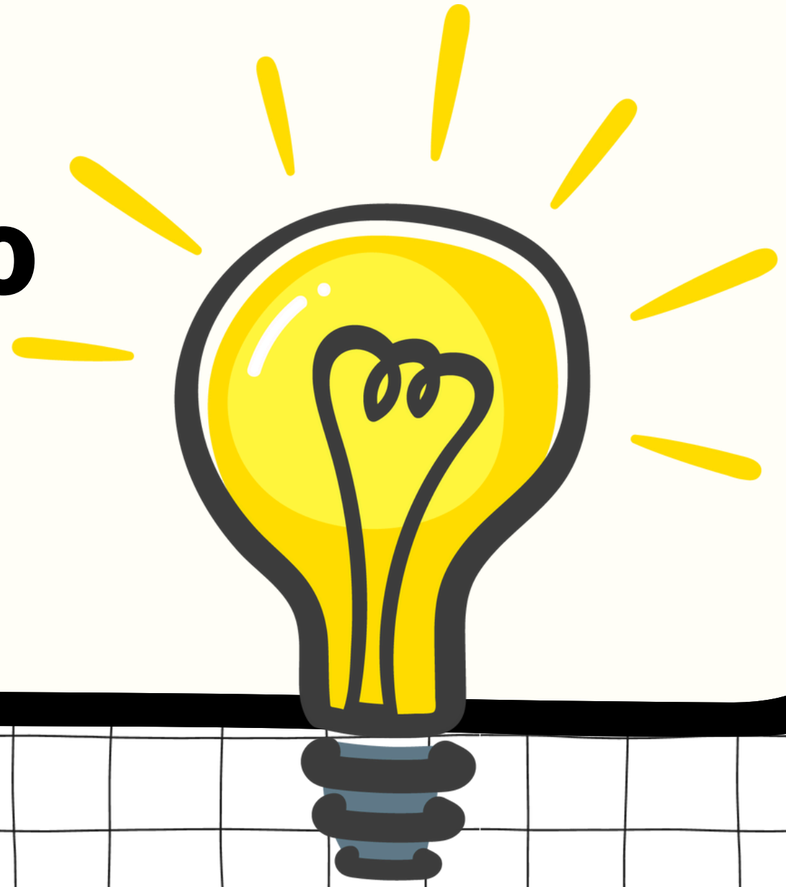
EVENT-Phycathon:2024

Bi Directional Visitor Counter Using Arduino UNO

Code.Innovate.Dominate



Contents

Introduction

The idea behind a bidirectional visitor counter using Arduino is to create a device that can accurately count the number of people entering and exiting a specific area

Main area of focus
Entry DetectionExit Detection
Direction Determination

Applications

•ENTRY DETECTION: WHEN A PERSON ENTERS THE AREA, THE MOTION SENSOR AT THE ENTRANCE DETECTS MOVEMENT. THE PROGRAM INCREMENTS THE VISITOR COUNT.

•EXIT DETECTION: WHEN A PERSON EXITS THE AREA, THE MOTION SENSOR AT THE EXIT DETECTS MOVEMENT. THE PROGRAM DECREMENTS THE VISITOR COUNT.

•Retail Stores:

Customer Footfall: Track the number of customers entering and exiting a store to understand peak hours and optimize staffing.

Visual Indicator: The bulb can light up to visually indicate increased customer activity during busy periods.

•Office Spaces:

Occupancy Monitoring: Count the number of employees present in the office to optimize energy consumption (e.g., HVAC) and allocate resources.

Visual Indicator: A lit bulb can signify a high occupancy level, prompting employees to consider alternative workspaces or adjust their schedules.

•Events and Conferences:

Attendee Counting: Count the number of attendees entering and exiting event venues to assess attendance and manage resources.

Visual Indicator: A lit bulb can signify a large number of attendees, prompting event organizers to provide additional amenities or services.

•Educational Institutions:

Classroom Attendance: Track the number of students entering and exiting classrooms to monitor attendance and identify absenteeism.

Visual Indicator: A lit bulb can indicate a high number of students present, helping teachers adjust their lesson plans or teaching methods.

Brainstorming

Bi-directional movement detection

01 Automates access control

02 Enhances security features, Provides real-time monitoring

03 Supports multiple authentication methods
,Integrates with existing infrastructure

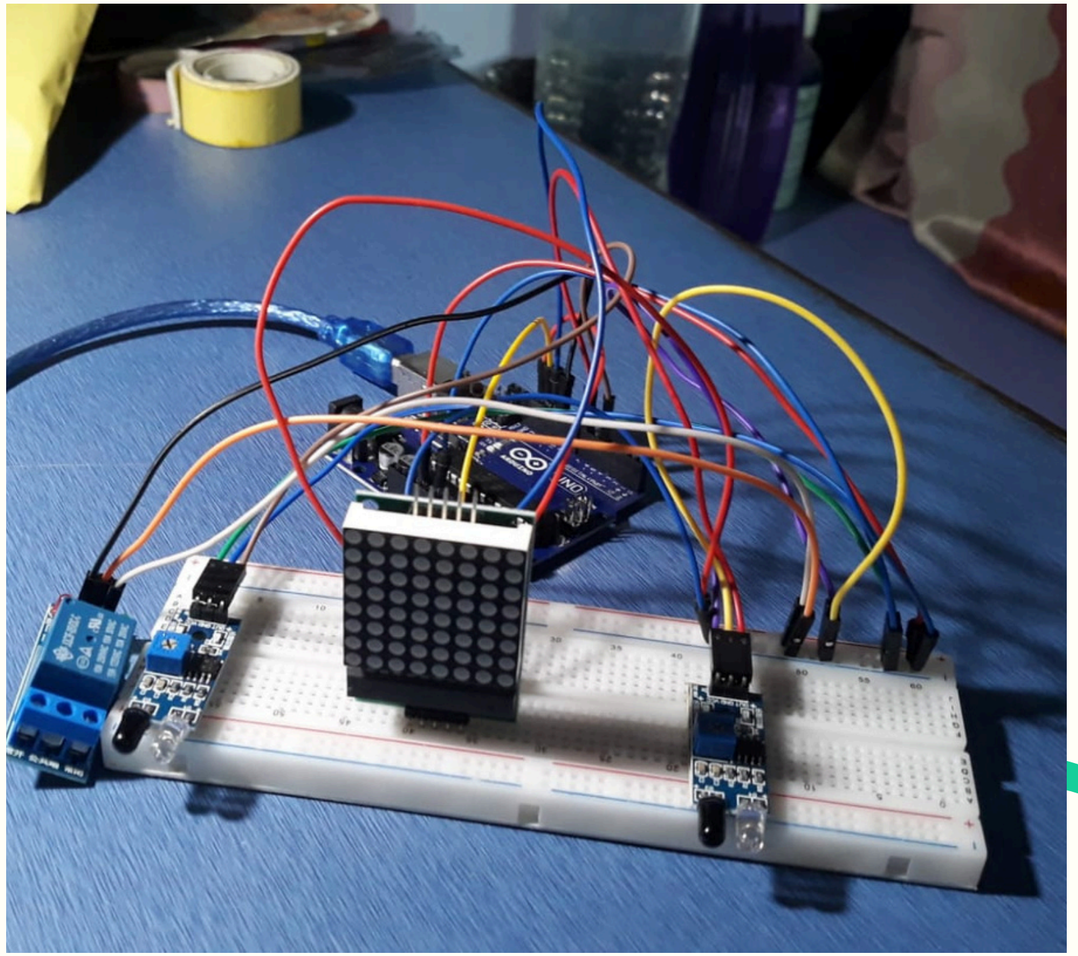
Ensuring security and privacy

Balancing cost and functionality

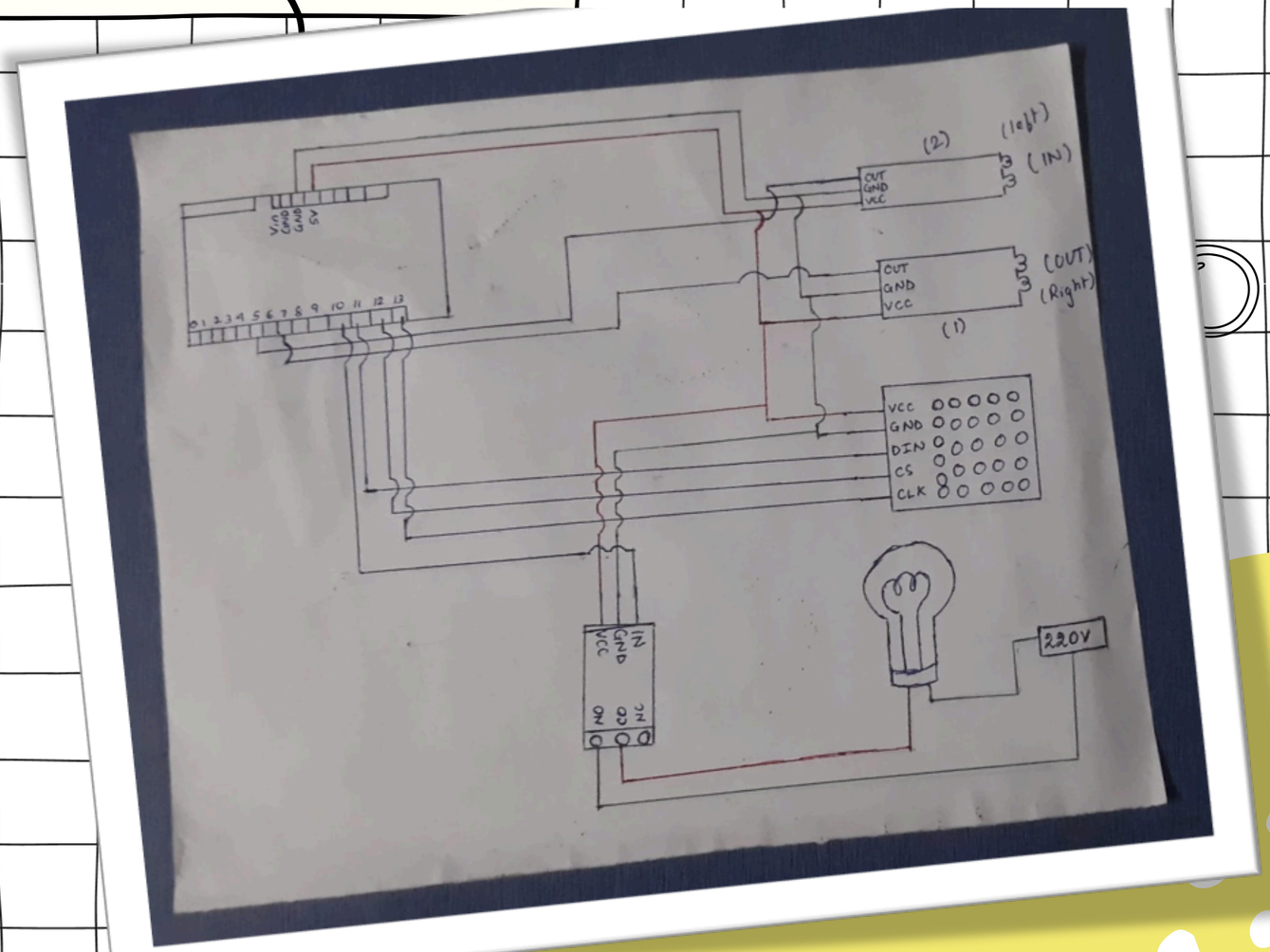
Integrating with existing infrastructure

Overcoming technical complexities

Model Making



Circuit Diagram



Components

1. Arduino Board (e.g., Arduino Uno)
2. IR Sensors (2) for bi-directional detection
3. Counter Display (7-segment or LCD)
4. Relay Module (for gate control)
5. Power Supply (5V or 12V)
6. Breadboard and Jumper Wires

Thank you

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