

# Java Checkers Game Report

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Intermediate Java Programming

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# **Abstract**

This report is a documentation for my Intermediate Java Project for first term of senior year, where I have detailed some information about my project, class diagram and ERD, my research requirement, how this application works, and a basic user manual.

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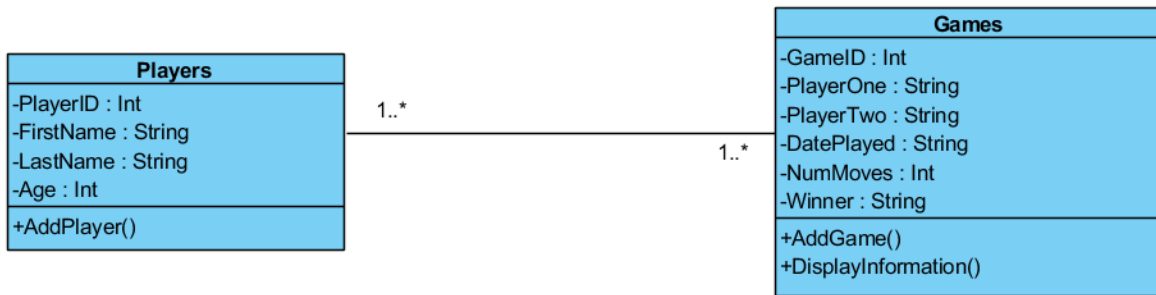
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# Introduction

This Checkers Game Report is an application that was created in Java, using SQLite database to save player, game and retrieve game, based on user's input. So the user could save their games played. This report explains how to use the application, a summary of what was done to implement it.

# Class Diagram

## Java Checkers Game Report Class Diagram



## Java Checkers Game Report ERD



# Research

To be able to complete this project, I was requested to use a database platform that we did not use in class, so I was asked to use SQLite as my research.

## SQLite

For my research, I have had to download an SQLite program that I could create the database. So, I downloaded SQLite Studio Windows (installer) version InstallSQLiteStudio-3.2.1.exe linked here:

<https://sqlitestudio.pl/index.rvt?act=download>

## Connecting to the database

To be able to connect to the database, I had to download the latest version of SQLite JDBC Driver linked here:

<https://bitbucket.org/xerial/sqlite-jdbc/downloads/>

As the research I have made, I found two websites that helped me creating the database connection. They are linked below:

<https://www.sqlitetutorial.net/sqlite-java/sqlite-jdbc-driver/>

<https://www.javatpoint.com/java-sqlite>

# Functionality

In this Checkers Game Report application, in the “Add Player” tab the user can add as many different players as he/she wants. After adding at least two players in the application, they can choose the “Add Game” tab, where he/she can choose who is playing this match, the date that was played, number of moves and who was the winner. After adding at least one game, the user can retrieve it in the “Retrieve Game” tab, and all the information of that game will be displayed.

# Testing

The Checkers Game Report application was tested iteratively. I started creating the database, and the add player functionality, after ensuring that the data was been saved to the database, I did the textboxes validation for the user’s input, to ensure that all data needed was inserted. After that, I had to fetch the players and display them in dropdown boxes. Then I had to figure out how I could get a date picker that I could work with. So, I found JCalendar jar, and I used JDateChooser. I was trying to save it in database as Date, so I could display it in the retrieve game tab, but the I figure out that would be easier if I used another JDateChooser there as well, so the date was saved in the database in milliseconds, and then converted back in date when retrieved. In the add game tab, I had validated if was chosen two different players, and choose a winner. On the retrieve tab, before we can retrieve any data from database, we must choose a game from the dropdown box, that was also validated.

# Possible Extensions

The Checkers Game Report is a very simple application that could have other functionalities, like create a championship, with playoffs, going up to the grand final. For players with a big percentage of wins, could have like a golden badge, to show that he/she is like a champ.

## **Summary and Conclusions**

For creating this Checker Game Report application, even being a very simple application, it exceeded my expectations. The application worked exactly how it was supposed to work. Adding a create championship feature and implementing the golden badge to the best players would be the next steps that I would like to implement.



# References and Bibliography

## **SQLite JDBC Driver**

<https://bitbucket.org/xerial/sqlite-jdbc/downloads/>

## **Connect to SQLite Database**

<https://www.javatpoint.com/java-sqlite>

## **SQLite Studio**


<https://sqlitestudio.pl/index.rvt?act=download>

## **JCalendar**

<https://toedter.com/jcalendar/>

# User Manual

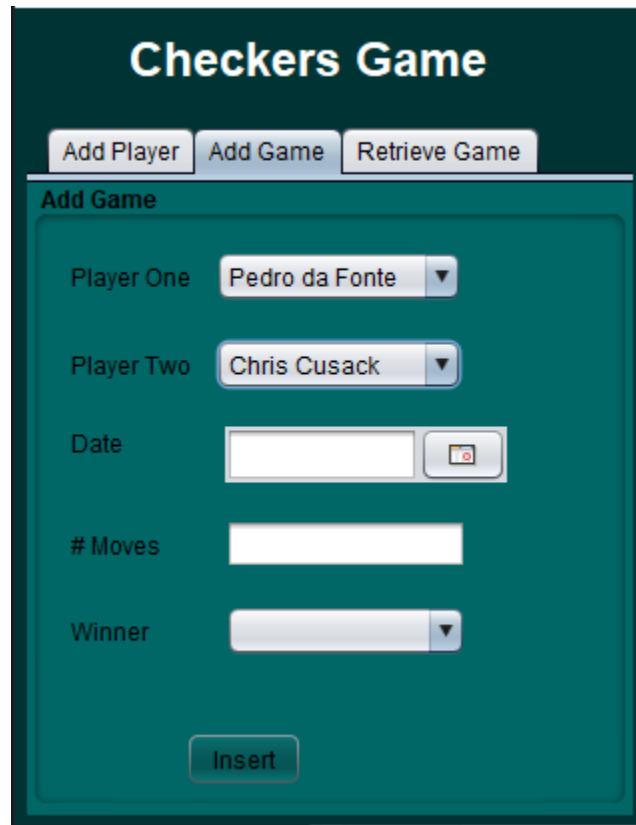
As soon as the app start, the user will be at the main page of the application, that is to create a new player. The user is asked to input his/her first name, last name and age.



The screenshot displays a mobile application interface titled "Checkers Game". At the top, there are three tabs: "Add Player" (highlighted in blue), "Add Game", and "Retrieve Game". Below the tabs, the "Add Player" section contains three input fields labeled "First Name", "Last Name", and "Age". Each field is represented by a white rectangular box. At the bottom right of this section is a button labeled "Insert".

Add Player Tab

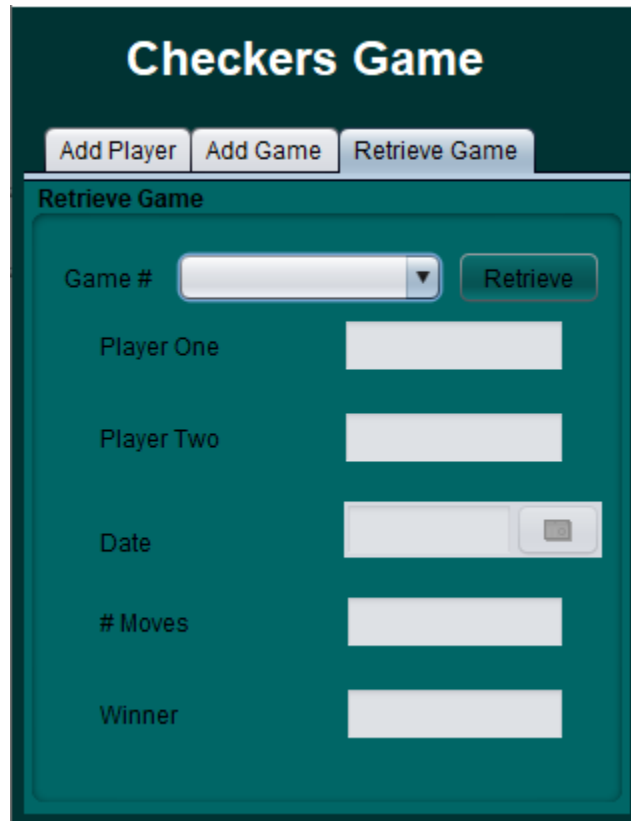
After creating, or if you had already saved, at least two players, the user can add a game played. So here the he/she will have to choose the two players that played against each other, the date played, number of moves and who was the winner.



The screenshot shows a web application titled "Checkers Game" with a dark teal background. At the top, there are three tabs: "Add Player", "Add Game" (which is selected and highlighted in a lighter teal), and "Retrieve Game". Below the tabs, the "Add Game" section contains several input fields: "Player One" with a dropdown menu showing "Pedro da Fonte", "Player Two" with a dropdown menu showing "Chris Cusack", "Date" with a text input field and a calendar icon, "# Moves" with a text input field, and "Winner" with a dropdown menu. At the bottom of this section is an "Insert" button.

Add Game Tab

After adding, or if you had already in your database, you can choose a game to retrieve, where is going to display again all information that was inserted when that game was saved. If the user wants to leave the application, they just need to press the “X” button on the top right corner of the application window.



The image shows a screenshot of a web application titled "Checkers Game". At the top, there are three tabs: "Add Player", "Add Game", and "Retrieve Game". The "Retrieve Game" tab is currently selected. Below the tabs, the "Retrieve Game" section contains a form with the following fields:

- Game #**: A dropdown menu with a downward arrow, followed by a "Retrieve" button.
- Player One**: A text input field.
- Player Two**: A text input field.
- Date**: A text input field with a calendar icon on the right.
- # Moves**: A text input field.
- Winner**: A text input field.

Retrieve Game tab