TÉCNICO LISBOA

HDEC

HANDHELD DIGITAL EMULATING CONSOLE

ELECTROCAP-PITCH DECK

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MEET OUR TEAM

JOÃO DUARTE

BERNARDO PENELA

MIGUEL FERNANDES

JOÃO PEQUENO

GONÇALO ANTUNES

LUCAS LEIRADELLA

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PROBLEM/SOLUTION DEFINITION

PROBLEM

Videogame preservation is in a grim state, with many games lacking legal means of being played outside of the original hardware, which is increasingly hard to find and maintain.

SOLUTION

Our console offers a faithful to original and easily repairable alternative, and it’s also portable, allowing you to play anytime, anywhere.

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SOLUTION BENEFICIARIES

The ones who benefit from our product would be all people who like relatively older games. This product could also be appealing to younger people who might be slightly interested in LEE/LEEC courses but aren't quite sure yet.

COMPETITORS AND PREVIOUS WORK

01 MAIN COMPETITORS

Analogue Pocket

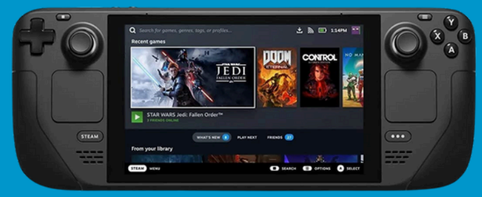
Disadvantages

- Only physical copies of the games are supported.
- Often out of stock.

02 SECONDARY COMPETITORS

Nintendo Switch

Steam Deck



Disadvantages

- Using software instead of hardware emulation may lead to emulation glitches or performance issues.

RESULTS

CONSOLE MODULATION

- Desing and build an acrylic case for the console and other two for the controllers
- Modulate a mechanism that can detached the controllers from the console

CONTROLLERS

- Implent bluetooth controllers
- Connect the controllers to the FPGA and play games with no delay
- Make a PCB

CONSOLE

- We’re able to implent diferent cores
- Create a custom menu
- External Video
- Due to the display delay shipment, we weren’t able to finish assembling of the console. We hope it will arrive before the Demo day

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CONTRIBUTION OF EACH MEMBER

JOÃO DUARTE

-Making the Website
-Blog Writing
-Controller's PCB CAD making
-Controller's PCB physical making

BERNARDO PENELA

-Video and Audio setup
-HDMI Multiplexer
-Creating the Video

MIGUEL FERNADES

-Initial FPGA core setup and testing
-Battery research
-MiSTer FPGA UI Customization
-Creating the poster
-Creating the form

JOÃO PEQUENO

-Tried Native FPGA handling of the controller
-Mister FPGA code
-Bluetooth controllers

GONÇALO ANTUNES

-Battery research
-3D Modeling and Design

LUCAS LEIRADELLA

-Mister FPGA code
-Bluetooth controllers
-Video

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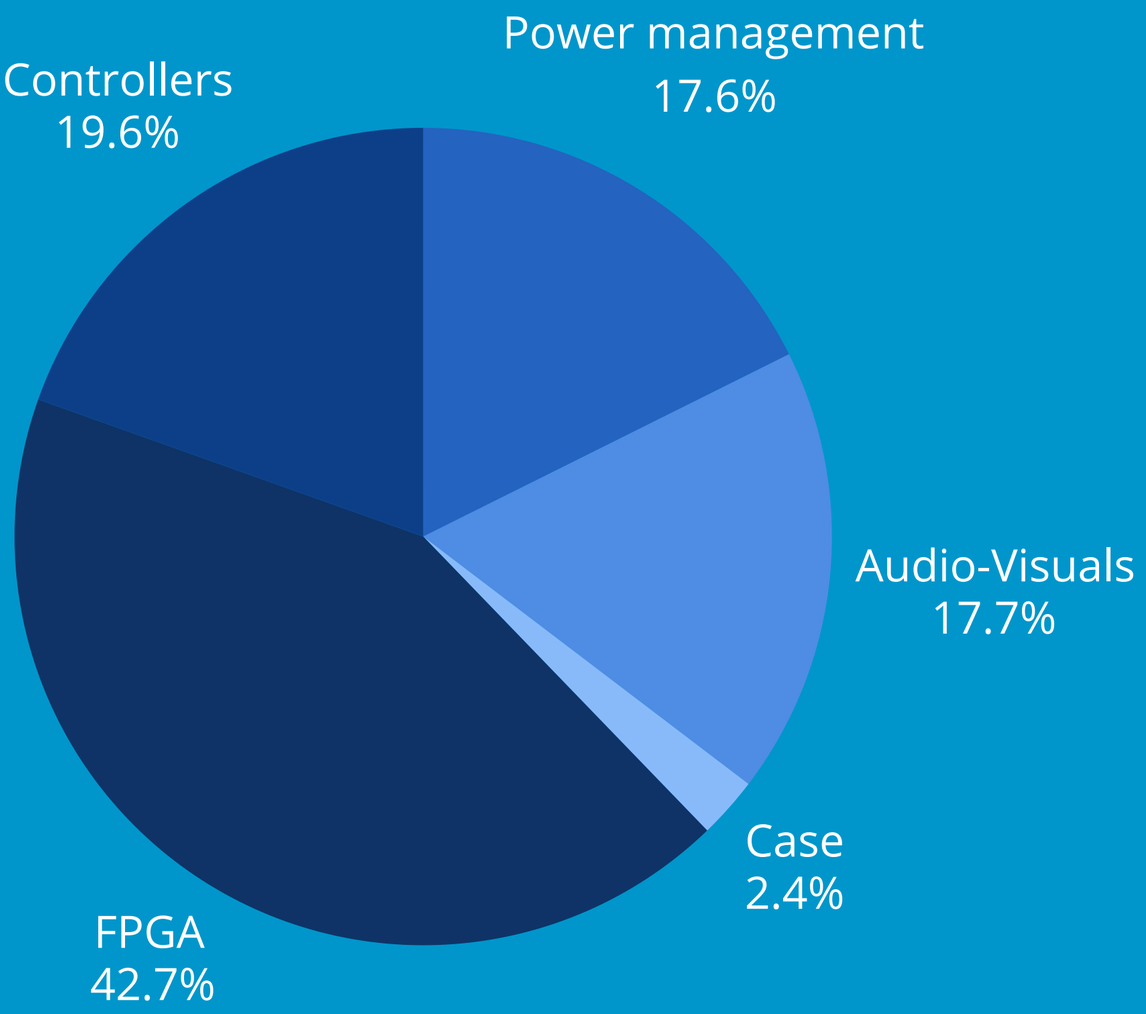
PROJECT COST

ON THIS PROJECT WE SPENT AROUND 391.96€



BENEFITS

PORTABILITY

The main benefit of this console is portability. You can play whenever and wherever you want.

GAME DIVERSITY

The console can be home to many games of many different old-school consoles!

GAME FIDELITY

Because of the use of FPGA technology, our console can emulate the original console's hardware via it's own hardware and not through software like the ones you can find on your phone or PC.

CONNECTIVITY AND MODERN FEATURES

Our console can be charged via USB-C, your everyday charging connector! We have an external audio output via a 3.5mm Jack connector and external video so you can play on bigger screens! The controllers can be detached from the console!

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FOR MORE INFO CHECK OUR WEBSITE

LandingPage

https://joaoffduarte.github.io/Handheld_Emulating_Project/

Blog

https://joaoffduarte.github.io/Handheld_Emulating_Project/changelog.html

Video

https://drive.google.com/file/d/1YJtiJFvD7FxDGd7YYQzUGxpI2B7UW_x3/view