



### Topic

eLearning is a growing field in computer science and game development and can be exploited for positive experiences in ongoing teaching topics.

Every year, many students are signing up for courses at the University of Zurich which could benefit from introducing some advanced learning methods, to handle the corresponding amount of knowledge transfer.

With the current state of the art in graphical user interface development and mobile graphics, it is possible to develop simple eLearning applications in a relatively short time frame. The hard task is to bring all the cross platform requirements together, considering the corresponding challenges

and targeting multiple systems using one common software architecture.

### Assignment

In this student project, you are going to develop an eLearning application for the course Computer Graphics, to support future students to more easily and intuitively understand also more complex topics of the curriculum.

The project will use already existing libraries and program code that already allow the illustration of very basic computer graphical concepts, such as transformation.

The project includes two stages. The first stage will be understanding the technical and nontechnical parts of an eLearning

platform and to design a suitable cross-platform system architecture.

The second stage will be implementing the application by extending the provided code and libraries in order to fully support both major mobile operating systems, Android and iOS.

Optionally, you will use shaders to illustrate more advanced concepts in computer graphics, such lighting using Gouraud and Phong Shading.

### Requirements

Interest in software architecture and cross-platform application development in multiple programming languages.

### Work Load

- 30% concepts & theory
- 50% implementation
- 20% testing

### Student Project Type

This project is targeting students who have to do a software project. Goals are adjusted depending on experience and the project type.

### Supervision

Prof. Dr. Renato Pajarola

### Contact

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