Project Description:

The goal of your project is to build a prototype of a room reservation display. A competing product can be found here (https://www.yealink.com/en/product-detail/roompanel).

Your system shall be capable of reading the reservations of a room in the DHBWs room management system RaPla through one of below sources:

- iCAL: https://rapla-ravensburg.dhbw.de/rapla?page=ical&user=Leitner-Fischer&file=Alle_Raume
- HTML: https://rapla-ravensburg.dhbw.de/rapla?page=calendar&user=Leitner-Fischer&file=Alle_Raume

Similarly to the product of the competition it shall have a screen that shows whether the room is available, and when the next reservation is starting.

Hardware-Requirements:

Your product shall have a total BOM (bill of material) cost of below 150 Euros and shall have the following hardware features:
- 7 inch color display
- Possibility to be powered with Power over Ethernet
- Possibility to be battery powered
- Possibility to be powered through a standard 203V Socket
- The display shall be off and the system in a power save mode when no one is present, consider here that GDPR needs to be followed for presence detection especially if you plan to use a camera.
- WiFi and Ethernet connectivity

In addition to the BOM cost of the individual device it is possible to use a server for data storage and other functionalities.

Software-Requirements

- It shall be possible to remotely also display other information on the screen (e.g. lecture is canceled, exam in progress, or also HTML websites or Images with other information)
- Ideally the system shall also indicate which (nearby rooms) are available if the room is currently in use. This should also consider room classes (lecture room, PC room)
- It shall also be possible to configure the display to show a group of rooms, e.g. at the door of E204 I would like to display E203, E204, E205.

What you need to do in the project:
- Create a project plan and assign roles to the team members
- Write a requirements specification for the project
- Define a Hardware concept and inform Prof. Leitner-Fischer what Hardware needs to be ordered
- Create a software concept and implement it
- Build a prototype
- Bonus: Create a business plan, how would you sell the product and for what price? How would you solve manufacturing?