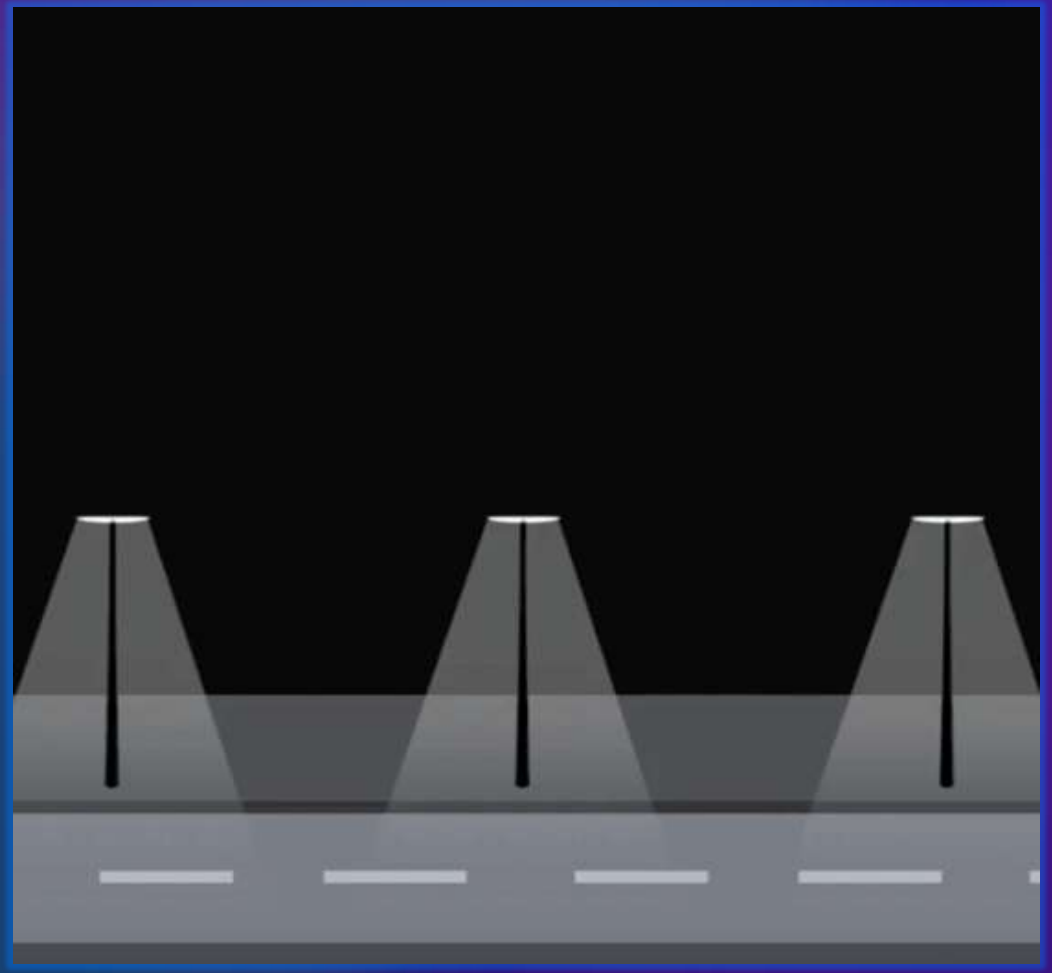
TOPIC: "SOLAR-POWERED INTELLIGENT LIGHTING WITH DYNAMIC INTENSITY CONTROL "



AGENDA

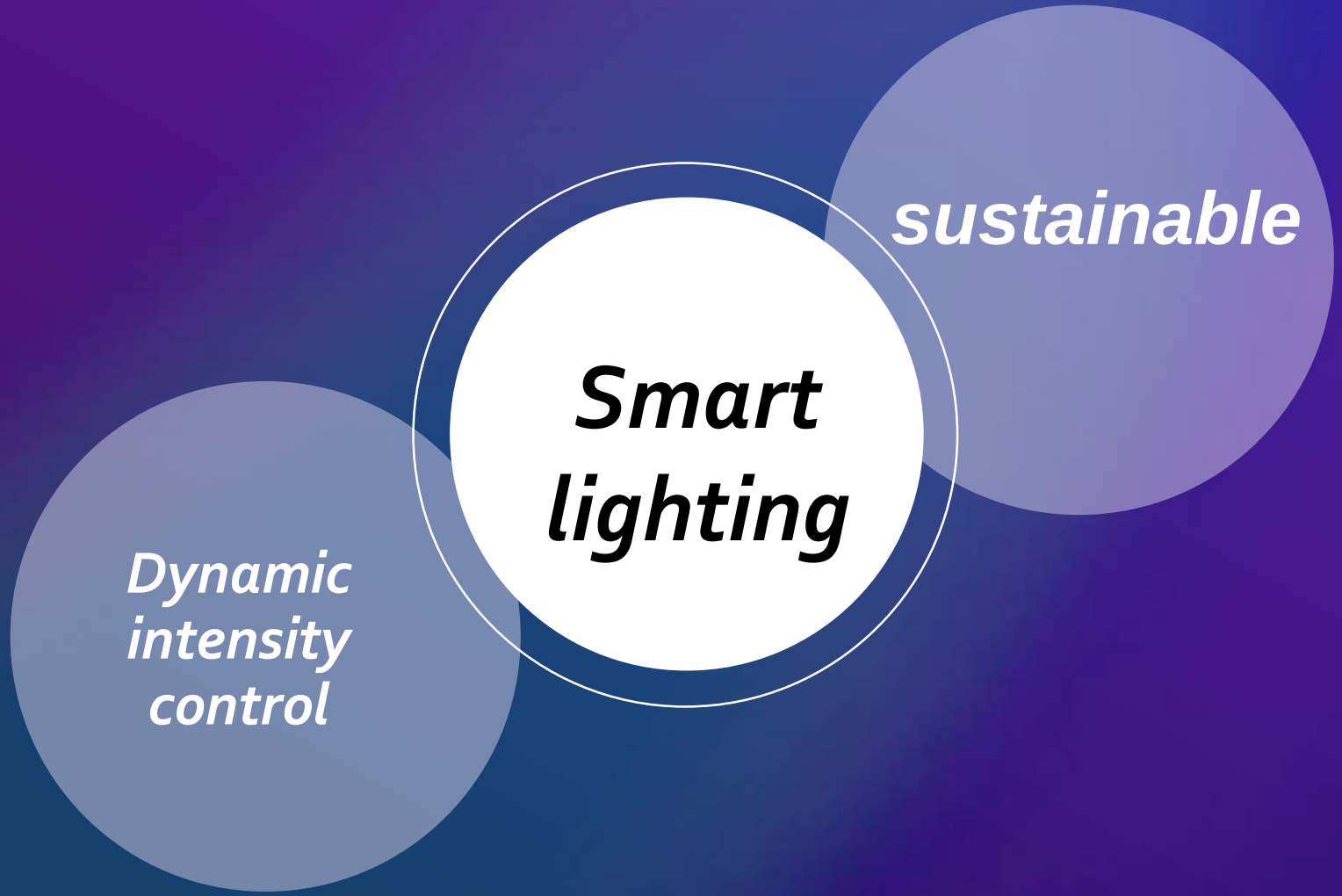
- Introduction
- Problem statement
- Technology stack
- Simulation model
- Design and Methodology
- Uses
- Provided solutions
- Conclusion

Problem statement :

- ✓ Public lighting in roads and public areas are lit even during daytime resulting in the wastage of precious energy.
- ✓ The conventional method being employed is manual switching on and off and in some places, there has been a shift towards timer control for the on-off of public lighting. However, this has not been very effective.
- ✓ System to be simulated by the participants desired outcome: smart public lighting systems, that are centrally controlled by iot would facilitate dynamical adjustment of illumination and provide a record of the consumption. This would dramatically result in lower operating costs and would aid in low downtime of failed lighting systems as the defective locations can be identified

INTRODUCTION

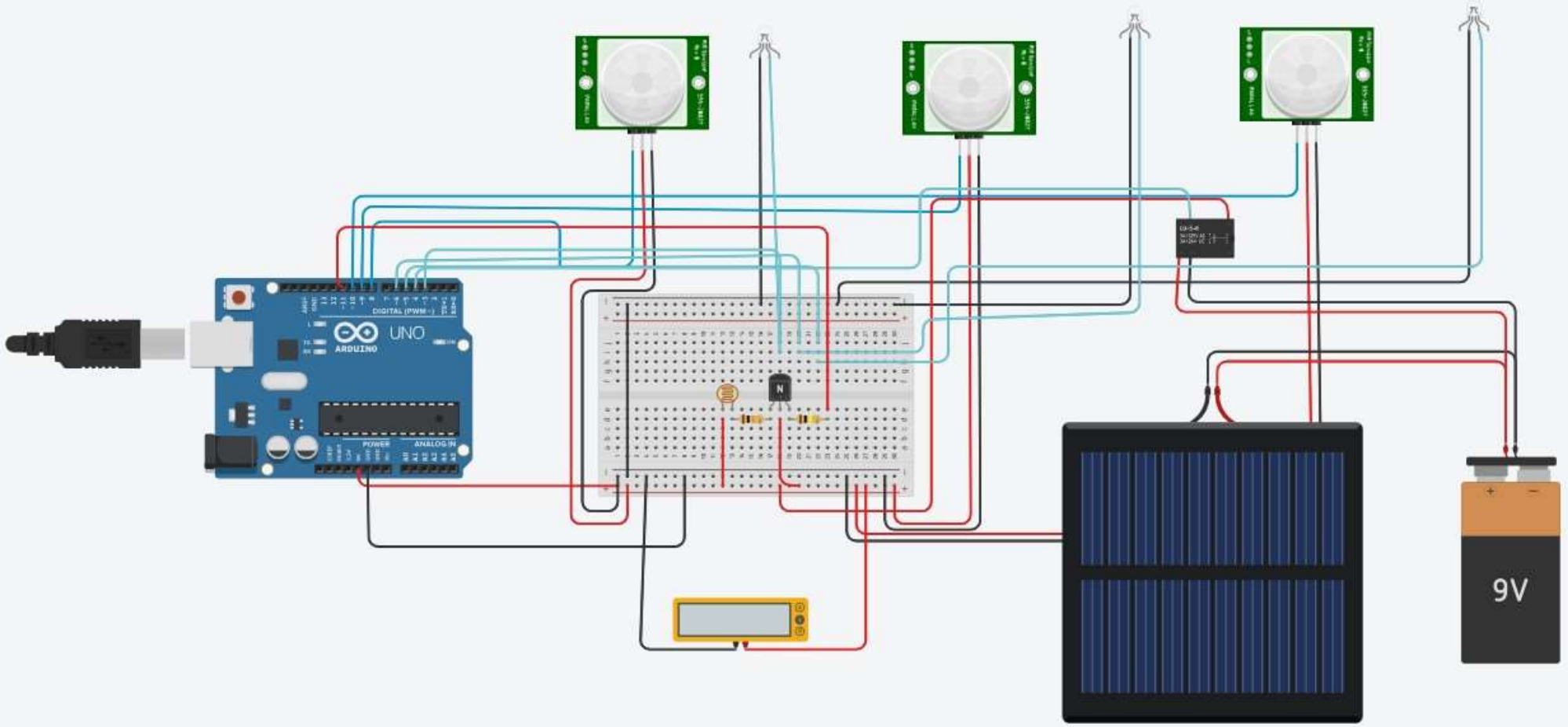
- *Our project, "Solar-Powered Intelligent Lighting with Dynamic Intensity Control ," pioneers an innovative approach to outdoor lighting.*
- *By merging solar energy with intelligent intensity control and real-time vehicle-speed responsiveness, we aim to create a sustainable and energy efficient lighting system for roadways and public spaces.*



TECHNOLOGY STACK:

- IOT based programmed arduino
- Solar panels
- Battery storage
- IR sensor
- Photo resistors
- Relay module

Simulation model:



WORKING:

1. Solar energy is saved during daytime through solar panels
2. When sunlight goes down the visible region the timer and photoresistor send command signal to the Arduido
3. IR sensor wait until the motion is detected and once it detects it send signal to Arduino
4. The programmed Arduino process the input signal accordingly and send command to the relay module
5. Relay module allows the battery to get discharge and the light gets turn on
6. Once the motion is completed the light gets turn off automatically
7. When a crowd of people enters the detection area of a IR sensor or the motion gets detected for long duration then the sensor will trigger and the lighting intensity get increased

USES

- Street Lighting
- Outdoor Public Spaces
- Highways and Roadways
- Parking Lots
- Public Transport Stations
- Emergency Lighting

RENEWABLE SOURCE

LESS POWER CONSUMPTION

DYNAMIC INTENSITY CONTROL

SMART CITY

ENERGY EFFICIENT

ENSURE SAFETY

SOLUTIONS WE PROVIDED

1. Automatic lighting system
2. Dynamic intensity control
3. Using renewable energy(solar)
4. Provided automatic as well as manual control
5. Energy consumption can be calculated through voltmeter
6. This can be used to warn oncoming traffic that there is an object in the intersection.

Any Queries?

THANK YOU