataflow and application architecture diagrams

🕐 19 Aug

+ Add a card

Trello screenshot 5