Project Plan Quiz Webapp

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# Versioning Table

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| --- | --- | --- | --- |
| Author | Version | Changes | Date |
| Ante | 1.0 | Created the document and 6 chapters | 9.9.2022 |
| Ante | 1.1 | Added database schema and constraints | 13.09.2022 |

# Project assignment

## Context

This webapp will be developed as a part of semester 3 software engineering course based programme.

## Goal

The goal of this project is to develop a full stack web application. The application will allow its users to create and play quizzes on various custom topics. There would also be functionality to compare your score to other users, add friends and send messages to other users.

## Scope

|  |  |
| --- | --- |
| Inside scope | Outside Scope |
| 1 Creating the application | Hosting the website |
| 2 Creating the database |  |

## Strategy

The project will be conducted over the course of the semester, using the agile scrum methodology. It will be split in 6 sprints of around 3 weeks each. I will be using Jira to plan and organize my sprints , each task will be graded with points depending on how many hours I assume it will take. The testing will be partially automated and I will also manually test the application according to the test plan document. Version control will be done using gitlab with a main branch and a development branch.

## Research questions and methodology

1. Should Angular or React be used for the front end?

This question will be answered firstly by doing a literature study and seeing what is recommended for smaller projects, Furthermore I will do available product analysis to see what other developers are using for similar projects. Finally I will do community research to gather more opinions on the topic.

1. What are the common features of online quiz games that I should also include and how would I further improve this?

For this question I will focus mainly on available product analysis in order to see what other web apps are offering. After that I will explore user requirements by browsing related forums and perhaps asking friends for an opinion in order to improve and implement wanted features that other quiz webapps do not have.

1. Should I use MySql or a MongoDB for my database?

I will answer this question mainly by literature study. Reading the documentation and what each type of database is intended for in order to understand what would better suit my needs.

## End products

Diagram

Description automatically generated

# Project Organization

## General

As this is an individual project, the organization will be rather simple. The project is organized in 6 sprints of around 3 weeks each. At the end of every sprint there are certain deliverables that have to be finished and certain criteria to be met. I will also be consulting with at least 1 teach per week to show my progress and discuss the further direction of the project.

## Database schema

Table

Description automatically generated

This is the basic schema of the database that I will start with. This is a starting point and is subject to change during the project.

# Phases of the project

As mentioned before there will be 6 sprints of 3 weeks each. First sprint mainly consists of writing the documentation, initializing the gitlab repository and creating the basic structure of the project backend. In the second sprint the backend will continue to grow and the basics of the frontend will be setup along with a software design document and a first prototype iteration. In sprint 3 there will be 2nd prototype iteration, a quality assurance with sonarqube and a research document. As this is an agile scrum project, I will be updating the documentation as I go along. Sprint 4 is just continuing to develop the app according to the issues from the backlog that will be decided at the start of each sprint. During this sprint I will also ask for a feedback on my UI. Sprint 5 will notably contain the report on how/why doesn’t my app deal with OWASP top 10 security risks and also the chat feature should be finished at this point. In sprint 6 the final release version should be ready, along with all the up to date documentation and it will all be submitted.

# Testing strategy and configuration management

## Testing strategy

I will write unit tests for a part of the code and also include these in the CI/CD pipeline on gitlab so they are automatically ran every time something is pushed to git. I will manually configure a gitlab runner on my laptop for this purpose. Furthermore every time a new feature is implemented I will make sure to manually test the webapp before pushing it to gitlab and merging to the main branch.

## Configuration management

The version control that will be used is gitlab with a main branch and a dev branch. Since it is a project done by a single person I believe that having main, dev and a separate branch for each feature is not needed and it will be simpler to just work on dev and once it is working and tested to merge it to main.

# Risk

|  |  |  |
| --- | --- | --- |
| Risk | Prevention activities | Mitigation activities |
| Not being done on time | I will try to keep up with the work and deliver continuously throughout the semester | Work harder once I realize I am behind |
| Time loss due to illness | I will try to finish each sprint 2-3 days before the due date so I have some room to fix things | Work harder/more in the future after I fall behind |

# Constraints

The main constraint of this project is time. I have one semester to finish this full stack web application along with another group project while attending lessons. The second constraint is that I suggested to use java/springboot/react/mySql for the webapp. While this is not a hard constraint and I could use some other framework if I argument my reasoning it is recommended by the course teachers and also it will be easier since all the course materials are for these languages.