

Documentation

-Gamification App-

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Let me introduce you my gamification app, made in **Java** programming language and built with **JavaFX**, **SceneBuilder**, and **SQLite** database technology. This app allows users to earn tokens, climb the ranks and achieve badges by completing quests that are added by other users. The quests require players to complete a certain number of Tic Tac Toe games to progress. Users can also add quests by using their tokens as a reward for the winner. The app features **CSS** for styling parts of the interfaces, giving it a visually appealing and modern look. Additionally, the app uses **log4net** logger for logging, which ensures that all user actions are recorded and can be reviewed by the administrator if needed. The app also includes features such as signup, login/logout, and account deletion, providing a secure and personalized experience for each player.

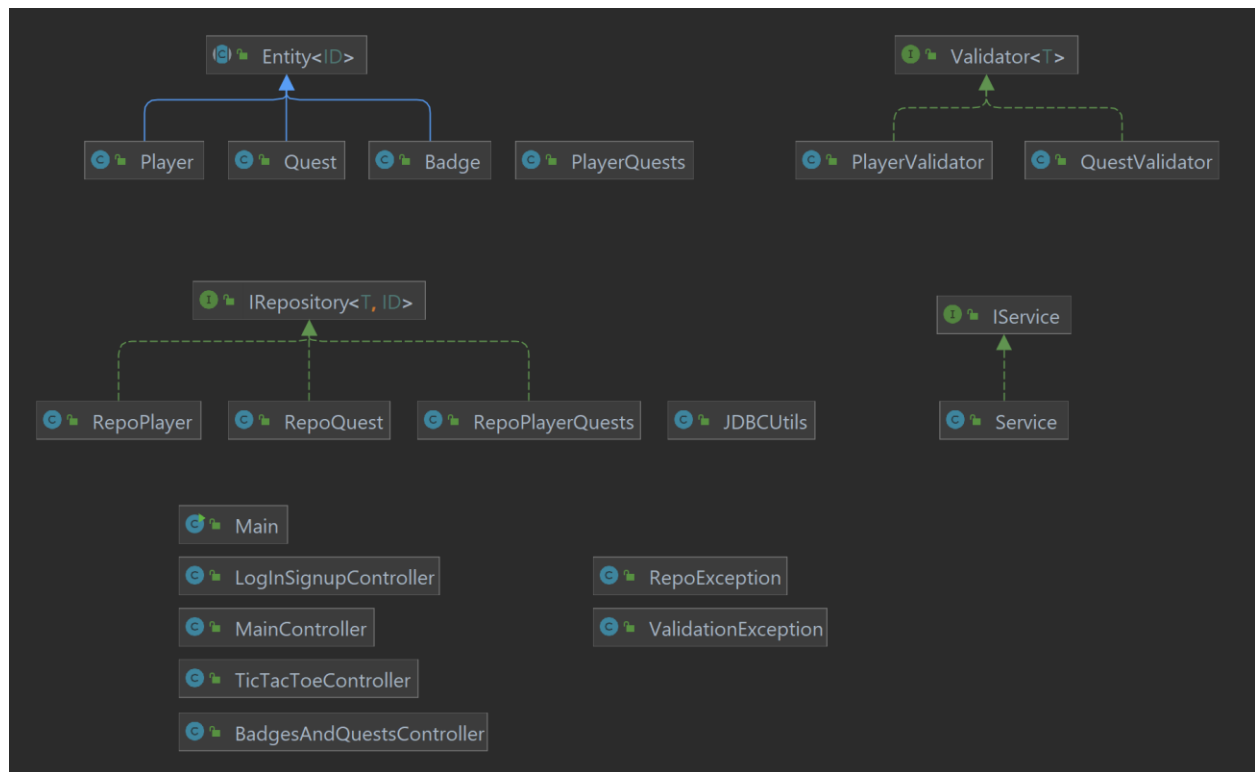
The infrastructure of the app is made of layers: Domain (the domain layer), which has the entities that I use and the validators for them, then the Database Repository followed by Service (the application layer) and finally the Controllers (the presentation layer). You will also find a package made for RepoException and ValidationException, classes used for throwing exceptions at the validator or repo level.

In the resources part of the app, you will find the .fxml files which I configured and designed using Scene Builder and CSS, the .css files and some images that I used for my app.

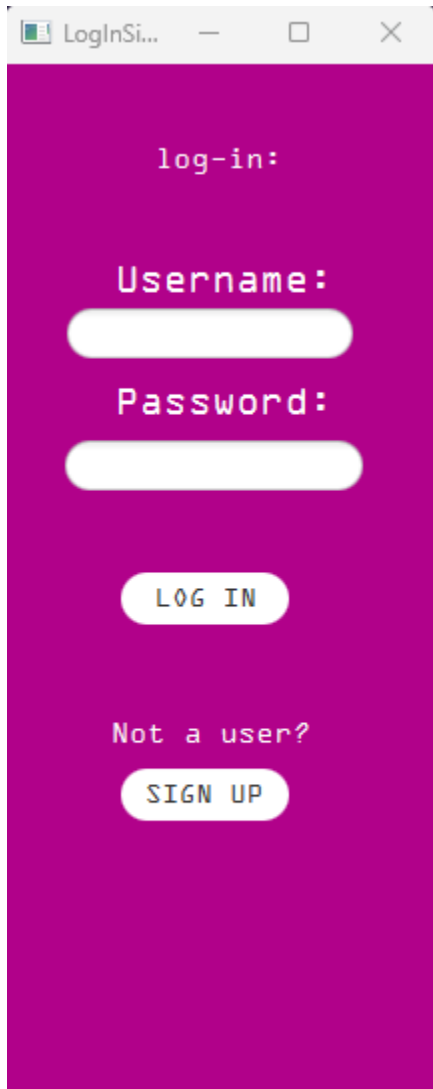
When it comes to the DataBase technology, I used SQLite to create the tables for the users, badges, quests and one connection table. The connection string for the database connection can be found in the "bd.config" file.

In the target folder you will find the logger.log file, where you can observe all the actions in the app. I used this to find the errors in my code easier and also to log the activity of players.

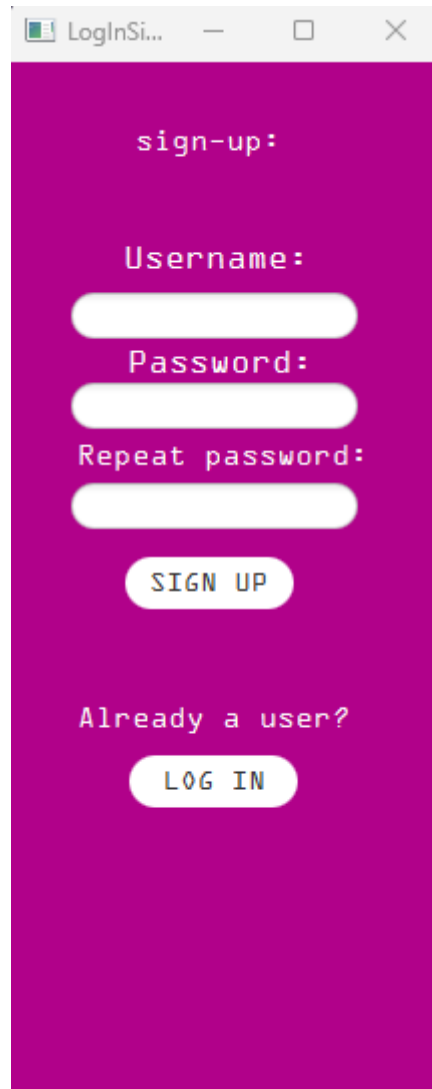
UML DIAGRAM:



When we launch the app, the first thing that pops-up is the LogIn/SignUp window. It looks like this:

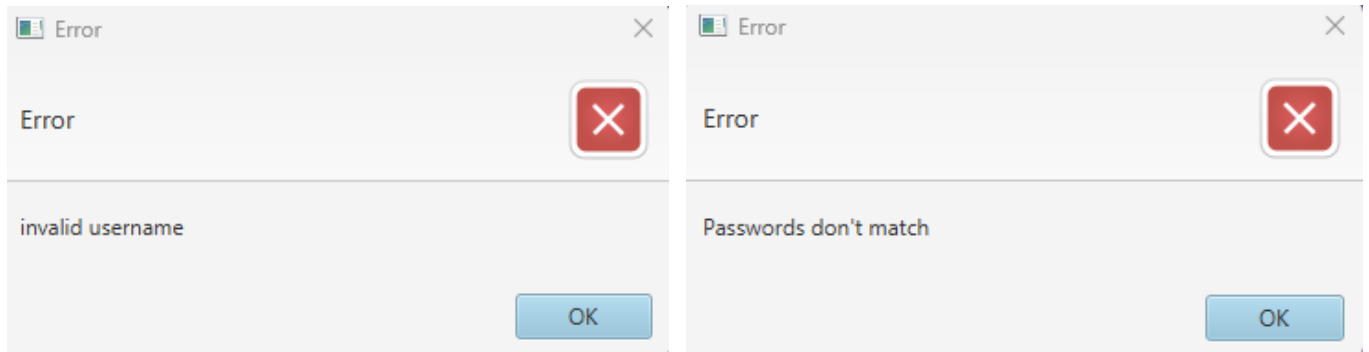


A screenshot of a web browser window titled "LogInSi...". The page has a solid magenta background. At the top, the text "log-in:" is displayed in a light gray, monospace-style font. Below this, the label "Username:" is followed by a white, rounded rectangular input field. Underneath, the label "Password:" is followed by another white, rounded rectangular input field. A white, rounded rectangular button with the text "LOG IN" in a light gray, monospace-style font is positioned below the password field. At the bottom of the page, the text "Not a user?" is shown, followed by a white, rounded rectangular button with the text "SIGN UP" in a light gray, monospace-style font.

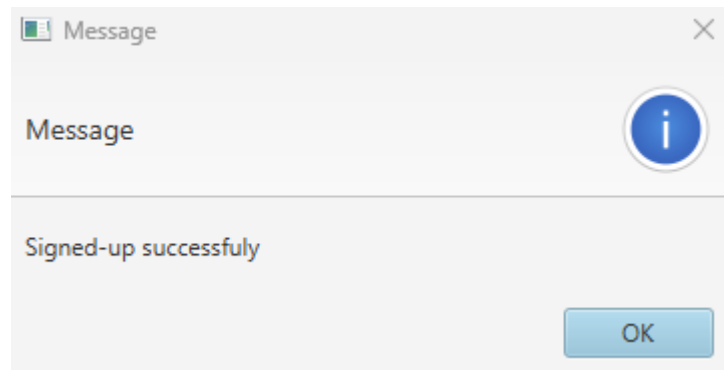


A screenshot of a web browser window titled "LogInSi...". The page has a solid magenta background. At the top, the text "sign-up:" is displayed in a light gray, monospace-style font. Below this, the label "Username:" is followed by a white, rounded rectangular input field. Underneath, the label "Password:" is followed by a white, rounded rectangular input field. Below that, the label "Repeat password:" is followed by another white, rounded rectangular input field. A white, rounded rectangular button with the text "SIGN UP" in a light gray, monospace-style font is positioned below the second password field. At the bottom of the page, the text "Already a user?" is shown, followed by a white, rounded rectangular button with the text "LOG IN" in a light gray, monospace-style font.

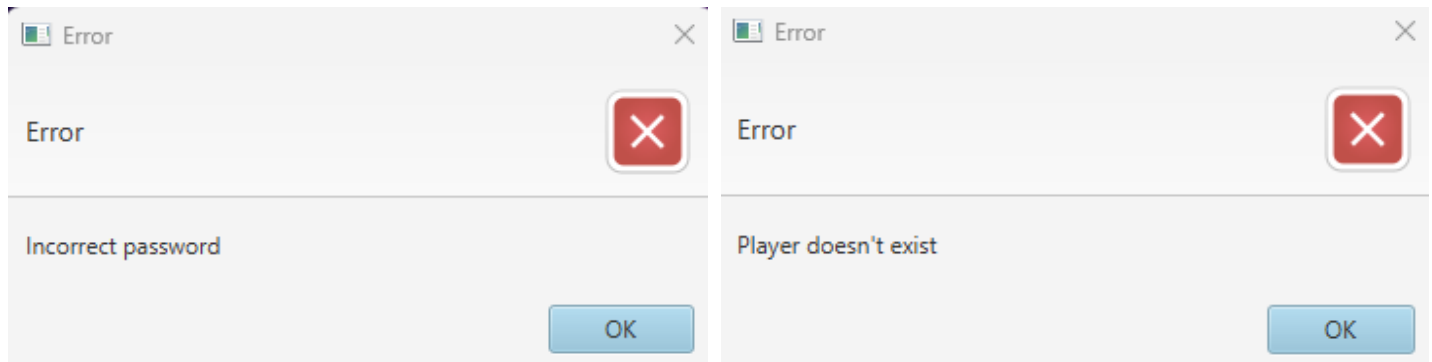
For the sign-up window, if you provide an empty username/password, or if the passwords don't match while trying to make a new account, the app tells you and your account is not being created:



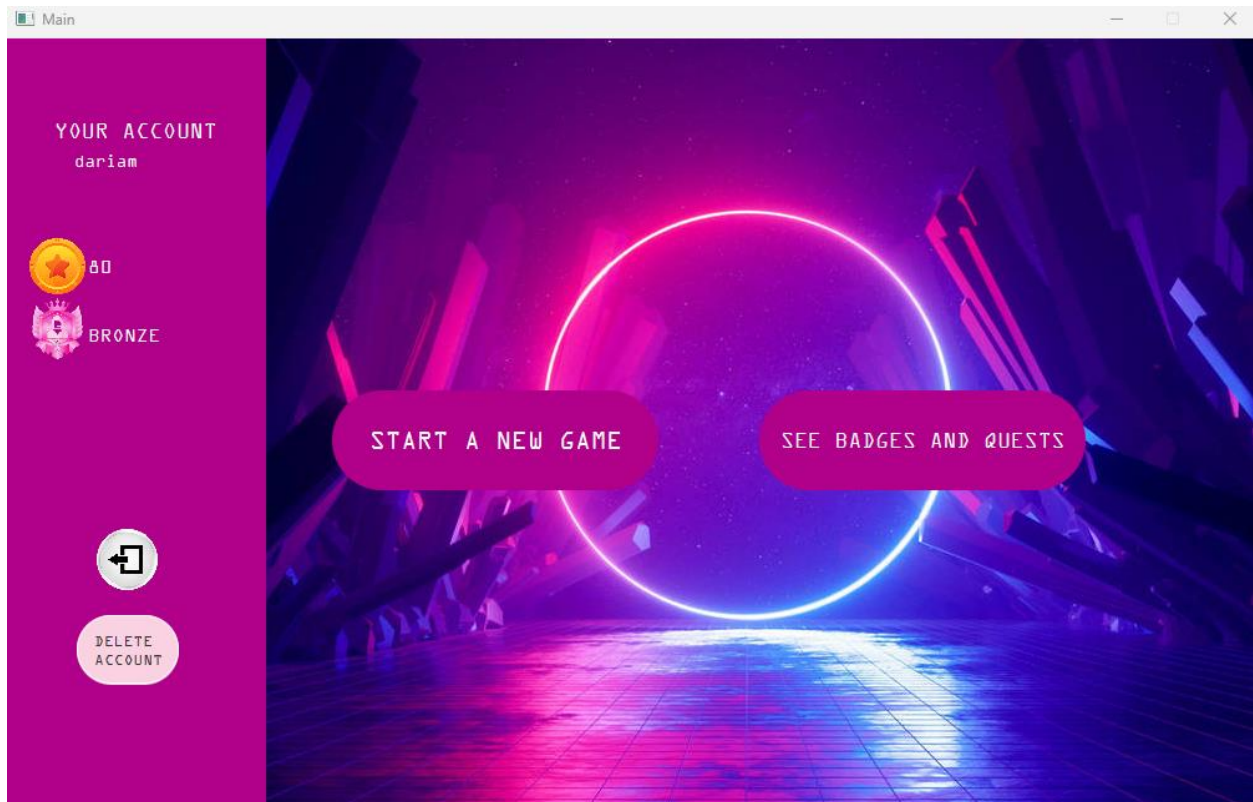
If everything goes well, the app also tells you:



For the log-in window, if you type the wrong password or your credentials are not ok, the app lets you know:



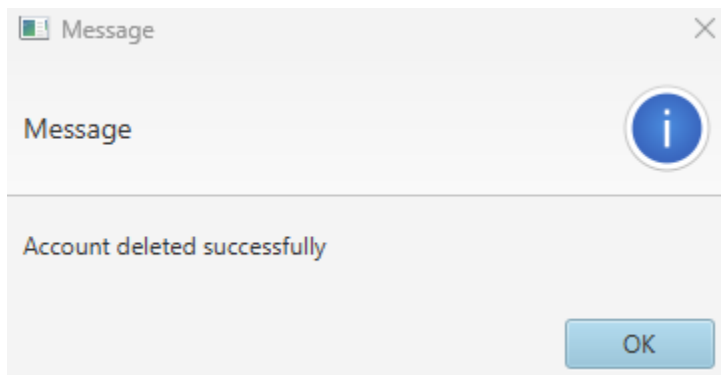
When you log-in successfully, you will see the main window:



Here you can see how many tokens you have and your rank.

In the bottom left you find the log-out button and the delete account button.

Let's assume you want to delete your account. After pushing the button, the app tells you if everything went fine:

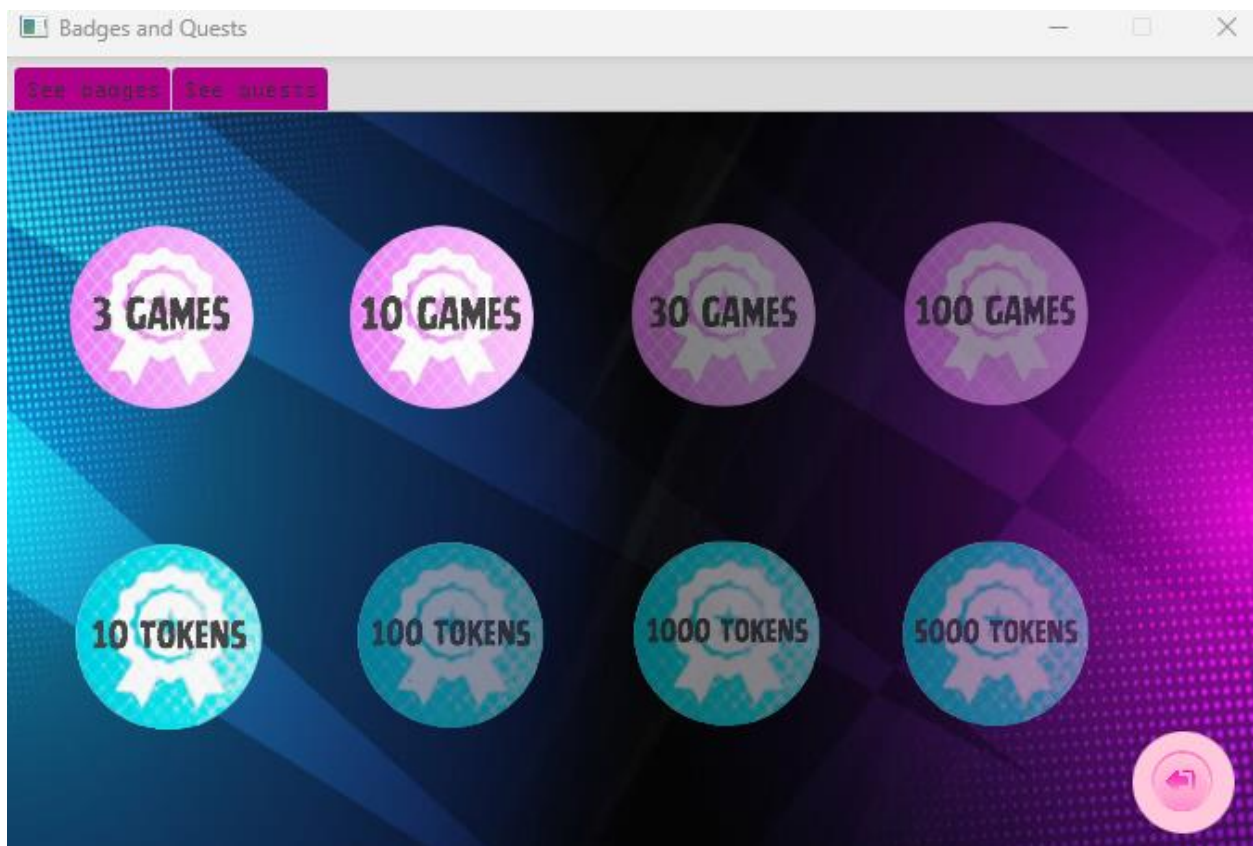


In the center-right of the main window, you have two buttons: **START A NEW GAME** and **SEE BADGES AND QUESTS**.

If you push the **SEE BADGES AND QUESTS BUTTON**, it will open a new window. Here you have two tabs, one for badges and one for quests.

On “See badges” you will find all your badges, and also the ones you do not own yet (the transparent ones).

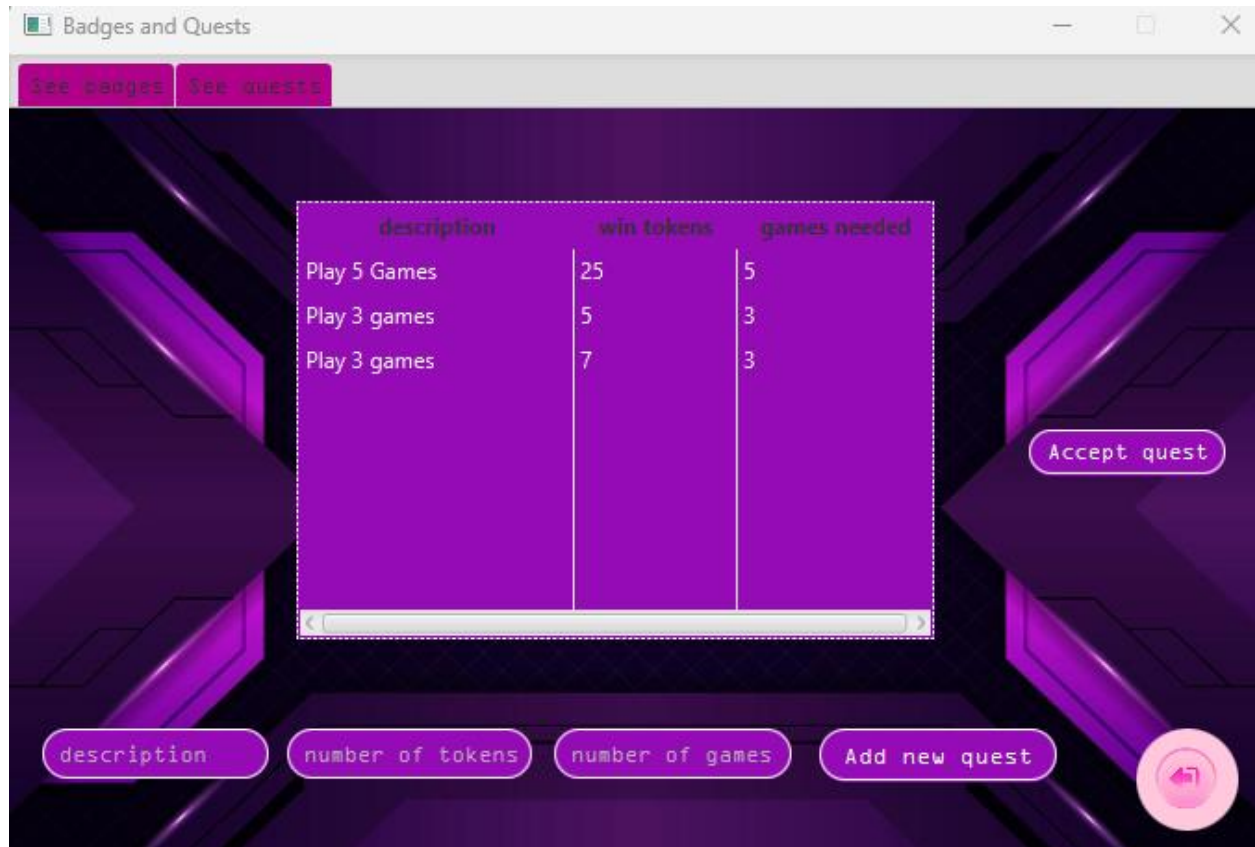
In the bottom right, you can also see the “back” button which takes you back to the main window.



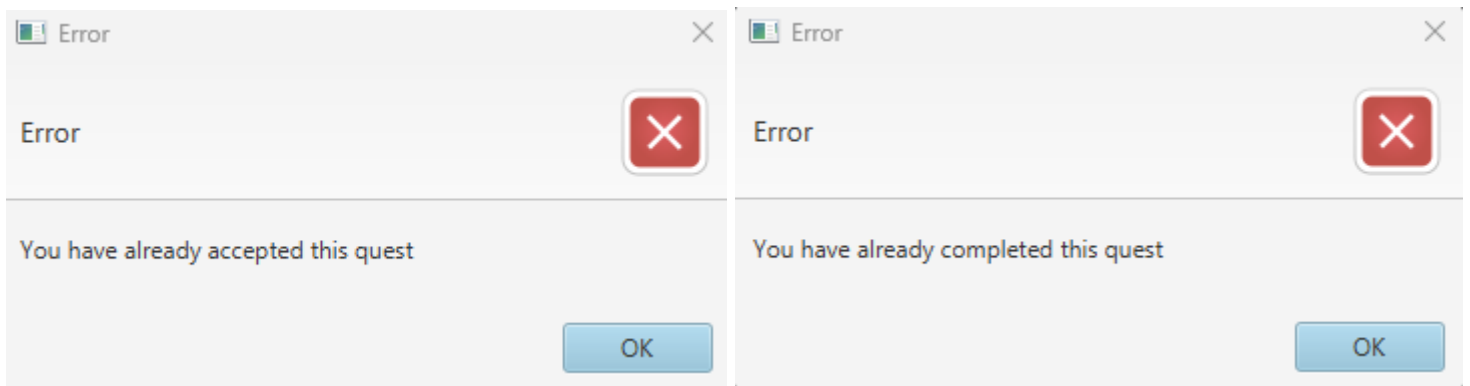
Next, if you go to “See quests” tab, you will find all the quests that other players proposed (but not yours).

You can see the description of the quest, the number of tokens you win if you complete it and the number of games you have to win in order to complete the quest.

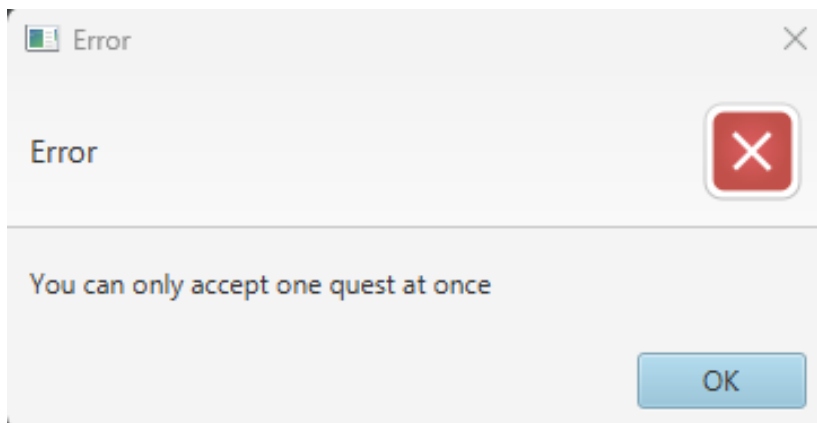
If you want to accept a quest and try to complete it, all you have to do is select the quest and push the “Accept quest” button. But be careful, after you take a quest, you can’t accept another one or give up on it until you complete it.



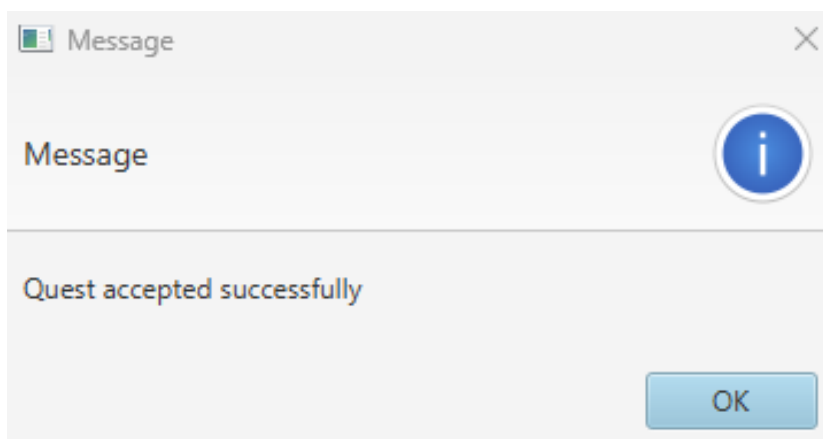
If you already completed or accepted the quest you selected, the app will warn you:



Also, if you already have one accepted quest, you will also receive an error:

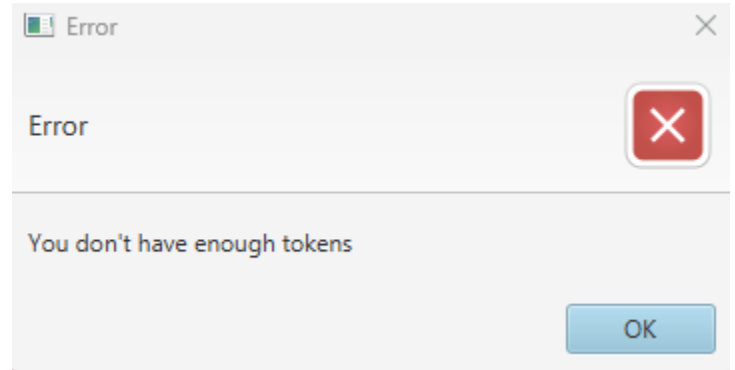
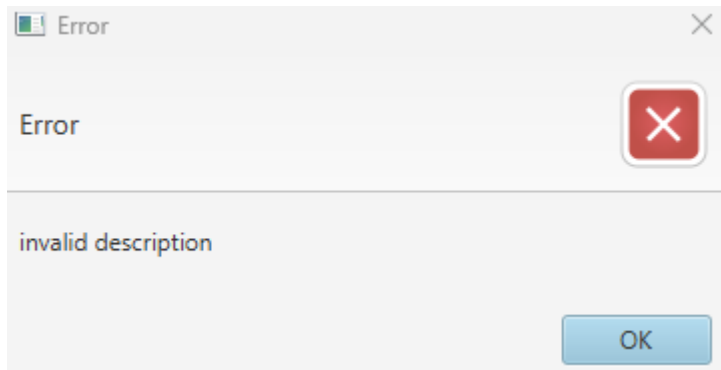


If everything turns out to be okay, the app will tell you:

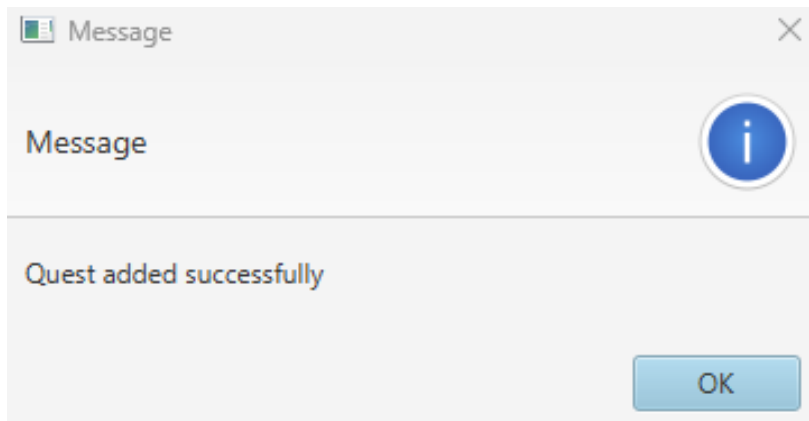


In the bottom section of the “See quests” tab, you can find three input fields and a button. They are used for adding a new quest. All you have to do is type in the description of the quest, the number of tokens the winner gets and the number of games that need to be won in order to complete it. After that, push the button “Add new quest”.

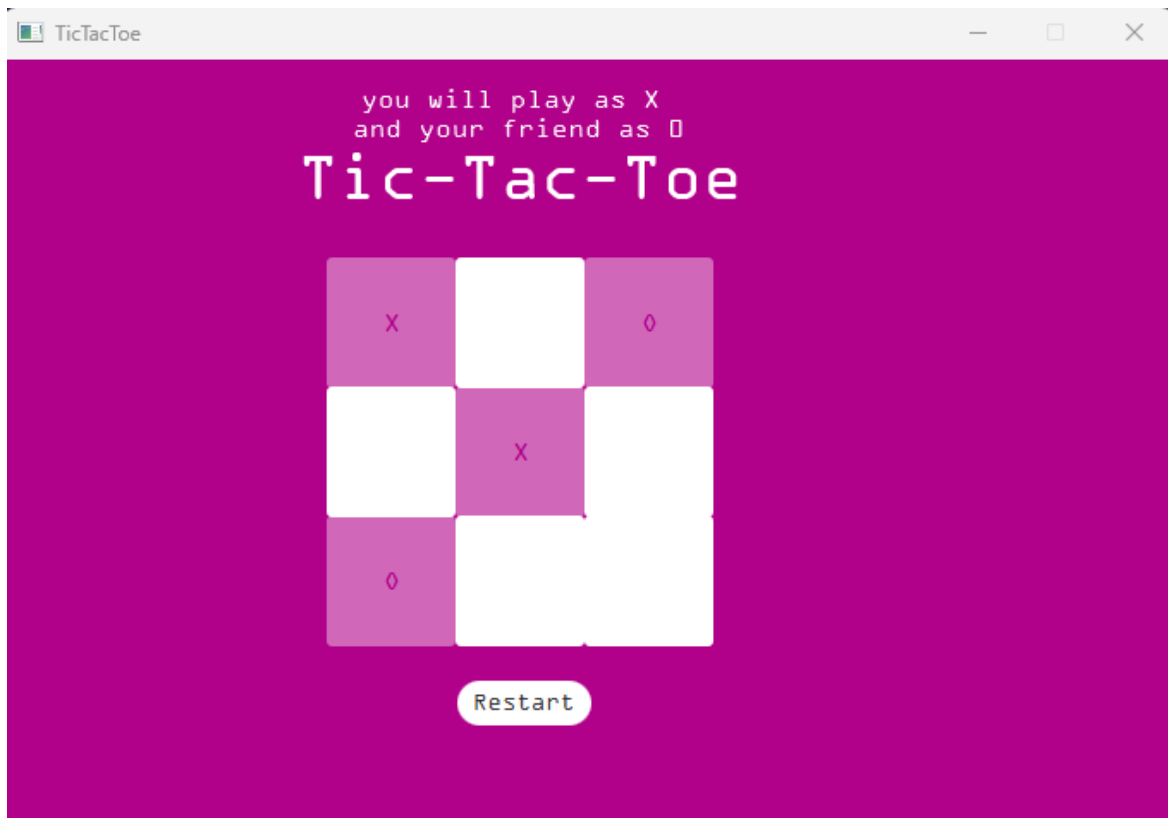
If you don’t provide good inputs, or if you don’t have enough tokens to give to the winners, the app will tell you:



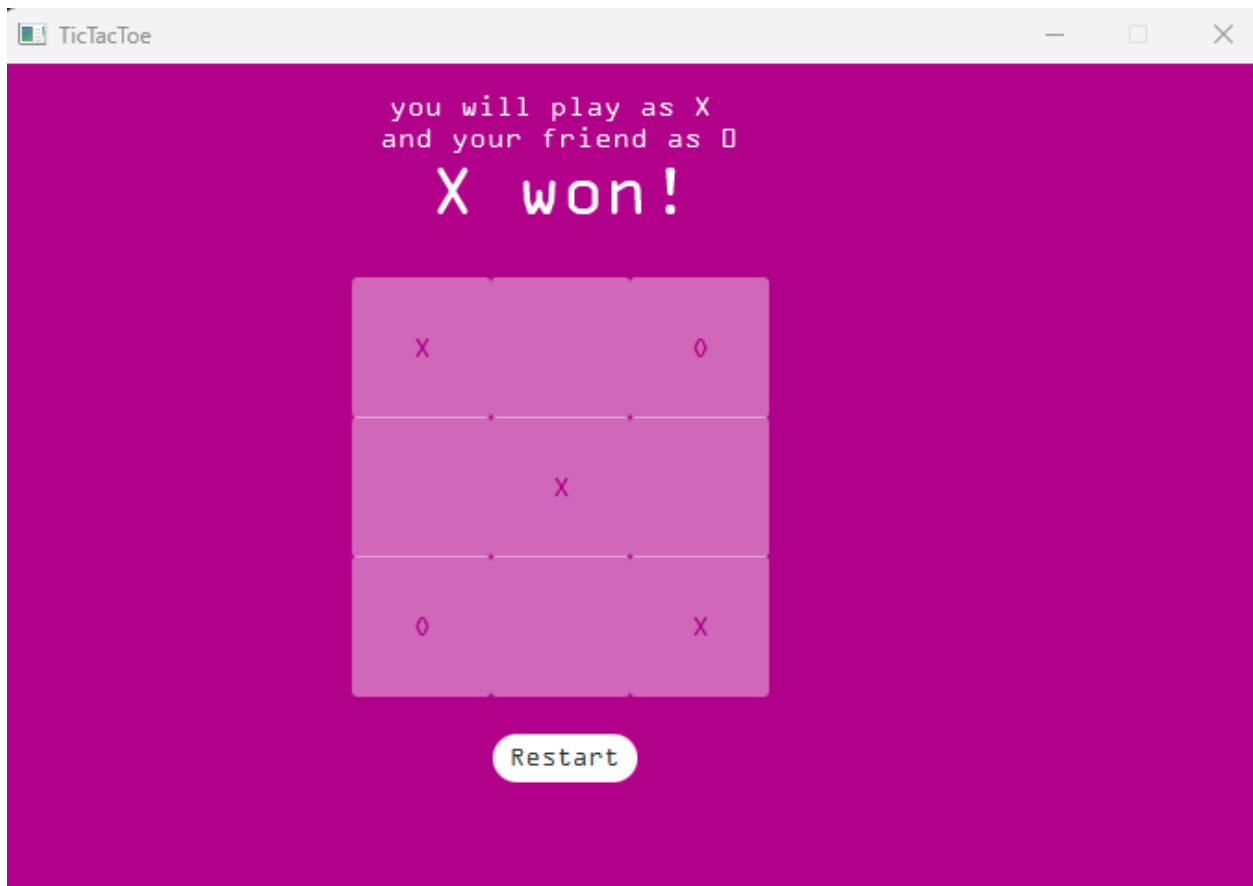
However, if everything goes well, you will see:



If you go back to the main window and push the “Start a new game button”, it will open you this window, with a multi-player Tic-Tac-Toe game I made:



When one of you wins, it will look like this:



If you press the Restart button, a new game will begin.

If you have an accepted quest and you play the number of games needed to complete it, you will find out when you completed the quest and the tokens will be added to yours.

