



# HomeWork Quiz App

## Software Engineering Practice

Vitor Wogel

Diego Touchard

2<sup>nd</sup> semester 2022/23

## Contents

Overall Introduction to Project.....	3
Product Vision.....	3
Features.....	4
Personas.....	5
What is a Persona?.....	5
Persona 1.....	5
Persona 2.....	5
Scenarios.....	6
What is a Scenario?.....	6
Scenario 1.....	6
Scenario 2.....	6
User Stories.....	7
What is a User Story?.....	7
User Story 1.....	7
User Story 2.....	7
User Story 3.....	8
Prototype.....	8
What is a Prototype?.....	8
Tool used to create Prototype.....	8
URL or Screen Shots.....	8

## Overall Introduction to Project

In the modern educational system, it is essential for students to be interested and engaged in the subject matter presented in class. With this in mind, we have developed an educational application called the Homework Quiz. This application is specifically designed for professors and students of the university who are looking for a more interactive way to engage with the subject matter presented in class.

The Homework Quiz is a unique educational app that allows professors to create multiple-choice questions on any subject and post them for the students enrolled in the module, with or without a deadline. Unlike other educational apps such as Kahoot or Quizlet, our product allows students to access the quiz at any time, individually, and their work gets stored.

Our product is a real quiz that gives students homework in a more interactive way, keeping the user interaction at all times. The questions and answers are stored and accessible for students to review, making it easier for them to revise the material and test their knowledge.

In summary, the Homework Quiz is an innovative educational app that aims to increase student engagement and interaction with the subject matter presented in class. It is a unique and effective way for professors to assess students' knowledge and for students to test their understanding of the course material.

## Product Vision

This application is made for professors and students of the university, who need to get more interested and engaged with the subject given in class.

The Homework Quiz is an educational app that allows the professor to create questions on whatever subject he decides to and post it for the students enrolled in the module with or without a deadline. All questions are multiple choice to keep the dynamic format.

Unlike Kahoot, that has to be played with multiple people at the same time and the questions are lost as soon as the host leaves the room and Quizlet, that doesn't accept answers for the cards, our product gives students homework in a more interactive way, so it can be played by any enrolled user at any time, individually, and the work gets stored. Also, our product is a real quiz, with questions and answers, keeping the user interaction at all times.

## Features

There is a set of features that we organized into a list for our project:

1. User registration and login for both students and professors.
2. Dashboard for creating and managing quizzes.
3. Quiz creation tools to easily add, edit, and delete questions and answer choices.
4. Option to specify a time limit for each quiz.
5. Option to assign quizzes to specific students or groups of students.
6. Option to schedule quizzes to be released and/or due at specific times.
7. Option to set quizzes in a timed or untimed setting.
8. Multiple choice question format.
9. Automatic grading and feedback for students after completing a quiz.
10. Option for students to review their completed quizzes and see which questions they got right or wrong.
11. Professor's overview of students grading.
12. Ability for professors to provide feedback on individual student answers and offer suggestions for improvement.
13. Option for students to bookmark or flag questions they want to review later.
14. Social media sharing options, so students can share their quiz scores or progress with their friends.
15. Option to set how many questions the quiz should have. (up to a reasonable limit)
16. Option for students to attach pictures and show their methods to get to the answer.
17. Private and public quizzes, being the private ones by invitation and the public by setting a unique quiz ID.
18. Option to set polls instead of just questions.
19. Have a set of profiles that can connect to each other.
20. Any user can generate a quiz or poll.
21. Option to login using the Google account.
22. Option to delete the account and wipe data of user.
23. Option to enter as a guest and access public quizzes.

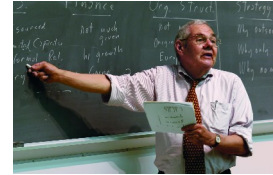
## Personas

### What is a Persona?

User personas are fictional representations of target users in software development, created to understand their needs, behaviors, and motivations. They are used to guide the design and development of software, ensuring it meets the needs of the target audience, leading to higher user satisfaction and a more successful product.

#### Persona 1

**Marcos Braz, chemistry university professor.**



Marcos Braz is a 58 year old Chemistry professor in a traditional university in Brazil. He has two children that are now majoring in the same course as he did, giving the passion he has for the subject and that he was able to extend to his family. The lecturer spent most of his life teaching students and he believes that by doing exercises is the only way a student can really learn.

However Marcos is disappointed by his young students who don't seem to care to practice at home. "They are too addicted to this new technologies", he says. For Marcos the ideal plan would be to unite the technology to the learning process, so he is interested in what HomeworQuiz app is offering as features. The problem is since he is not too used to scrolling on the phone and social media, this would have to have a very simple interface, intuitive and straight forward, since he doesn't have much time to waste on the learning process for the platform.

#### Persona 2

**Thaiz Amaral, one of Marcos's students.**



Thaiz is a 19 year old Brazilian student that has classes of Chemistry with Marcos, among other modules that she takes on the university. She dreams about becoming a successful Computer Engineer, but Chemistry is not one of her priorities right now, so she doesn't do much practice at home, in special because sometimes she misses classes so she doesn't get the handouts given by Marcos at the classroom.

Since Thaiz is very skilled with her phone and online platforms, she wishes that the university would surrender to the new era of technologies and just post every homework online, so she can have it even if she misses class, a more practical and ecological way of studying for exams. Besides that, what is most important for her is getting the feedback from the app and the professor about her answers to each quiz, so she doesn't need to go looking for the lecturer every time she has a simple doubt, she also would like to flag the questions that are more difficult to her.

## Scenarios

### What is a Scenario?

User scenarios are descriptions of how a user might interact with a software application in a specific context or situation. They are used in software development to help developers understand how users will use the software, and to identify potential user needs and pain points. User scenarios typically include information about the user's goals, tasks, and interactions with the software, as well as the context in which the software will be used. By creating user scenarios, developers can ensure that the software is designed to meet the needs of its users and that it provides a positive user experience.

### Scenario 1

#### **Marcos (the chemistry professor) user scenario:**

Marcos is teaching organic chemistry to his students and the final exams are approaching. For that reason he wants to give a complete review of the module so that the students can study while practising what was given in class.

From home and with some time to spare he decides to log in to the Homework Quiz app with his Google account and creates a new blank quiz, setting a time limit of 90 minutes and 30 questions, to get the students ready for the exams. The only problem is that Marcos wanted to see how the students got to the answer, and that is not possible using the app, because it just accepts multiple choice answers.

With that in mind the lecturer emailed some of his colleagues looking for possible ways to overcome this issue. Sam, the maths lecturer said that he could ask the students to e-mail him, with the pictures of the calculation on the questions needed. He agrees to it and then let the students know, by e-mail, the quiz ID and the details of what needs to be done.

### Scenario 2

#### **Thaiz (Marcos student) user scenario:**

Thaiz is worried about the week of exams, specially because she didn't do much practice for the Chemistry lessons this semester.

She receives an e-mail from Marcos informing that the students are supposed to log on to the Homework Quiz app in order to do a practical section to prepare for the exam. Extremely relieved she downloads the app, creates a new account and enters the quiz ID provided in the e-mail.

Thaiz, does a good job on the quiz, flagging up some questions that she had a doubt and she receives the feedback from the app saying she got 75% of the answers correct. Happy with the results she is just waiting now for the feedback from the professor, to understand and practice more on the questions she got wrong.

## User Stories

### What is a User Story?

User stories are concise, written descriptions of a software feature or functionality from the perspective of an end-user. They are used in agile software development to define and communicate the requirements of the software in a way that is easily understandable by all members of the development team. User stories typically follow a simple template that includes a description of the user, the user's goal or need, and the benefits of achieving that goal. By using user stories, development teams can ensure that they are building software that meets the needs of the end-users and that provides value to the customer.

### User Story 1

#### **Marcos user stories:**

- As a teacher I want to set a timed or untimed quiz for my students.
- As a teacher I want that quiz to have as many questions as necessary.
- As a teacher I want to have an overview of all students answers.
- As a teacher I want to have access to students calculations so I can check how they got to that answer.
- As a teacher I want to select a specific group of students that can answer the quiz.
- As a teacher I want to set the privacy of the quiz (public or private) so I know who can enter to that quiz session.
- As a teacher I want to set the quiz availability time.
- As a teacher I want to do polls instead of just multiple choice quizzes.
- As a teacher I want to be able to see other profiles registered on the app.

### User Story 2

#### **Thaiz user stories:**

- As a student I want to enter a public quiz just by putting up its ID.
- As a student I want to be able to flag questions so I can return to them later.
- As a student I want to have an instantaneous feedback from the platform on the percentage of questions I got correct.
- As a student I want to have my professor's complete feedback.
- As a student I want to be able to generate my own quizzes.
- As a student I want to share my results on social media.

### User Story 3

#### General user stories:

- As a user I want to login using my Google account so I don't have to register as a new user.
- As a user I want to have the possibility of signing up as a new user.
- As a user I want to be able to delete my account.
- As a user I want to be able to enter as a guest.

### Prototype

#### What is a Prototype?

A prototype in software development is an early version of a software application that is built to test and validate ideas, concepts, and functionality. It is a preliminary model or sample that is created to get feedback from stakeholders and end-users, and to identify and address potential issues before investing significant time and resources in building the final product. Prototypes can take various forms, from simple sketches or mockups to fully functioning software with limited features. By creating prototypes, developers can gather valuable feedback, improve the user experience, and minimize the risk of developing software that does not meet the needs of its users.

#### Tool used to create Prototype

Canva is an incredibly user-friendly graphic design tool that is perfect for creating prototypes. As a student, I found Canva to be incredibly easy to use, even with no prior design experience. The platform offers a vast library of templates, graphics, and fonts that are customizable and easy to manipulate, making it simple to create a professional-looking design quickly. What's more, Canva also provides useful features such as collaboration tools, so I could easily share my prototype with other team members or instructors for feedback. Overall, I found Canva to be an excellent tool for creating prototypes, and I would highly recommend it to anyone looking for an intuitive and straightforward design solution.

#### URL or Screen Shots

The complete PDF illustrating this prototype can be found inside the same directory where this documentation was extracted from. It is highly recommended to scroll through the 13 designed pages to have a clear understanding of the application's purpose and main functionalities, as well as the proposed user interface.