Snakes and Ladders Game

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Contents

INTRODUCTION

Our project is an automated version of the classic board game, Snakes and Ladders. We created a system that eliminates cheating and enhances gameplay with automated dice rolling, player movement, and real-time interactions.

Objectives

01

Prevent cheating by automating the game.

02

Ensure easy gameplay for all ages.

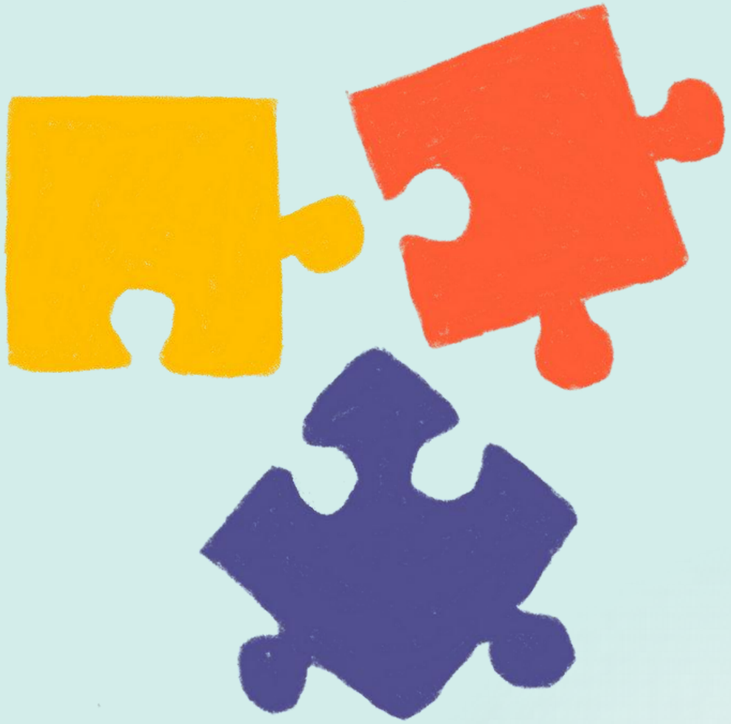
03

Develop a system suitable for public installation.

04

Provide an engaging experience using sound and light effects.

IMPLEMENTATION



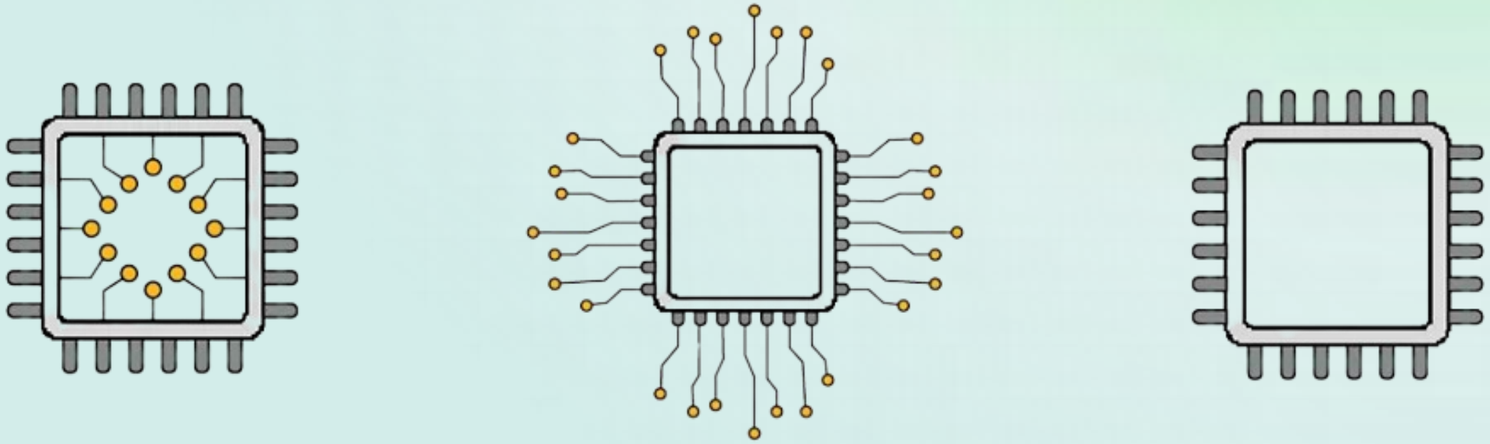
Features

Magnetic CNC system to move player pieces

Camera-based Dice Recognition

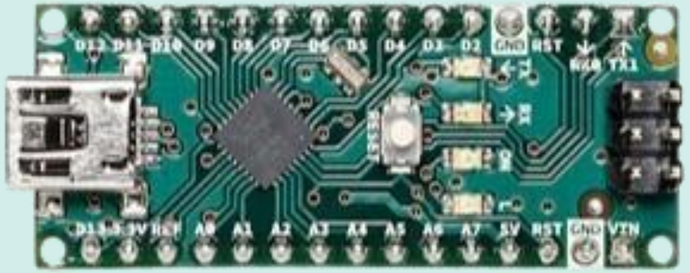
Enhanced User Interaction (Lights and music)

HARDWARE COMPONENTS



Microcontrollers

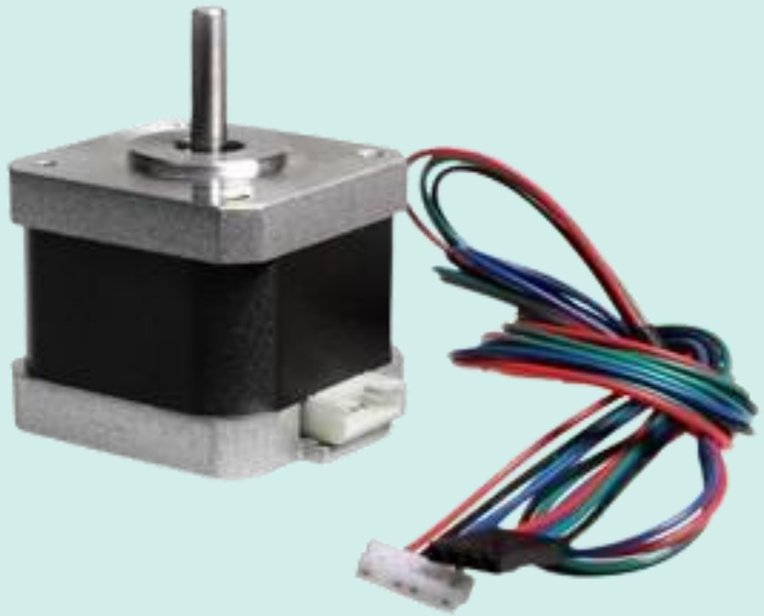
Arduino Mega



Arduino Nano

Raspberry pi 4

Motors and Drivers



Stepper Motor

YS-DIV268N Driver

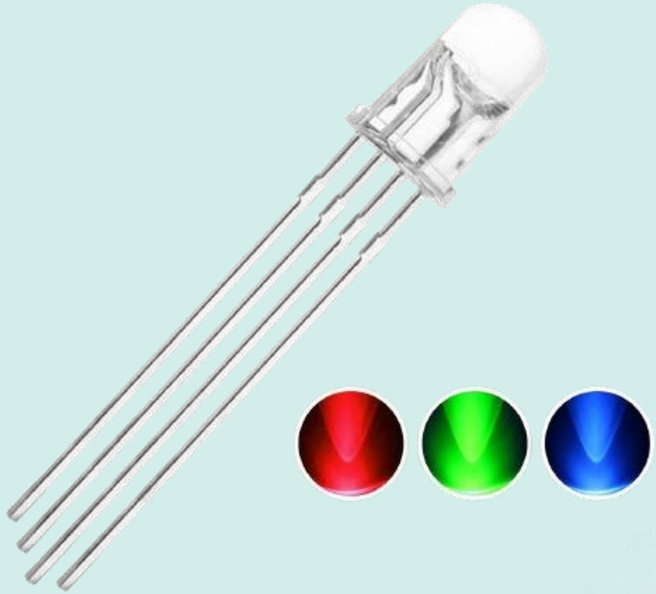
Motors and Drivers

DC Motor

H-bridge

Sensors

IR sensor



RGB Led

Other Components

Keypad

LCD

Other Components

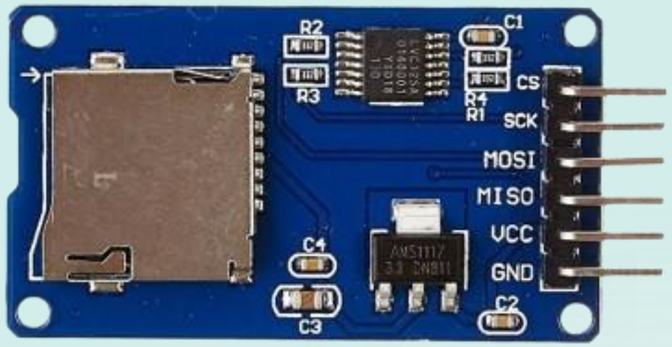
Power Supply

Buck Converter

Other Components

Webcam

Speakers



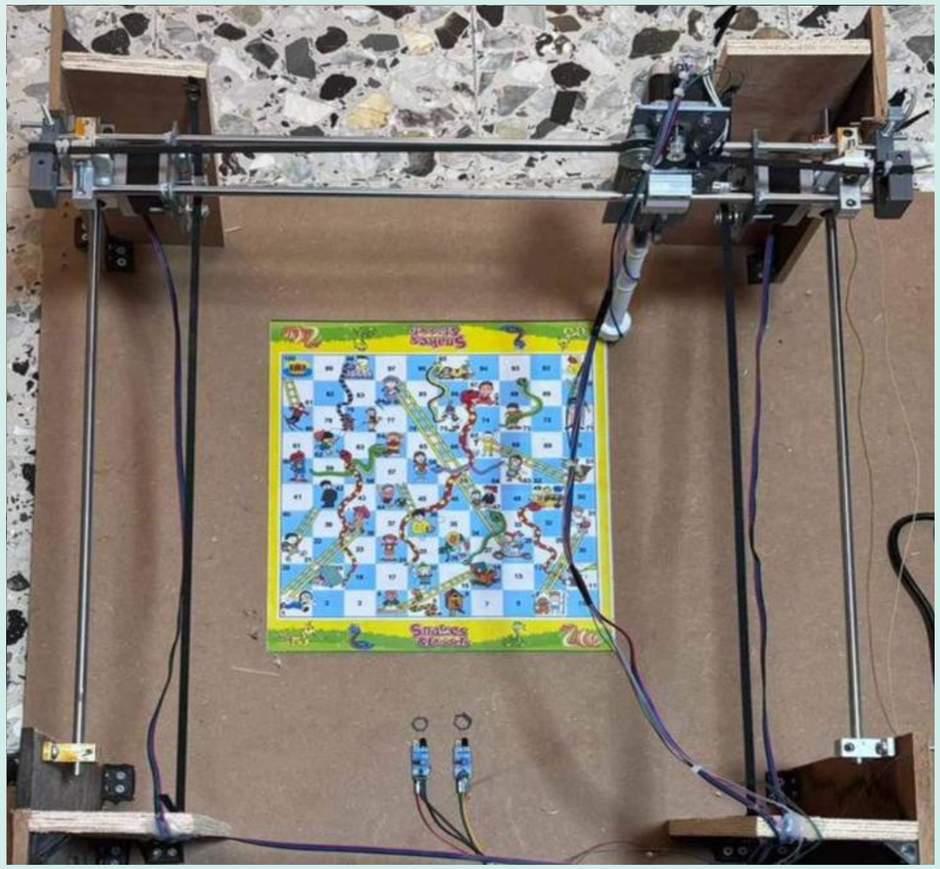
SD Card

Other Components

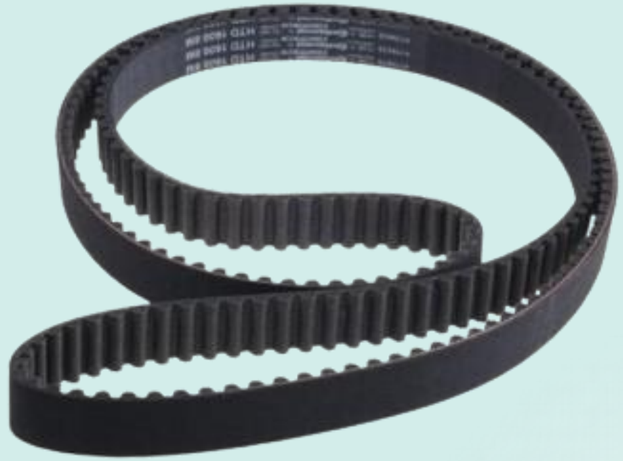
Wires

Intercom wires

Other Components



Stainless steel rods,
3d printed parts and biel



Timing belt

CONSTRAINTS

01 High cost of CNC systems.

02 Difficulty handling when two players land on the same square.

Future Work

- Improving the CNC mechanic, so it moves smoothly without needing to return to the starting point after each move.
- Make the size of the game board dynamic.
- Adding a paid system to play for money.

Thanks!
Any Questions?