

# Fachpraktikum / Practical Course

## Logic App Development

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You will build your own logic quiz application using Flutter/Dart and Go (aka Golang). Students will work on their own. The course consists of two parts: The first part is meant as an introduction into formal logic, Flutter/Dart and Go. There will be several small exercises and the successful completion of these tasks is a requirement for the second part. The main part of the course is the specification, implementation and documentation of a mobile application; this part represents 100% of the total assessment of the course.

Users of the app should answer multiple choice questions and track their progress. The questions should be about equivalent logical formulae. For this purpose, participants of the course will need to implement three components (in brackets you find the weight regarding the final mark):

- The first component is the user interface which needs to be implemented as a mobile application in Flutter/Dart (50%).
- The second component is the server side for providing the quiz questions and for user management. This component should be written in Go (30%).
- The third component concerns the automatic generation of quiz questions and should be written in either Dart or Go (20%).

You pass the course if you achieve at least 40% of the total marks and if the first component is fully functional (i.e., rather than implementing the third component, you could write a minimum of 10 quiz questions yourself and you do not have to implement the server side; of course, you then do not get any marks for the respective components). For the purpose of this course, you do not need to address encryption and security issues regarding the server side.

The assessment of the coursework is based on the following parts:

- A specification of the app in pdf format (no more than three pages). This specification should briefly describe all three components. For the first component, you need to create mock screens for all user-facing screens. Hand-drawn sketches are OK. The specification needs to be submitted at the beginning of the second part of the course.
- A single git repository for the implementation of all three components (for marking purposes, you need to provide full access to this repository).
- A report in pdf format documenting the student's work and the actions taken to ensure a high quality of the application (e.g., unit testing, user research, etc.). Moreover, the report also needs to contain a short user guide for each of the components.
- A short presentation of the coursework (either in English or German). We will agree on a date at the second half of the course. Participants are invited to attend the presentations of their peers.

While we will refresh basic facts on formal logic and Boolean algebra, it is recommended that participants have some prior knowledge (e.g., from attending the course *Theoretische Informatik II*). Prior experience in Flutter/Dart and Go is not necessary.