Gameboy

Rizon Teodor Alexandru 1222A

Introduction

The Gameboy Arduino project is an exciting handheld gaming device that combines classic gaming nostalgia with modern Arduino technology. It features a vibrant 1.44" TFT LCD display, a buzzer for audio feedback, and three buttons for intuitive control.

General Description

With its compact size and sleek design, the Gameboy Arduino project offers a portable gaming experience. The menu system, displayed on the crisp TFT LCD screen, allows users to easily navigate through various options and settings. You can effortlessly scroll through the menu using the three buttons, making it simple to select games, adjust preferences, and explore additional features. One of the standout features of this project is the inclusion of a Pong game. This classic game is brought to life on the 1.44" TFT LCD display, providing a visually engaging experience. Using the buttons, players can control the paddle and try to outmaneuver the AI opponent. The integrated buzzer adds an immersive element by providing audio feedback for various game events and actions. The combination of the 1.44" TFT LCD display, buzzer, and buttons enhances the overall gaming experience of the Gameboy Arduino project. The colorful visuals on the display, accompanied by sound effects from the buzzer, create an engaging and interactive environment for players.

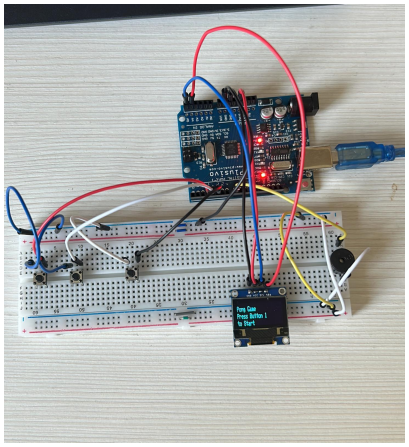
Electrical diagram

Hardware Design

Components

- 1 Arduino Uno R3
- 1 LCD 128×128
- 1 Buzzer 5V
- 3 Buttons
- Enough wires

Physical Project



Software Design
Libraries used

- <Wire.h>
- <Adafruit_GFX.h>
- <Adafruit_SSD1306.h>

Code for the project

gameboy_rizon_teodor.rar

Conclusions

Putting together a small gameboy was really fun. I managed to understand more about microprocessors and how the old gameboy worked. I can say that I have learned a lot by doing this project.

Journal

- 01.05.2023 - Initial Documentation
- 03.05.2023 - Ordered the needed parts
- 10.05.2023 - Started testing
- 28.05.2023 - Finished the project

Resources

- Hardware diagram https://www.circuito.io/
- Arduino IDE https://www.arduino.cc/en/software
- Site for components: https://www.sigmanortec.ro/

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