CDI

# Android Tic Tac Toe

C17- Mobile application development – Android Kotlin

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# Project Description

Implementation of the Tic Tac Toe game for android in Kotlin.

This is a two-player game (both players use the same mobile to play). The app begins by asking the players to enter their names. Then, a match starts, and the players wait their turn to play until the match ends. The first player to align three of the same symbols horizontally, vertically, or diagonally wins the match. The match ends with a winner or a draw, the app announces the result (winner or draw) using a toast. Each win gives a point to the winner player. After every match end, a new match starts automatically. A button offers the possibility to start a new game, this resets the board and the player's points.

**Game observations**
- The game begins only when the two names are entered, and the new game button is pressed. If a name is missing when the button is pressed, the game displays a toast informing the player to type their names. The same toast its displayed if the board its pressed before the game starts.
- Player 1 makes the 'X's appear and player 2, the 'O's.
- In the very first game, player 1 starts playing. Then, for the following games, the winner of the previous game is the first to play. If a game is restarted before the end, the first player remains the same.

**Development observations**
- Although the game works in both orientations, the game UI in portrait its more agreeable due de amount of information on screen.
- The game was developed to be supported in any device with API 21 or higher.
- The app was tested in the following devices:

| Run on | Model | API | Resolution |
|---|---|---|---|
| Physical mobile | Motorola moto g4 | 24 | 1080x1920 |
| Emulator | Pixel 2 | 28 | 1080x1920 |
| Emulator | Nexus One | 22 | 400x800 |

In all devices above the app worked correctly*.

*The UI has some minor misbehave in the smaller resolutions but none interfere with the game functioning (the message widget can overlap the players punctuation before the game starts and part of the player's name EditText may be hidden by the new button).

# Delivery

## What is included

Besides this document the delivery has the following items:

- Tic-Tac-Toe.zip: project folder exported from Android Studio containing all the coding for this project
- tictactoeBrunaMaciel.apk: app installation file
- Images folder: folder with all images used in the project (all were imported to the project, so this folder it's just a backup and it's not needed to run the project)

# Future Updates

- Improve the UI for smaller screens
- Save the ongoing game state even if the user closes the app (long term information storage)
- Implement a start menu where the user can choose the size of the board (3x3, 5x5, etc.)
- Use a dialog to get the players names at the beginning of the game instead of leaving in the same screen as the board giving the board more space in the screen.
- Give an option to the user to play with the computer
- Implement a timer countdown to make each play