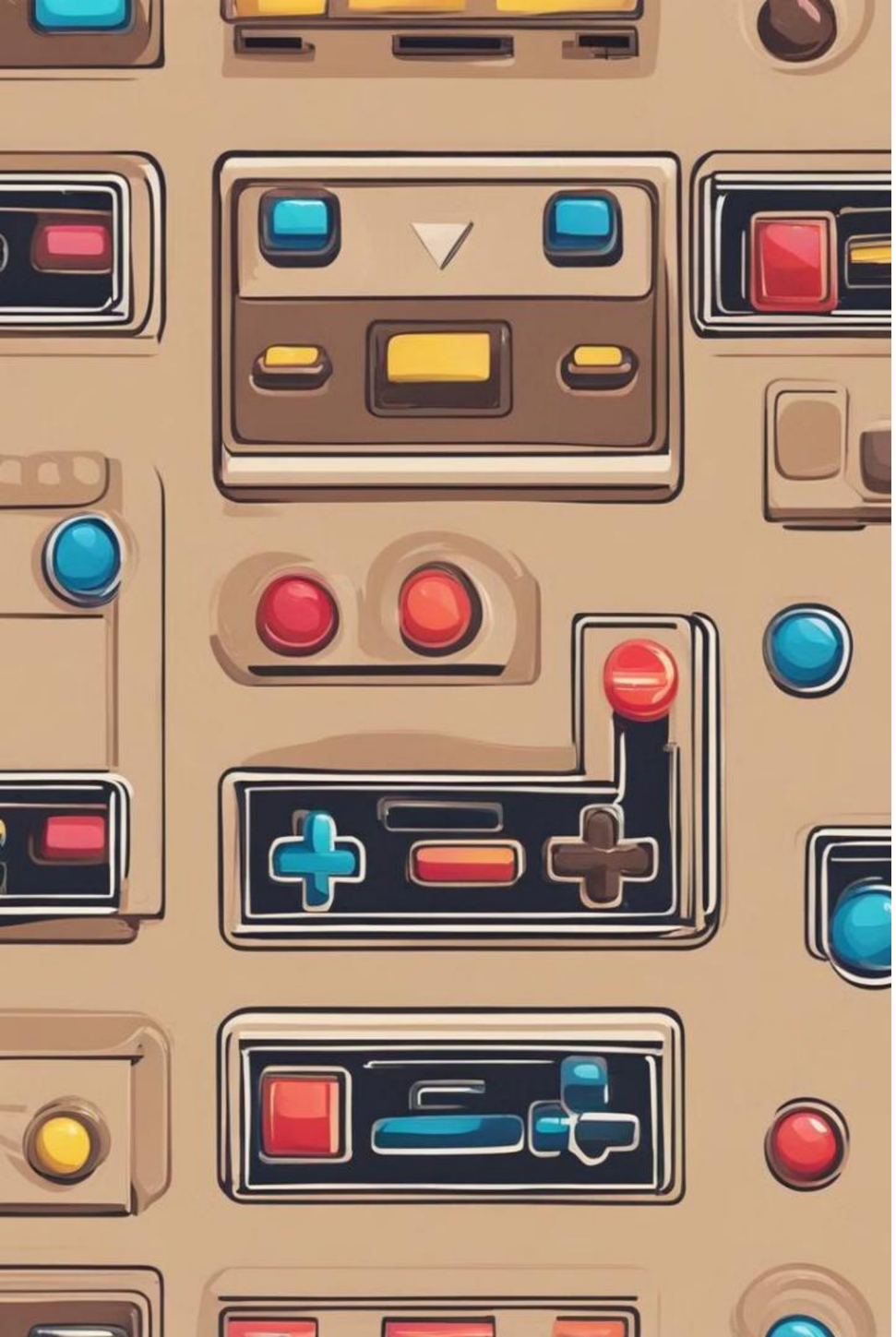

SnakeArcadeGamebox Project

Group-9

Compact entertainment, portable awareness: The Handheld Game Box with Temperature Detection.

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Abstract

This project introduces a handheld game box equipped with temperature detection, catering to the need for portable entertainment and practical utility. Integrating classic gaming with real-time temperature monitoring, it offers a unique blend of fun and environmental awareness. Through innovative technology, this device enhances user experience while promoting awareness of surrounding conditions.

Introduction

In today's fast-paced world, portable entertainment has become increasingly popular. The Handheld Game Box with Temperature Detection offers a unique solution, combining classic gaming with practical temperature monitoring. With its compact design and advanced technology, including IR sensors and servo motors, this device provides users with both entertainment and environmental awareness in a single, innovative package.

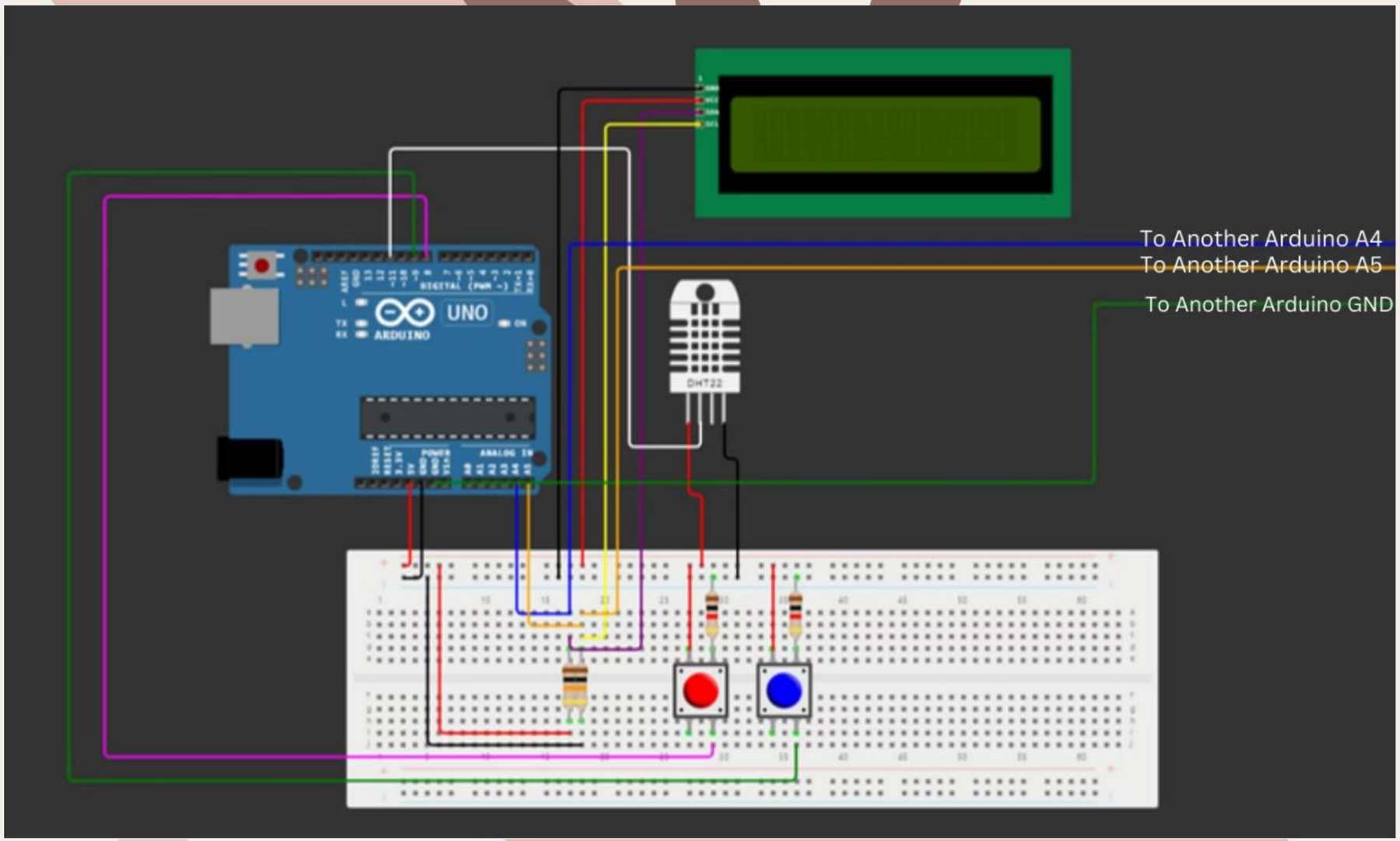
Objectives

1. Develop a versatile and user-friendly Handheld Game Box with Temperature Detection capable of providing immersive gaming experiences and real-time temperature monitoring functionalities.
2. Optimize space utilization within the device to ensure efficient allocation of components and maximize usability for users.
3. Enhance user experience by implementing intuitive controls and a clear interface, allowing for seamless navigation between gaming and temperature monitoring modes.
4. Minimize environmental impact by promoting awareness of surrounding conditions through accurate temperature readings and user-friendly displays.
5. Integrate sensors and actuators to ensure precise temperature detection and management, providing users with reliable and actionable data.
6. Continuously monitor and improve the performance of the Handheld Game Box through regular testing and refinement processes to ensure robustness and reliability.

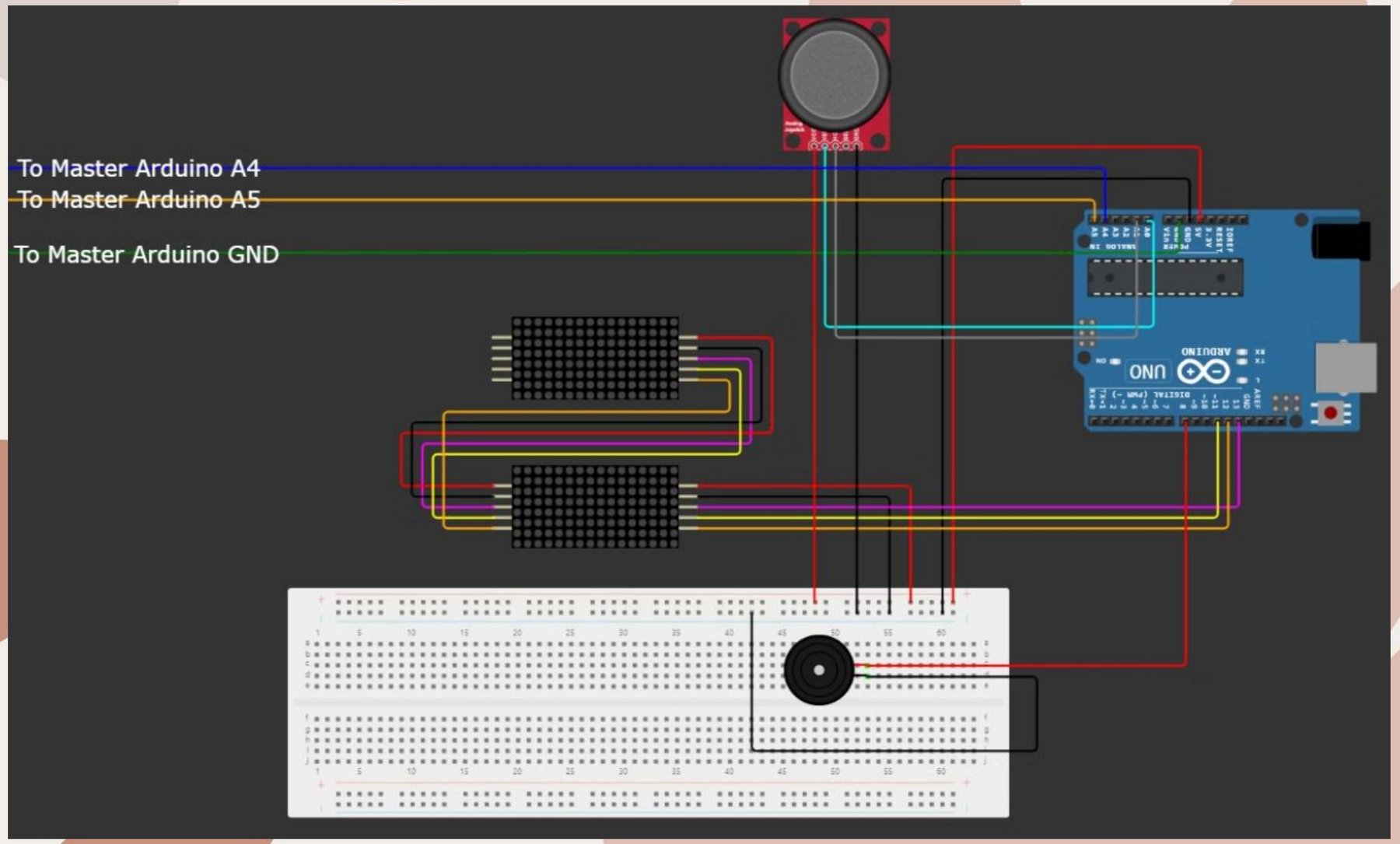
Components

Sr. No	Electronic Components	Quantity
1	Arduino Uno	2
2	LCD 16×2(I2C)	1
3	16×16 dot matrix display with MAX7219 module	1
4	Button	2
5	Buzzer	1
6	Rocker Switch	2
7	Jumper Wires	-
8	Resistors	5
9	DHT22 Sensor	1
10	Analog JoyStick	1
11	Red LED	1

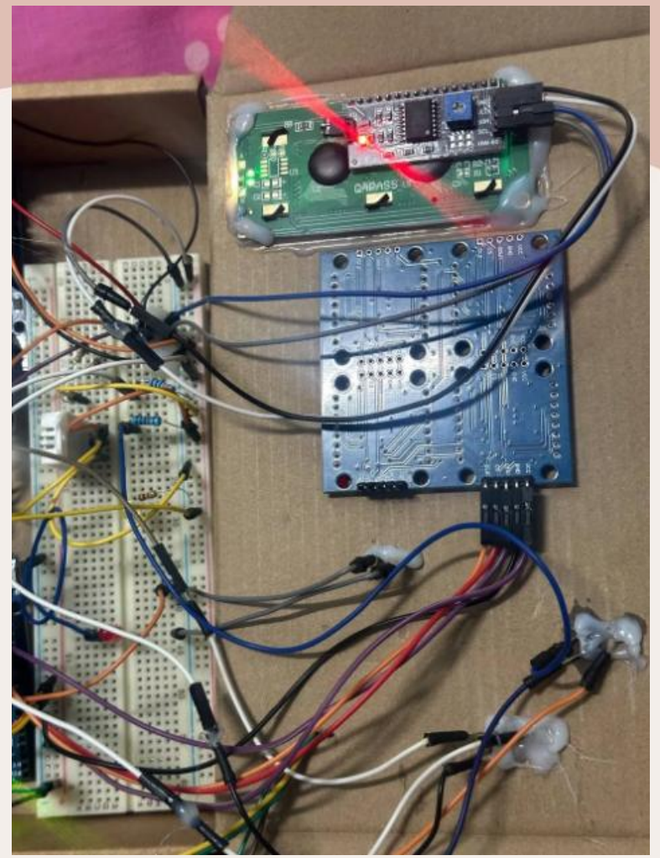
Circuit Diagram for Master Arduino

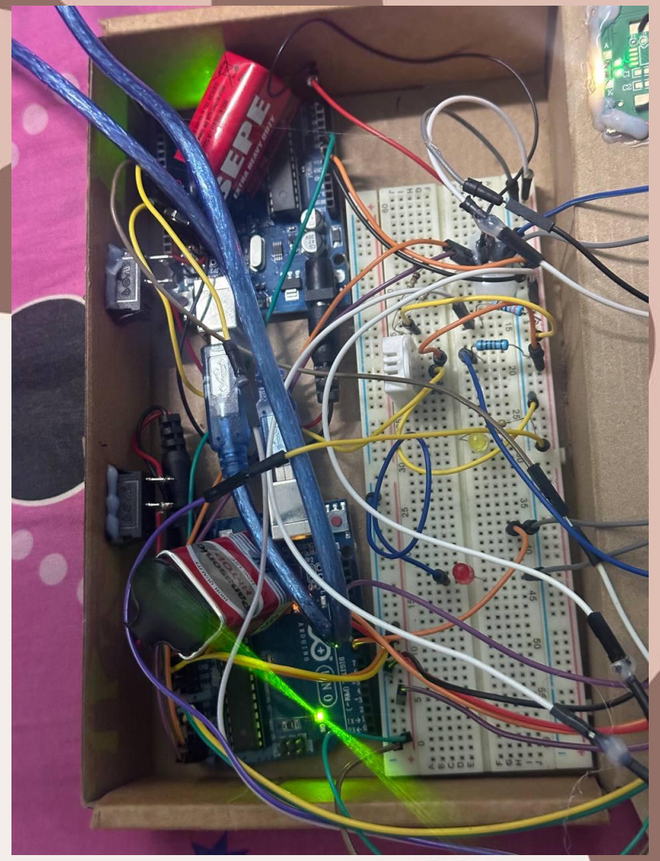


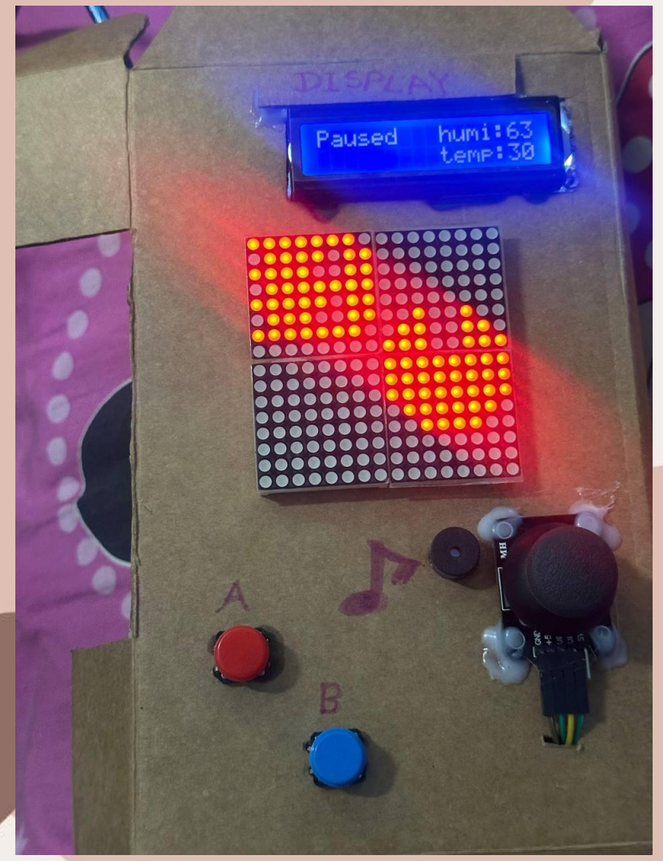
Circuit Diagram for Slave Arduino



Project Design







Implementation

The Handheld Game Box with Temperature Detection integrates essential components: Arduino microcontroller, LCD display, temperature sensor, control buttons, and LED indicators. Wiring enables seamless functionality, showcasing Snake game scores and real-time temperature readings on the LCD. Control buttons and LED indicators offer user interaction and visual cues. Arduino IDE programming incorporates game logic, temperature monitoring, and user interaction algorithms. Rigorous testing ensures proper functionality. The device offers portable entertainment and environmental monitoring. Regular maintenance sustains reliability.

Programming the Snake game

Game Logic

Write code to manage the movement, growth, and collision detection of the snake.

User Interface

Design the interface for game controls, score display, and level progression.

Gameplay Mechanics

Implement the game rules, speed adjustments, and win/lose conditions.

Testing and troubleshooting

1

Functional Testing

Test the game's performance, controls, and interaction with different scenarios.

2

Troubleshooting

Address any issues with wiring, coding errors, or component malfunctions.

3

Enhancements

Refine the experience by adjusting gameplay, controls, or visual aspects based on testing feedback.

Advantages

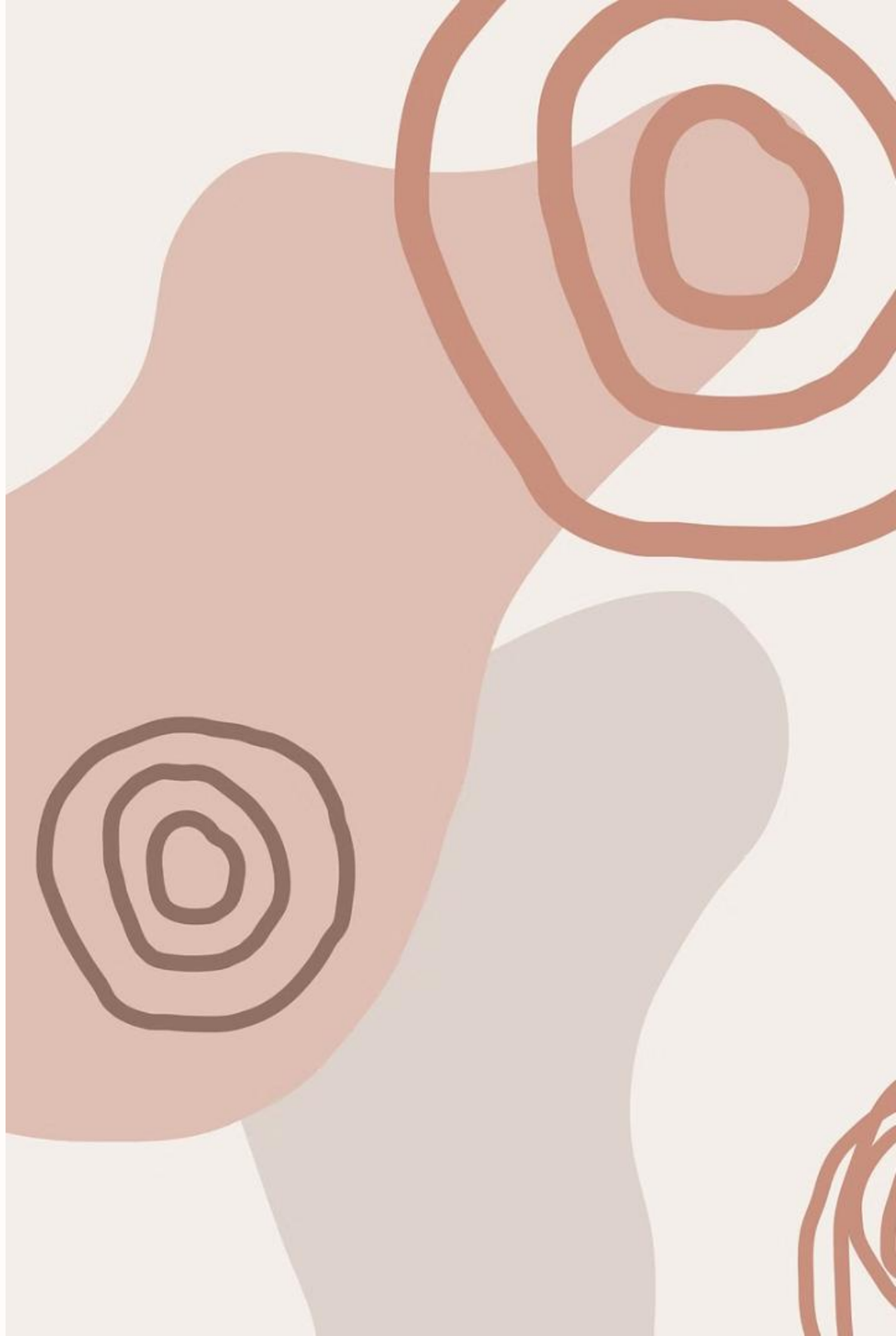
1. Compact Design: The Handheld Game Box with Temperature Detection offers a portable and space-efficient solution, ideal for on-the-go entertainment and environmental monitoring.
2. Dual Functionality: Users benefit from both gaming entertainment and real-time temperature detection in a single device, maximizing utility and convenience.
3. Enhanced User Experience: With classic Snake gameplay and temperature monitoring features, users enjoy immersive entertainment while staying informed about their surroundings.
4. Environmental Awareness: The device promotes environmental consciousness by providing real-time temperature readings, empowering users to make informed decisions about their surroundings.
5. Portability: Its compact size and lightweight design make the Handheld Game Box easily transportable, allowing users to enjoy entertainment and monitor temperature wherever they go.

Limitations

1. Limited Game Selection:
    - The Snake Arcade Game Box may offer only a single game option, limiting user variety and long-term engagement compared to consoles with broader game libraries.
2. Screen Size Constraints:
    - The compact nature of the device may result in smaller screen sizes, potentially reducing visibility and gameplay immersion compared to larger gaming consoles or computer monitors.
3. Lack of Multiplayer Functionality:
    - Due to its handheld nature, the device may not support multiplayer gaming experiences, limiting social interactions and collaborative play opportunities.
4. Limited Temperature Monitoring Range:
    - The temperature sensor integrated into the device may have a restricted monitoring range, limiting its effectiveness in detecting temperature fluctuations across larger areas or varying environments.
5. Battery Life Dependency:
    - The device's portable nature means it relies on battery power, potentially leading to shorter gameplay sessions and frequent recharging compared to plugged-in gaming systems.

Conclusion

Throughout this project, we've showcased the Handheld Game Box with Temperature Detection, blending entertainment and environmental awareness. Its integration of classic Snake gameplay with real-time temperature monitoring reflects its versatility. While a significant advancement, further refinement is possible. As technology evolves, our device aims to be a must-have companion, offering convenience and benefits in various settings.



Thank You For Your Attention

We sincerely appreciate your time and attention throughout this presentation. We hope you found it informative and engaging. If you have any questions or would like to discuss further, please don't hesitate to reach out to us. Thank you again for being a part of this session.