Assessment Purpose

Congratulations on passing phase one of the MSA program!

To pass phase two, you must complete either the software stream or data science stream. This assessment is for the software stream. This is an **individual assessment.** Usage of AI tools such as Github Copilot or ChatGPT is allowed. You will be ranked against your pairs.

Building on our foundational knowledge of React and REST APIs using the .NET framework from Phase One, this assessment will challenge you to develop a full stack application with advanced features. This project aims to demonstrate your proficiency in these technologies, as well as your ability to independently research and integrate new technologies.

Task

In this assessment you are to develop a full stack web application. The application can be on any topic of your choice, allowing you to showcase your creativity and technical skills.

All the basic requirements are required. Additionally you are to achieve at minimum three advanced requirements.

Basic Requirements

Your application should contain all these basic requirements. These requirements are not flexible.

Frontend:

- React Project using Typescript
- Uses a styling library such as MUI, Mantine or similar
- Visually appealing and responsive UI. (Web app displays nicely on both computer and mobile). If your web app is designed only for desktop, justify why your web app is not responsive in your readme.
- React Router or some other routing library
- Git usage

Backend:

- Built using C# using .NET6 or higher
- Usage of EFCore
- Persists data using a database NOSQL or SQL database.
- Have at minimum CRUD operations. (Create, Read, Update, Delete)
- Git usage.

Advanced Requirements

- Integrate all components with Storybook
- Unit testing components
- Usage of state management for example Redux
- Allow switching different themes. For example dark/light mode.
- Containerize project using docker.
- Usage of web sockets
- End to end testing using Cypress
- Use of AI technologies in your project
- Deployed using Azure

Unsure how to get started?

There is an basic getting started exemplar documenting how you could get started. This is located in the Phase 2 Repo.

Marking Criteria

A formal marking criteria is not released to the public. The MSA marking team will have a set marking criteria we will follow. Each criteria we will give a score of 0 to 5.

As a general idea here are the things the marking criteria will contain

- Does your application look visually appealing?
- How is your code quality? Is it well structured and easily understood by other developers?
- Git usage. Is there evidence you have commits and have been working on your project? It does not look great if we see one commit with the entire assessment at the end.
- Presentation quality. Were the points discussed in a clear manner? Were you speaking clearly? Is it in a clear structure?

Submission Format

- One GitHub Repository containing your frontend and backend.
- A Readme file containing the following information
    - Brief introduction to your project
    - One thing about your project you are very proud of
    - What basic & advanced features you've implemented
- A pre-recorded 8 minute video containing the following
    - A demo of your apps and features
    - Showcase of the basic/advanced features

To submit use the MSA 2024 Phase 2 submission form located in the Phase 2 repo.

FAQ:

Q) Can I use ChatGPT, Github Copilot or other AI Tools?

Yes :)

Q) For the backend can I use another language/framework such as Java and Spring Boot?

No :(

Q) For the frontend, do I really have to use TypeScript?

You can use Javascript, However there will be a penalty.

Q) I cant manage to complete the minimum advanced requirements. Am I guaranteed to fail?

We will have a marking criteria, where every student is marked with. So it is still possible to pass.

Q) Do I own the project I made?

Of course! Feel free to put this project as part of your CV or show it off!