Software Engineering

"'Praktikumsleistung"'

Complete **Task 1** and **Task 2** to complete the project work. ("Praktikumsleistung")

Note the following rules:

- It is required to attend Project Meetings (online) and the final Presentation which is held **in presence** in Deggendorf.
- Groups of up to 12 students must make a joint submission.
  - 2-3 people for backend + database development
  - 2-3 people for frontend development
  - 2-3 people for mobile app development
  - 2-3 people for project management, end2end testing and devops tasks
- The minimum group size is 6 people:
  - 2-3 people for backend + database development
  - 2-3 people for frontend development
  - other tasks like project management, testing and devops are shared among team members
- The submission must include:
  - The names and matriculation numbers of all group members.
  - All source code, configuration files, documentation.
  - The presentation document (as PDF).
- Submit the solution in the form of a ZIP archive via iLearn.
- Please note: the solution must build and run without errors on my machine

Task 1 - Management System for Cooking Recipes

Implement a software to manage cooking recipes

The following **functional** requirements shall apply:

- The system shall provide a multi-user mode
- The system shall cooking recipes
- The system shall support different categories for recipes (breakfast, lunch, dinner, snack, finger food, cake, etc.)

- The system shall categorize recipes of different types (meat, meat-less, vegetarian, vegan, soup, salad, meal accompaniment, etc.)
- The system shall be able to deal with different types of quantities (imperial, metric, etc.)
- The ingredients for each recipe are specified for a certain amount of portions
- The system shall recalculate the ingredients for a user-specified amount of portions
- A recipe consists of a number of ingredients and a textual instruction of how to prepare it
- Store optional images for recipe
- Store required preparation time for each recipe
- Add/Edit/Delete recipes
- List all recipes
- Search for recipes according to different criteria, e.g. (combination of filters shall be possible):
  - Category
  - Type
  - Preparation time
- Export recipe to PDF
- Select one or more recipes and export only the ingredients to a text file
- Mechanism to backup/restore the recipes

The following **non-functional** requirements shall apply:

- The source code shall be written using the following frameworks/technologies:
  - backend: Quarkus/Spring Boot
  - database: choose a light-weight/easy to deploy (docker) database
  - frontend: React or similar technology
  - mobile app: Android; please note this only applies for groups with more than 8 people!
- The source code shall be managed in `mygit`[1]. (Thomas Buchmann, user: tbuchmann must be included in each repository!)
- The application shall be containerized using Docker images.
- The Docker images shall be built with Gitlab CI and pushed to the registry.
- The application shall be shipped with a Docker *compose* specification.
- Test coverage (integration and unit tests) shall be above 75%.
- All functional requirements shall be verified in terms of E2E tests.

[1] `https://mygit.th-deg.de`

- The project shall be conducted according to the *Scrum* framework using time-based capacity planning with a total of 3 sprints.
- All non-code project resources shall be managed and maintained with Jira[2]. At any time, the assets in Jira shall reflect the current state of the project.
- The dates and deadlines published in iLearn under the section *Dates and Deadlines* shall apply. Note that all deadlines are hard.

Task 2 - Presentation

Create a presentation document of 10-15 slides. It shall demonstrate the software developed in **Task 1**, provide insights on the architecture of the system, and highlight aspects that make the solution special. Furthermore, each group member is tasked to create and present a slide detailing the personal contribution to the project.

[2] `https://jira-stud.th-deg.de`