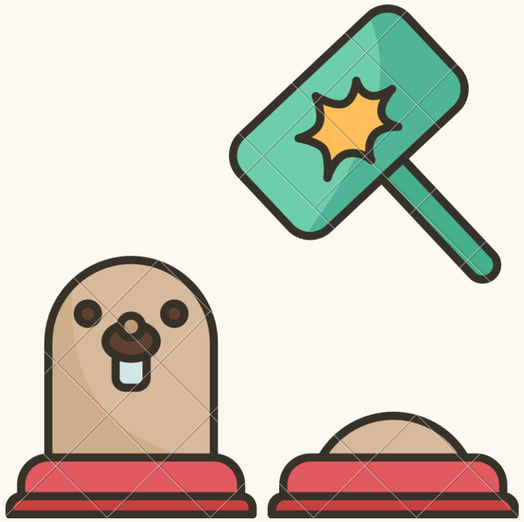
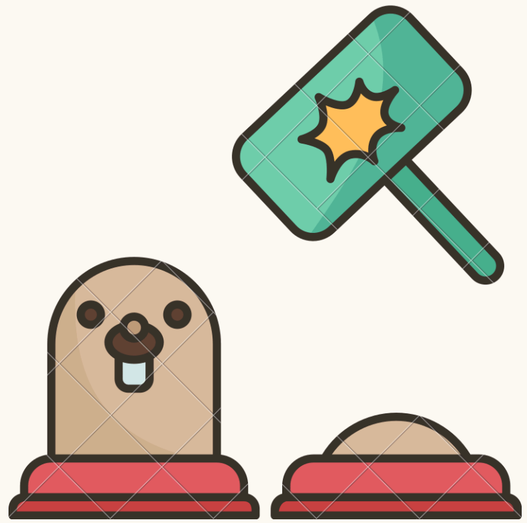
WACK A MOLE!



by Beesan Demaide & Ibtisam Kharrosheh

Supervised by: Dr.Sufyan Samara

WACK A MOLE!



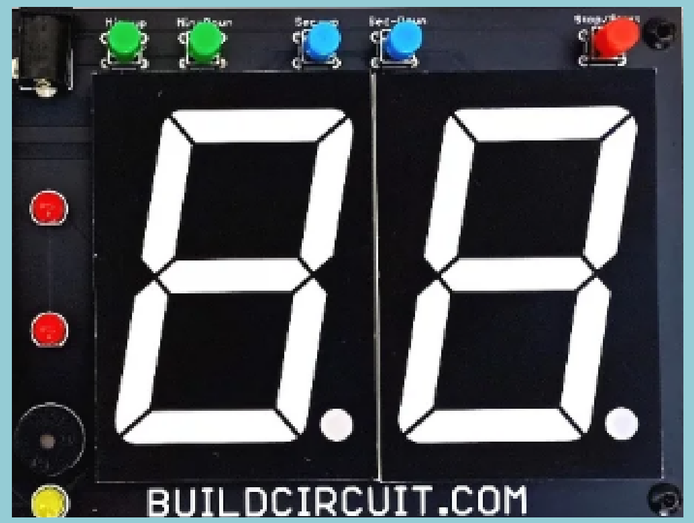
Why This Project?

- The Problem:
- Traditional games often lack interactivity and engagement.

- Our Goal:
- To create an enjoyable game that combines technology with fun, making it interactive and educational.

FEATURE OF GAME

Interactive Gameplay



Score Display

Level Selection

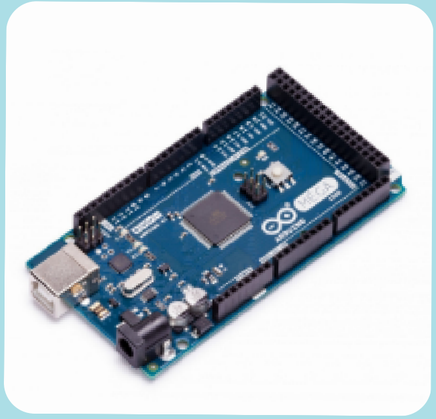
FEATURE OF GAME

water splash

speaker

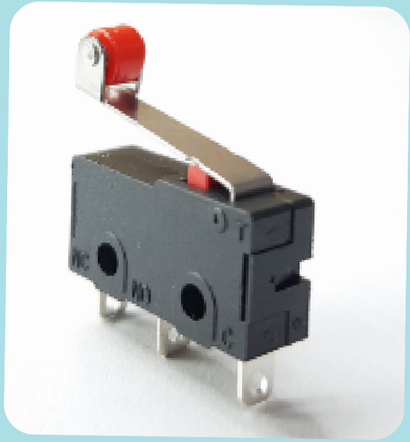
GAME BODY

COMPONENTS



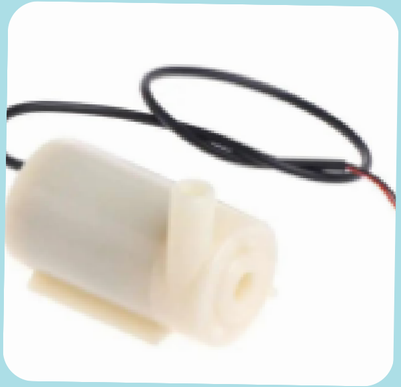
ARDUINO MEGA

PISTON AIR

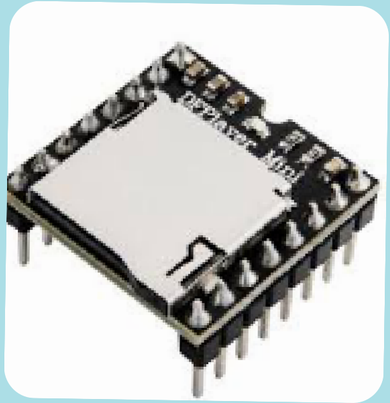


LIMIT SWITCH

KEYPAD

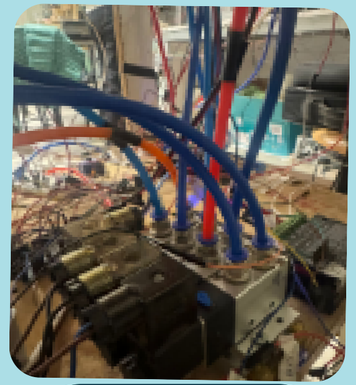


PUMP



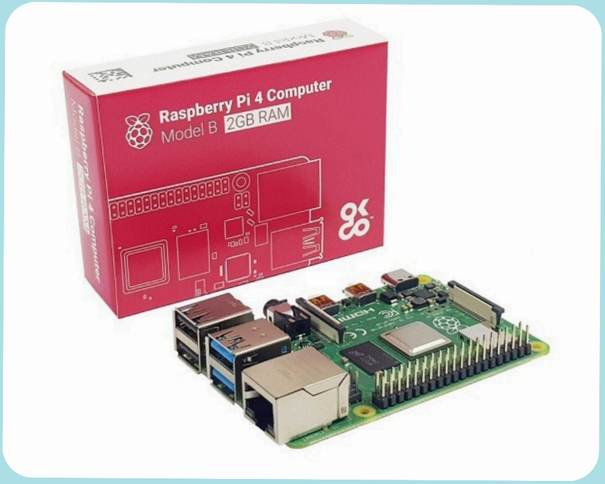
DF PLAYER

SEVEN SEGMENT

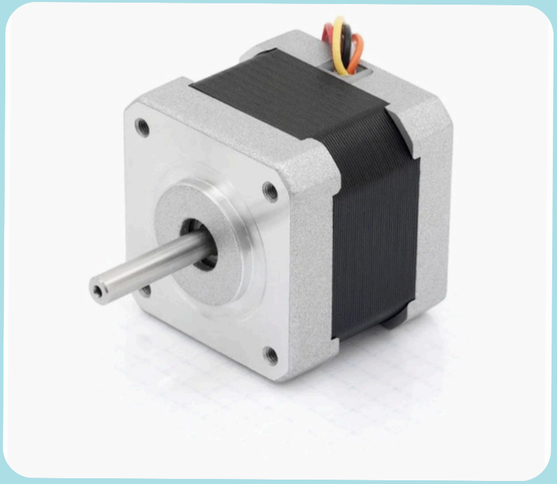


SELECTOR SWITCH

ARM COMPONENTS



RASPHERRY

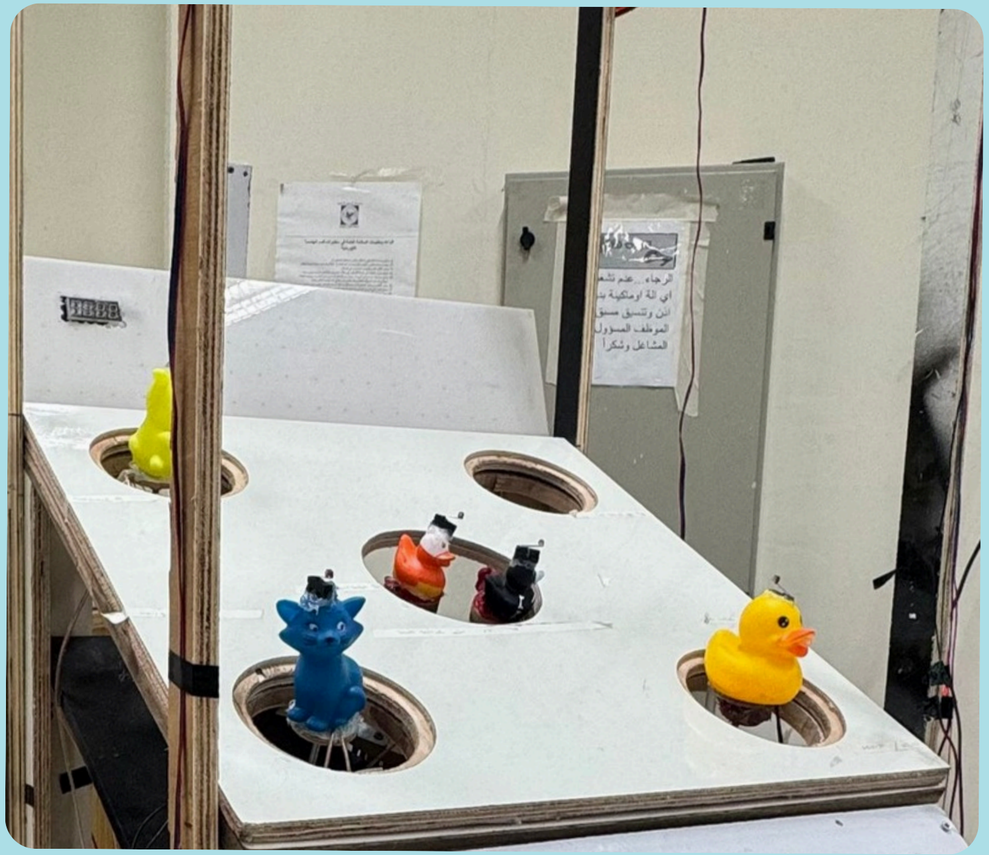


MOTORS

OAK-CAMERA

DRIVER

INSTRUCTIONS



We added duck swapping to increase difficulty.
Both ducks emerge
from the same exit—
hitting the black duck decreases the score by 10,
while hitting the orange duck increases it.

INSTRUCTIONS

Selecting the Mode:

- Mode 6 – User Gameplay

  Choose the Level:

  Level 1 🐢 → Slow speed, 1-minute timer .
  Goal: Collect 50 points to move to Level 2.
  Level 2 ⚡ → High speed, 20-second timer.
  Goal: Collect 110 points to move to Level 3.
  Level 3 🔥 → Fastest speed and shorter time

- Mode 7 – Robotic Arm Gameplay

🤖 If you choose Mode 7, the robotic arm will play automatically based on detected colors.

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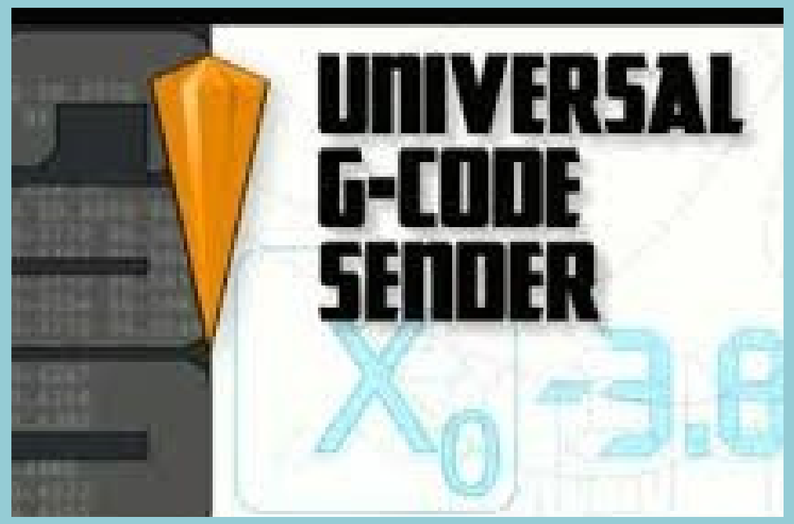
Software and Technologies Used:

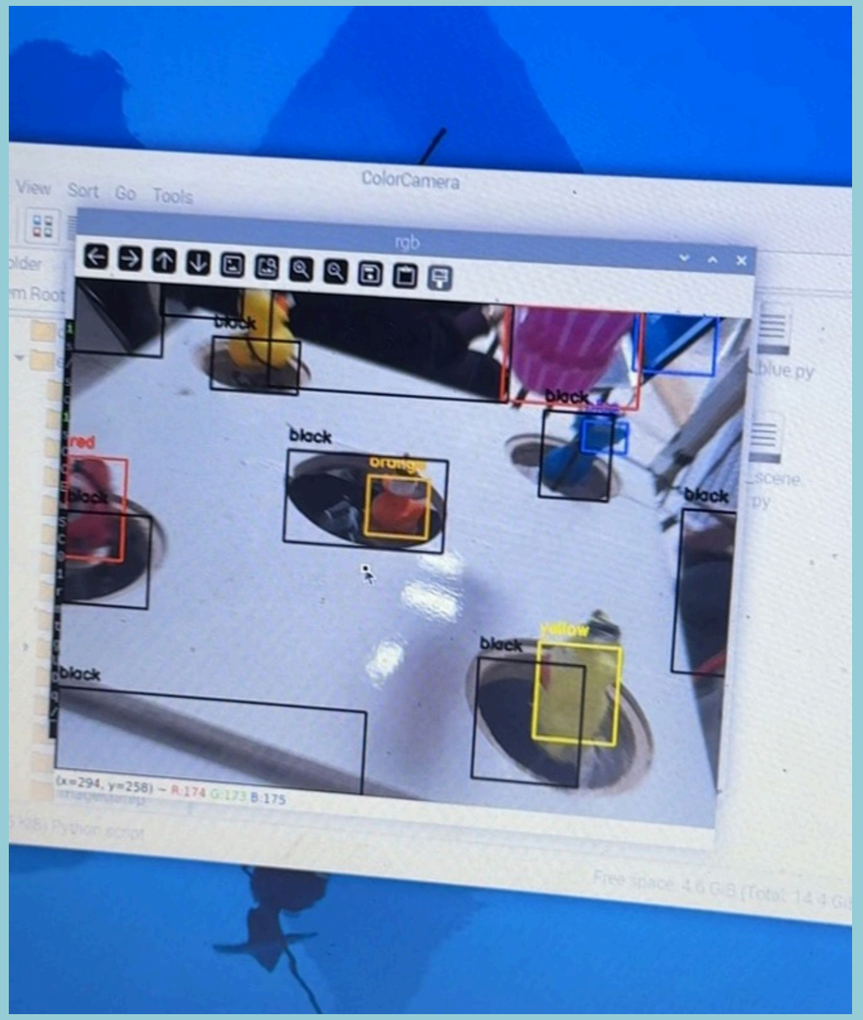


Universal G-Code Sender(UGS)

Software and Technologies Used:

Python & C++

Software and Technologies Used:



OpenCV (for image processing)

CHALLENGES & LIMITATIONS!

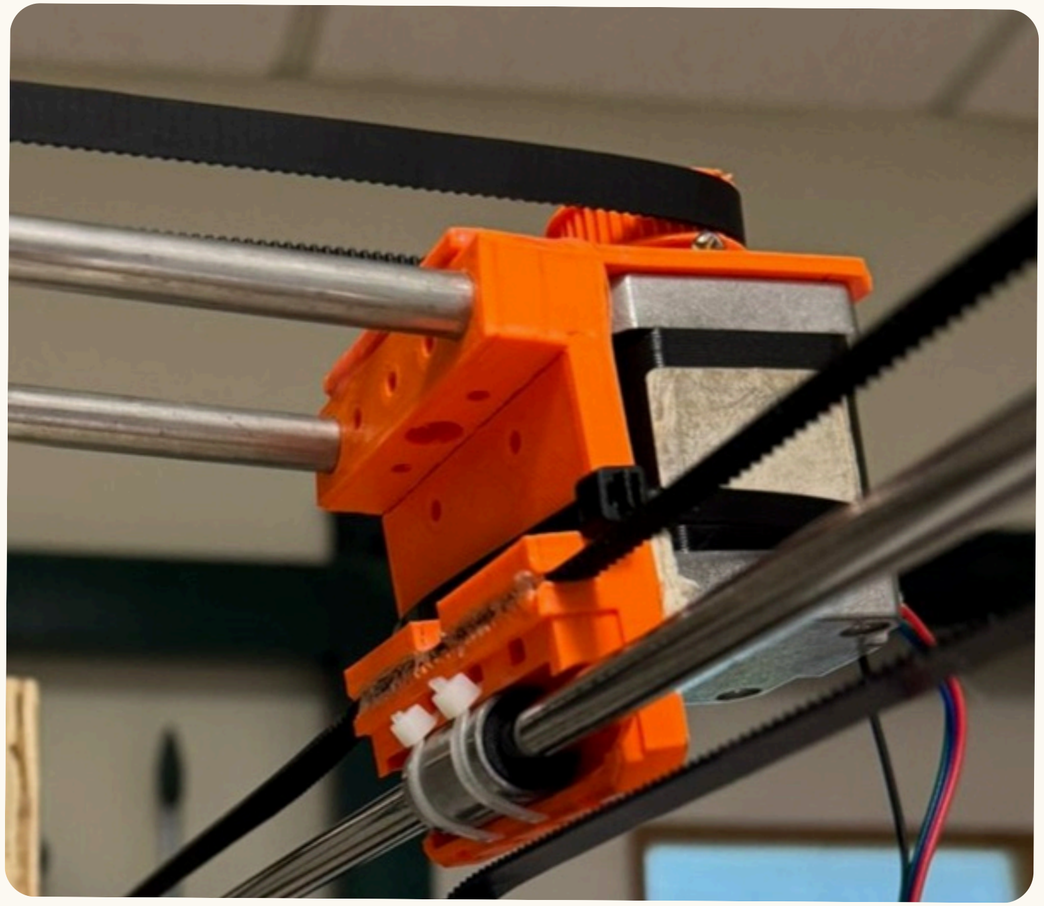
1- Difficulty in Sticking the Moles

CHALLENGES & LIMITATIONS!

2- Difficulty in Sticking the Moles

CHALLENGES & LIMITATIONS!

3- The impact of the strike is extremely powerful.

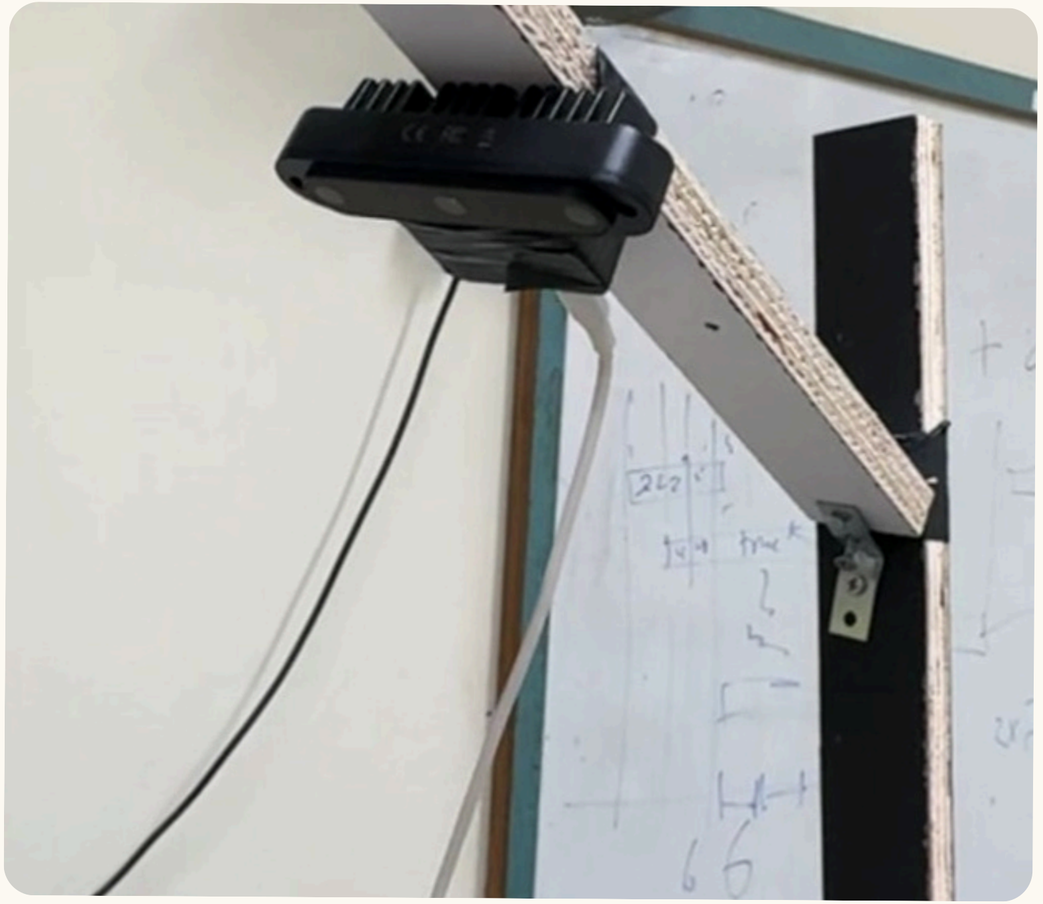


CHALLENGES & LIMITATIONS!

4- Slow Arm Movement

CHALLENGES & LIMITATIONS!

5- Lighting Variations Affecting Image Processing



FUTURE IMPROVEMENTS

- Optimizing Performance
  Enhance game speed and efficiency for smoother play.
- Advanced Mole Detection:
  Improve mole detection accuracy in low-light conditions.
- Dynamic Target Movement:
  Implement unpredictable movement for more challenge.

FUTURE IMPROVEMENTS

- **Smarter AI:**
  Upgrade AI for adaptive and increasing difficulty.

- **Game Expansion:**
  Support additional game types, including AR games.

THANK YOU

Do you have any questions?