

ABSTRACT

The purpose making this tools for help people who have difficulty receiving the electricity distribution network, and does not need to pay a monthly fee to get electrical energy, because electricity generated from sunlight or solar energy, as compared to using PLN's electricity distribution network which is not practical or impossible to be installed (in remote areas). In addition, the house is equipped with a PIR sensor to detect humans through the movement and temperature of the human body with infrared light, so the lamp can be turned on or off when the PIR sensor detects the presence of human or not, and LDR sensors to detect light outside the room, so could be more efficient.

On device in this project use solar panels as source of power from the sunshine can be turned into electricity, and battery for the storage energy. For the input detector using LDR sensor and PIR sensor, for the output detector or load using led dc lamp and arduino UNO as system on smart home.

The solar panels with 50WP capacity can fill up battery with 12V 6Ah capacity during 2 until 3 hours, and battery can accept the load used, that 2 LED DC lamp and 1 arduino UNO with a load total 16 Watt during 6 hours or 72 Watt equal. For detector system, LDR sensor can accept light than the specified limit, that is (≤ 5) at 18:00 pm o'clock there after the outdoors lamp can turn on, and back turn off at 06:00 am o'clock when LDR accept light more than limit ($5 >$). The PIR sensor would active if the outdoors lamp turn on or LDR sensor less accept light, and that the indoors lamp turn on with use human presence at indoors.

Keywords : smart home, solar panels, arduino UNO, PIR sensor, LDR sensor.