

Introducing Neontris, Neon Tic Tac Tee!

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Are you bored and do you wish to play a game in the mean time? Well, there are a lot of games out there which could entertain you. What if you had a subtle device that could do just that? Introducing Neontris, a futuristic neon-version of the famous mini-game Tic Tac Toe. In this project, we shall instruct the reader about how we will realize this awesome game device supporting Neontris.

Introduction

‘Tris’ is a synonym for ‘Tic Tac Toe’ which refers to the Italian translation of the game. We decided to add a bit of neon style colors to it, which might make it more exciting for the people playing it. Tic Tac Toe is known worldwide and is a famous mini-game involving circles and crosses. The first player to add a horizontal, vertical or diagonal sequence of their corresponding shape, is the winner! Most people play tic tac toe, by initially taking a sheet of paper and drawing a 3x3 grid on it.

Description of the setup

For our setup, research has been done on various idea’s and designs. A possible way for this was with 8x8 LED grids and transistors [2]. However, inspiration was taken from Nintendo Switch’s design [1].

Our inputs include a Joystick which allows the player for movement around the 3x3 grid. When you click on the button for the first time, the game will start. After the first time, clicking the button will let the program for the game know where to place a cross or circle according to the current position of the joystick through arithmetic processing. When a shape has been placed on the grid, the contents on the display change, showing a new shape somewhere on the grid. Furthermore, the next turn is being made obvious by LED-lights, which light up if it’s either player X’s or Player O’s turn. Logical processing allows for a random player to begin first and contains information about whose turn it is.

The display shows a GUI made with java using the JavaFX framework [3]. The framework provides certain libraries for connecting your GUI into the display. The inputs are connected with the display through Bluetooth. This means that in order to play a round of Neontris, Bluetooth connection is required.

We will also implement an interrupt function which makes sure that debounce functionality is active for the button. Sometimes, players will try to place a shape on a square which already is filled with a shape. This will not work and will not result in a switch of turns.

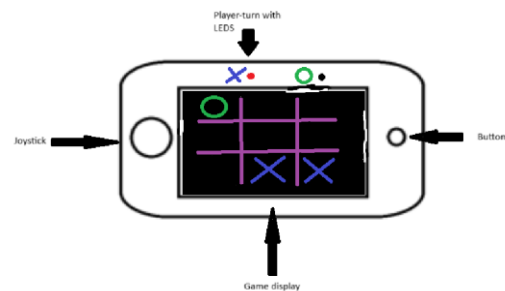


Figure 1: A small scale design of the game device.

Overview

- **Inputs**
 - Joystick
 - Button
- **Outputs**
 - LED
 - Display
- **Processing**
 - Arithmetic Processing
 - Logical Processing
- **Connectivity**
 - Bluetooth
- **User interface**
 - Self-made JavaFX GUI

References

- [1] *Speel altijd, overal en met iedereen.* (n.d.). Nintendo of Europe GmbH. <https://www.nintendo.nl/Hardware/Nintendo-Switch-familie/Nintendo-Switch/Nintendo-Switch-1148779.html>
- [2] Instructables. (2019, August 19). *LED MATRIX TOUCH CONTROL.* Instructables. <https://www.instructables.com/LED-MATRIX-TOUCH-CONTROL/>
- [3] *JavaFX.* (n.d.). <https://openjfx.io/>