Real or No Real

CFGdegree Full Stack Group 1
HW2 - part 1

Part 1

Project Concept: Real or No Real.

What Are You Building?

The concept behind this application derives from an importance for young people to develop digital literacy skills in the face of transcending technology. According to Ofcom's 2022 Online Nation report, fake or deceptive images and videos including deepfakes are in the top 20 online potential harms encountered by UK(Admin, 2022).

Deep Fakes can lead to manipulation, bullying, sexual harassment, extortion and exploitation. Thus, it is important that children grow up with a means to protect themselves, analyse, question and challenge the things they see on the internet.

We aim to develop an interactive educational platform focusing on deep fake awareness and the associated risks. The platform will consist of an engaging web application that educates secondary school students about deep fakes, their implications, and how to identify them.

The gamification of learning has been highlighted as increasing performance levels, engagement, motivation and improving memory and recall in students across the world (Verma, 2023). As a result, we have chosen to include the pedagogy of play in our application. It will consist of an interactive quiz and a game where users have to select the deep fake out of a number of images. By using this method we hope our application will induce a state of flow within our target market resulting in increased memory retention of the subject matter.

Target Audience

The target audience for this application is secondary school pupils aged between 12 to 16 years. The goal is to educate them about deep fakes, improve their critical thinking skills, and raise awareness about the potential dangers of manipulated media.

Work Methodology and Tools

Team Composition

- 2 x Frontend Developers (responsible for React-based UI/UX design and development) - *Elaine and Gemma*
- 2 x Backend Developers (tasked with Node.js, Express, and DB for server-side logic, API integration, and database management) - *Cat and Thaires*
- 1 x Project manager (Assigned with taking minutes in meetings, creating deadlines in and assigning tasks in Asana) - *Gemma*
- Application design and development decisions will be made collectively within our weekly meetings - *all of us*

Task Allocation

Whole Team

- Research and create the interactive educational content, complete the Activity Log, collectively make decisions, raise Issues, and come up with solutions.

Frontend Team

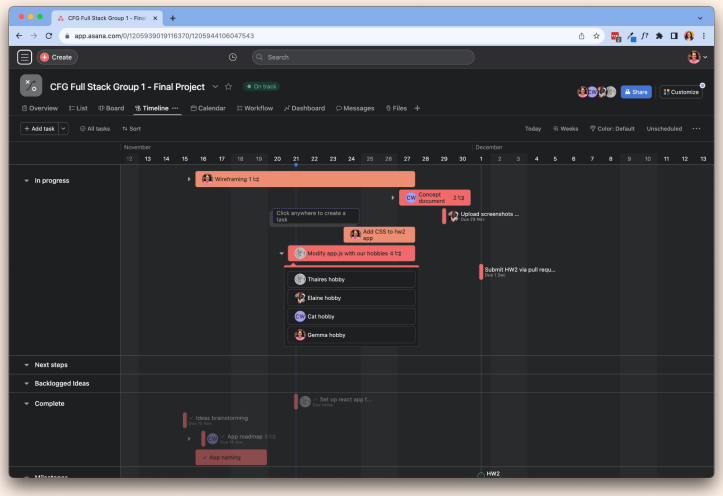
- Design and develop the user interface, quiz modules.
- Ensure a seamless and intuitive user experience.

Backend Team

- Build the server-side logic, research and potentially handle API integrations for deep fake analysis services.

Workflow:

- Concurrent development with regular sync-ups and code reviews between frontend and backend teams.
- Agile methodology with sprints and regular stand-up meetings to track progress and address any bottlenecks.



Development Tools

Frontend

React.js for UI development, HTML/CSS for styling, possibly additional libraries for interactive elements.

Backend

Node.js with Express for server-side scripting.

Version Control

Git and GitHub for code versioning and collaboration.

Communication

Slack (verbal), Miro(visual)
Workload Organization
Asana

Main Features of the Project

Due to our small team and limited time frame, we will be using MoSCow Method in order to prioritise the main features of our application.

User Authentication: Implement secure login/register functionality for user accounts. *(C)*

Interactive Quiz: Develop an engaging quiz module to educate users about deep fakes and their implications. *(M)*

Real or No Real Game: Users will be challenged to select the deep fake out of a number of images. *(M)*

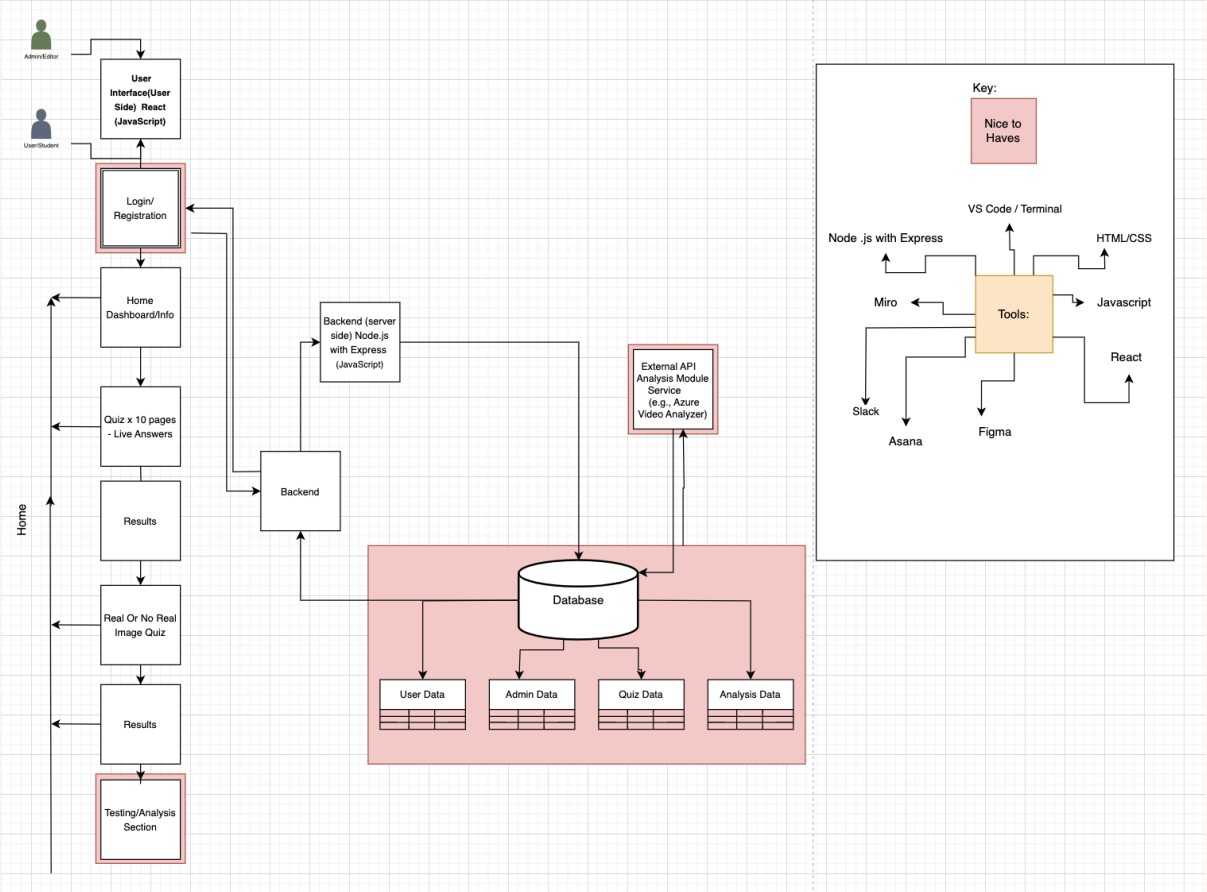
Deep Fake Analysis Integration: Basic integration with external APIs (e.g., Microsoft Azure's Video Analyzer) for initial analysis of media files. *(W)*

User Dashboard: A simple dashboard to track quiz progress and completed modules. *(C)*

Responsive Design: Ensure the application is responsive and accessible across different devices and screen sizes. *(M)*

This project aims to create an educational platform providing secondary school students with valuable insights into the world of deep fakes, fostering critical thinking skills, and enhancing their digital media literacy in a changing digital landscape.

App Roadmap



Frontend (UI/UX)

- **Home screen:** The first page you see with a logo and buttons for navigation to each part of the app. *(M)*
- **Quiz Section:** Interactive module for educating users about deep fakes.
- **Real or No Real Section:** Interactive game for users to guess if an image is real or a deep fake. *(M)*
- **Login/Register Pages:** User authentication screens for account creation and login. Registration and the ability to login to a personal account as either a student or admin. These would have different privileges which would allow the admin to upload more content and see the answers in a way the student wouldn't. *(C)*
- **Dashboard:** Main interface displaying user progress, quiz, and analysis sections - or info page about why deep fakes are relevant, why they might be a problem and identification techniques. *(C)*
- **Additional quiz questions:** In future it would be good to add a big selection of random images / questions. So each time they load the app they'd get a random set of questions and aren't repeating it. *(C)*
- **Testing/Analysis Section:** Area for users to upload media for deep fake analysis. *(W)*

- **Audio effects:** Adding audio to the application would make it more engaging for our target market. *(W)*

Backend (Server-side)

- **Server Setup:** Utilising Node.js with Express for server-side scripting. *(M)*
- **API Integration:** Incorporate selected APIs (e.g., Microsoft Azure's Video Analyzer)
    - An external API that would compare, a expose and analyse deep fake images/video content of the students selection from the internet. *(W)*
    - API specific for information on DeepFakes to keep the quiz current, full of informative and interesting content. *(C)*
- **Database (MongoDB):** Store user data, quiz progress, and analysis results

Database Structure (MongoDB)

- **Users Collection:** Store user authentication details (username, password, etc.). *(C)*
- **Quiz Progress Collection:** Track user progress in the educational quiz. *(C)*
- **Analysis Results Collection:** Store data from deep fake analysis (media file details, analysis results, timestamps). *(W)*

Frontend-Backend Communication

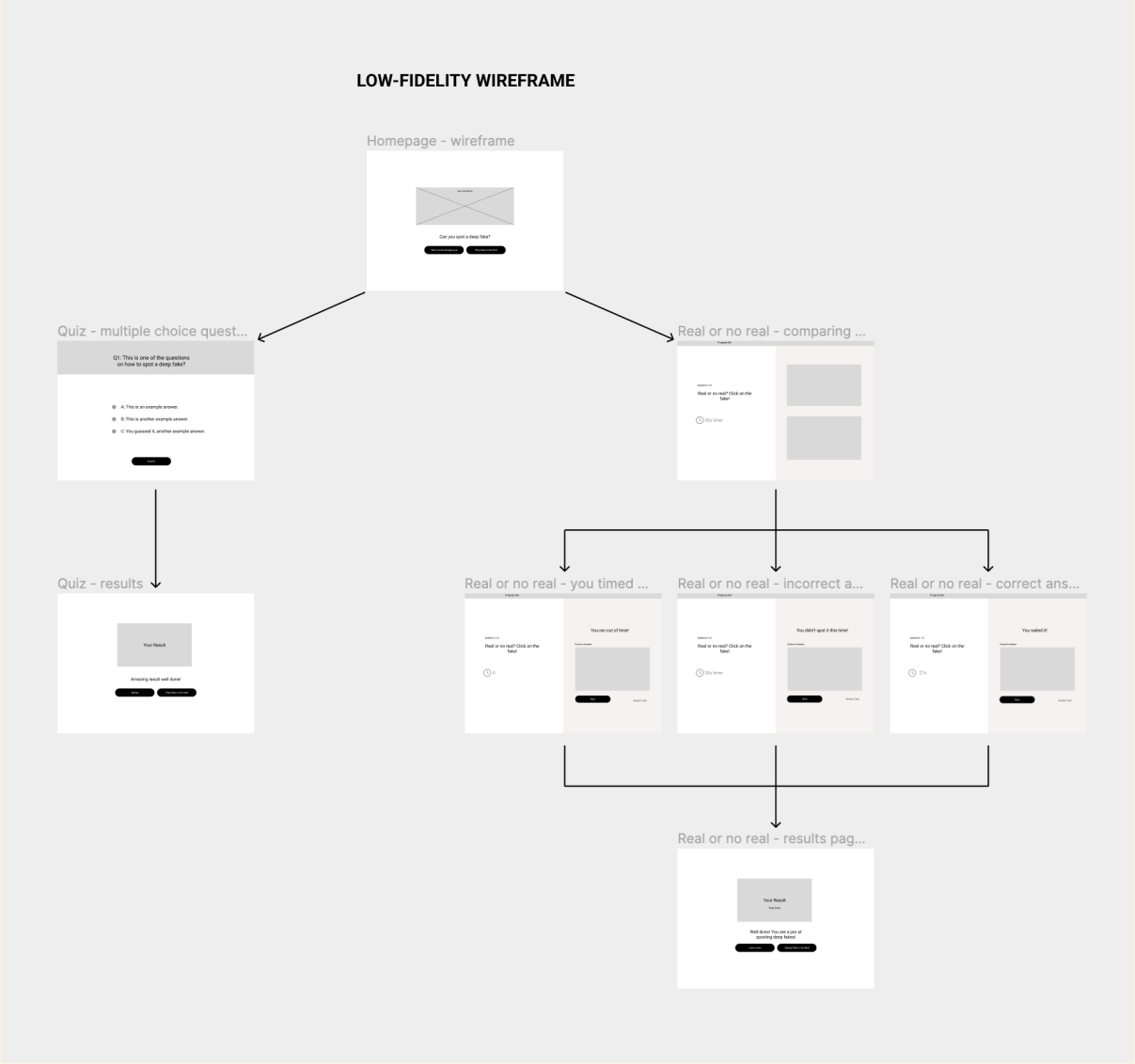
- **Real-time Interaction:** Establish communication between frontend and backend for real-time feedback and result display. *(M)*
- **RESTful API Endpoints:** Create endpoints for user authentication, quiz progress, and analysis requests. *(C)*

Part 2

Wireframing

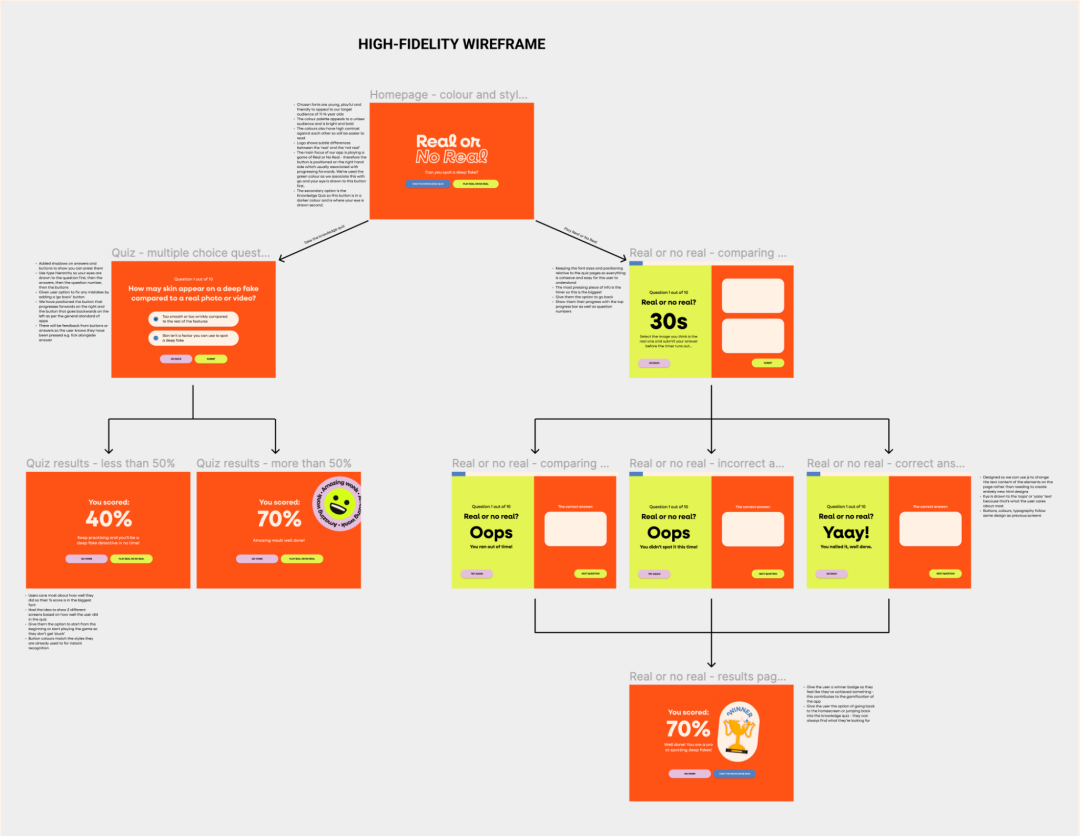
[OPEN THE WIREFRAME IN FIGMA]

Low-fidelity wireframe

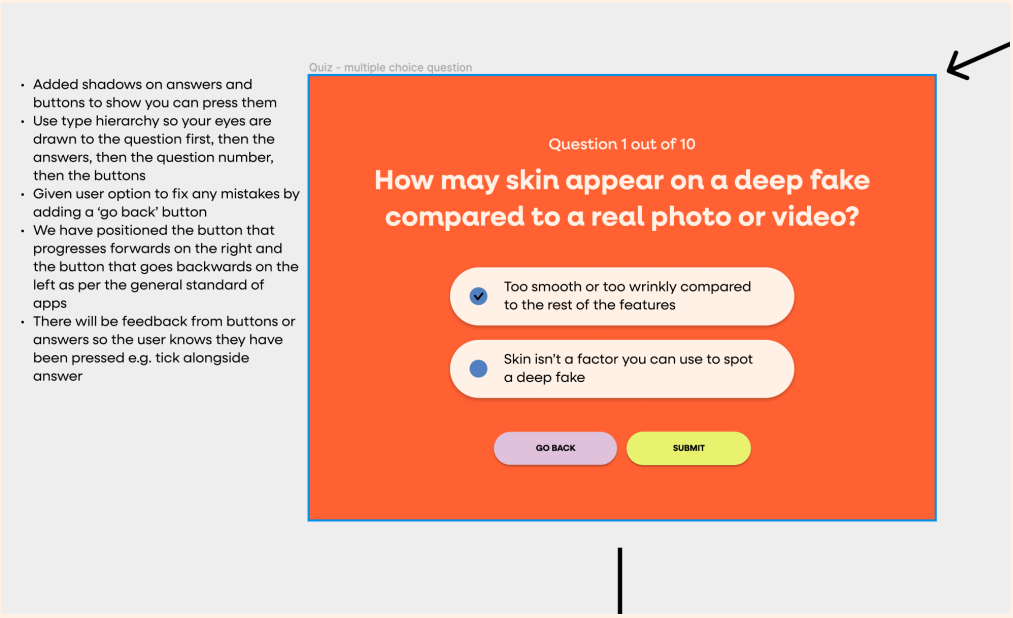


We started with a low fidelity wireframe to decide which elements each page would need and where to position them.

High-fidelity wireframe



We began to add colour and branding to our wireframe and make decisions about what would be the easiest for our users to use. We thought about the Norman Door approach when arranging buttons and used type hierarchy to draw your eyes to the certain parts of the page in a specific order.



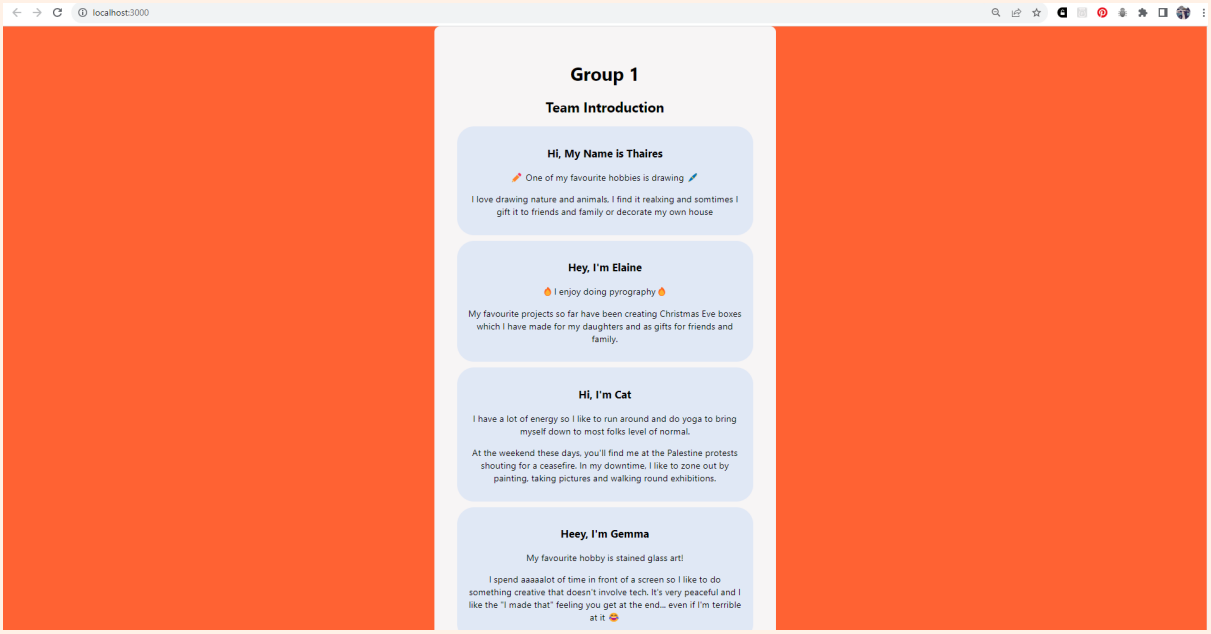
Parts 3 and 4

React App and GitHub

[ACCESS GITHUB REPO]

We initiated a new GitHub repository named 'CFG-full-stack-group-1-final-project' and implemented a branching strategy to facilitate collaborative development. The ‘homework-submission’ branch was used as the main development branch for this initial phase of the project. Team members created individual branches to work on their assigned features independently. Team members then conducted pull requests before merging their branches.

We achieved a collaborative and streamlined development process using GitHub and successfully integrated individual contributions into the 'main' branch. The project can be seen running on local host in this screenshot:



References

Admin (2022) A beginners guide to deepfakes, Safer Schools. Available at: **https://oursaferschools.co.uk/2022/07/20/a-beginners-guide-to-deepfakes/ (Accessed: 20 November 2023**).

Verma, N. (2023) *How effective is gamification in Education? 10 case studies and examples*, *Axon Park*. Available at: **https://axonpark.com/how-effective-is-gamification-in-education-10-case-studies-and-examples/#:~:text=It%20was%20found%20that%20challenge,the%20students%20increased%20by%2034.75%25. (Accessed: 20 November 2023**).