

Master Team Project

Development of a Web Based E-Learning Platform



Agenda

- **Goal** of the project
- **Benefits** of E-Learning
- **Limitations of Ilias**
- Building on a rich foundation of **previous works**
- **Learning opportunities** for project participants
- Preview of an **early prototype**

Goal of the project:

Build an E-Learning platform

- Achieve a modern and **seamless user experience** for students and teachers
- Integrate **existing tasks** into the platform
- Provide a rich **variety of task types** to students
- Enable **discoverability** of related topics through search and recommendations

The benefits of E-Learning & why it will enrich our learning portfolio

- **Interactive:** E-learning often includes interactive elements such as quizzes, simulations, and multimedia, which can help **engage learners** and **improve retention**
- **Convenience:** E-learning allows individuals to learn **at their own pace** and on their own schedule, **regardless of their location**
- **Accessibility:** E-learning makes **education more accessible** to individuals who may have previously been unable to attend traditional classes due to physical or health barriers
- **Variety:** E-learning platforms offer a wide range of courses and subjects, allowing individuals to **explore new areas** of interest
- **Self-paced:** E-learning provides **flexible learning** experience, allowing the learner to proceed at their own pace
- **Personalized:** E-learning can adapt to an **individual's learning style** and preferences

The limitations of Ilias & why a separate platform is needed

- **Low visibility:** Content in the Ilias platform isn't always easy to find, requires several steps to navigate to and isn't easily searchable. This **lowers discoverability** and inhibits the natural sense of exploration. Since most of the content is intended to be visible to all users students might explore ahead and find new topics on interest to them.
- **Speed:** The Ilias platform is **often perceived as slow**. This limits user retention and can also lead to a **decrease in engagement** with the information being provided. In today's fast-paced world users expect a quick and seamless access to information. A slow platform will be perceived as outdated and unreliable.
- **Task types:** Ilias doesn't support all required task types, such as **coding tasks**. Especially to learn coding, exercise is key to acquire the necessary skills to succeed.

Building on a foundation of previous works & why this project will succeed




- This project **builds on top of** multiple previous **bachelor and master thesis's** about E-learning
 - Irene Klaus „Entwicklung einer modularen, Web-basierten Lernplattform zur Unterstützung der Lehre in der Informatik“, Universität Mannheim 2020
 - Tobias Bode „Entwicklung eines Lern Moduls zum Thema „Verkettete Listen“ für die Web-basierte E-Learning Plattform am Lehrstuhl für Softwaretechnik an der Universität Mannheim“, Universität Mannheim 2020
 - Marc Popescu-Pfeiffer „Entwicklung einer Web IDE zur Bearbeitung von Programmierübungen für die Online E-Learning Plattform am Lehrstuhl für Softwaretechnik der Universität Mannheim“, Universität Mannheim 2022
- An **early prototype** has already been built




Learning opportunities for participants & why this project will benefit them

- Sought after **skills**
 - JavaScript & TypeScript
 - ReactJS & Material UI
- Forward-thinking **architecture**
 - Docker & Serverless
 - PostgreSQL
- Current-day **platform & tools**
 - GitHub
 - VS Code

Preview of an early prototype

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Test Task
Multiple Choice
Select all options with even n...
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Test Task 2
Cloze
Complete the following tasks...
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Week 2

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E-Learning



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