The Integration System

Salama , Manar (School: Maadi STEM School for Girls)

A number of grand challenges obstruct the world’s wheel of development. The world has numerous grand problems that affect daily life such as: lack of water resources, over consumption of energy and lack of applied technology. The project idea went around two areas as it aims to reduce the consumption of power in order to manage electric demands and increase the relying on renewable energies,control water loss in agriculture to meet the demand. The project has 3 main parts: First,smart lighting systems on high ways by using LDR sensor (light dependent resistor) to make equilibrium between natural & electric light, also, using laser gates made of local components to reduce the cost and ,increase efficiency. secondly ,A smart irrigation system by using a soil moisture sensor and a pump (when soil is dry the soil moisture sensor sends a signal to pump to open). Third,A solar station to provide all systems with energy. This project will make a breakthrough in all the fields because of its effective results. The project achieved its goals ; it could reduce the consumption of energy by 50% , increase efficiency by 66.6% and reduce the wasted water during irrigation by 60%. The project meets its design requirements of reducing consumption of energy and water, applying smart systems in the Infrastructure of any city,increasing the efficiency of a smart system, and decreasing the cost of the whole project.

Awards Won: