Software Design and Architecture
Homework 2

In the second homework, you will need to develop the **architectural design of your application, create a GUI mock-up and make a technical prototype of your application**. To complete this assignment, you should review the lectures on these topics.

All necessary files should be organized in a folder named "Homework 2" within your GitHub repository, which should contain subfolders for each part of the assignment.

1 Architectural designs

For this part, you need to show the **conceptual, execution and implementation architecture** of your application. These views should reflect the final application. Keep in mind that the final application should be a **hybrid architecture that has sub-architectural components** such as pipe, filter, layered web architecture, distributed architecture with microservices and containerization.

Refer to the course introduction slides, specifically the slide detailing the homework assignments. These slides provide important information on how you should structure and develop the application in future phases, as well as the required architectural elements. Keep in mind that **you shouldn't just describe the architectural styles and patterns you will use, but also describe how you will apply them to your application**.

The files you create for the architectural design (text and pictures) should be uploaded to GitHub in a folder named "architecture", which will be a subfolder of the folder Homework 2.

2 GUI mockup

For this part, you should **show the mockups of the main screens of your application**. Sketch the graphical interface of your application and show the layout of the most important screens. Some of the tools you can use for this purpose are listed below:

- Figma (`https://www.figma.com/`) - Free plan with student email

- Marvel - (`https://marvelapp.com/` - 7-day free trial + free plan available

- UXPin - (`https://www.uxpin.com/` - 14-day free trial + free plan available

- Justinmind (`https://www.justinmind.com/`) - Free plan available

- InDesign (`https://www.adobe.com/products/indesign/`) - 7 day free trial

- Canva (`https://www.canva.com/`) - free and paid versions

- Scribus (`https://www.scribus.net/`) - free application

- Lucidpress (`https://www.lucidpress.com/`) - free and paid versions

- Vivadesigner (`https://www.viva.de/en/`) - free and paid versions

- Gravit (`https://www.designer.io/en/`) - free application

- Balsamiq Mockups (`https://balsamiq.com/`) - 30 day free trial

- Proto.io (`https://proto.io/`) - 15 day free trial

You should upload the mockup screens you create to GitHub in a folder named "mockups", which should be a subfolder of the folder Homework 2.

3 Technical prototype

Create the **technical prototype of your application**. Here, it's enough for your functions to be connected, that is, it **should be possible to move from one screen to another**. Build a technical prototype using the same technologies planned for the final application. The most important thing for this part is to **verify the concept of your application** - to determine if the chosen technologies (programming language, software framework, database) are appropriate to fulfill the previously defined requirements and whether the team has the skills needed to work with them.

For this part, you should make a short screen recording to show your prototype.

The files related to the technical prototype (code and video) should be uploaded to GitHub in the folder named "tech prototype", which should be a subfolder of the folder Homework 2.

The deadline for submitting the second homework is **December 1, 2024**. Please note that this deadline is **final and will not be extended under any circumstances**.