DYNAMIC SOLAR-PANEL POSITIONING SYSTEM

PROBLEM STATEMENT :

Develop a microcontroller-based solar panel positioning system that offers maximum energy capture from sun light

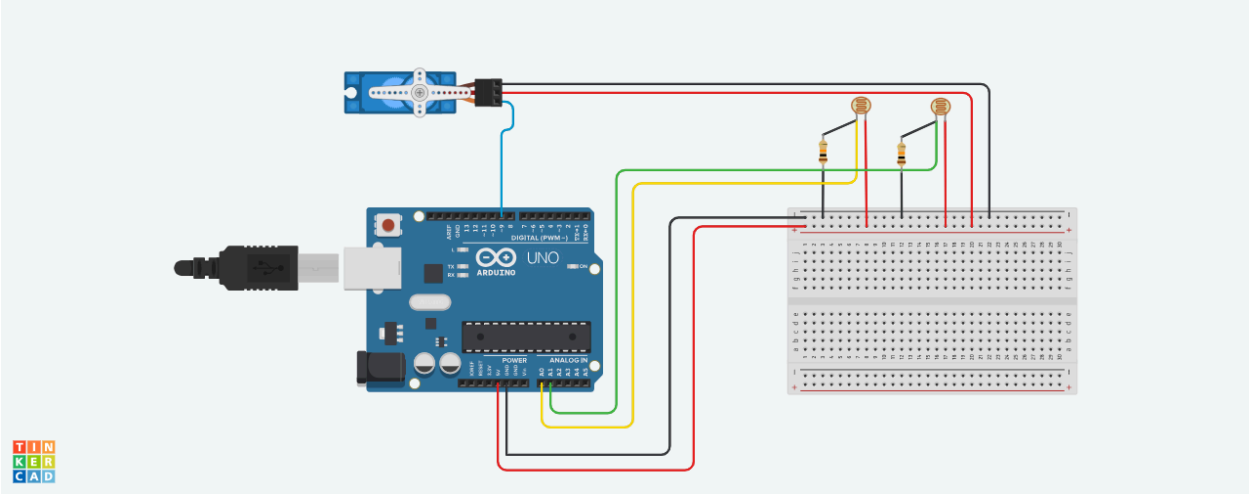
SCOPE OF THE SOLUTION :

The solution involves developing a microcontroller-based single-axis solar tracking system that enhances solar energy capture by adjusting the panel's position to align with the sun's movement. This system uses sensors to detect sunlight intensity and a motorized mechanism to tilt the panel accordingly. By optimizing the panel's orientation throughout the day, it increases energy efficiency and output compared to fixed installations. The design is cost-effective, scalable for small to medium setups, and promotes sustainable energy use, making it ideal for residential and small-scale commercial applications.

REQUIRED COMPONENTS :

- TinkerCad
- Fritzing
- Arduino IDE
- Arduino UNO
- Servo motor
- LDR

SIMULATED CIRCUIT :



PCB :