

Agriculture Automation Using Arduino

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Abstract

Now a day, with increased population in world, necessities of increased productivity of land, with the use of minimum water and electricity and use of recent technologies, has been increasing day by day.

This project aims at study and demonstration of how soil moisture based irrigation of land helps to fulfill above necessities. Implementation of humidity sensor, soil moisture sensor provides many advantages from various points of view. In vidharbha region of Maharashtra, percentage irrigation is less and whatever is present are all of traditional type, in which excessive use of water and electricity are the main drawbacks. The use of Arduino along with various sensors can prove a milestone in increasing the productivity of land, reducing water use thus reducing soil infertility, reducing use of electricity and making the irrigation system smart and user friendly, with considerable reduction in labor work and time of farmers. This project explains the importance of use of sensors and wireless control of system, which proves important step towards smart India- smart Indians.

Automated Shirodhara Unit

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Abstract

Now a day, technologies or machines are invented for homeopathic, allopathic and ayurvedic therapy treatments and diagnosis. But for homeopathic and ayurvedic treatments, limited technologies are introduced. Especially, for ayurvedic procedures very less technical standards are defined. Homeopathy is based on the principle that “like cures like”. Allopathic is a system of medical practice that aims to combat disease by use of remedies (as drugs or surgery) producing effects different from or incompatible with those produced by the disease being treated. While, ayurveda is a medical science of Ancient India which deals with matters relating to health, day-today life and longevity (long life).

Ayurveda is a traditional system of medicine and medication, based on experience and observation. In ayurveda different medical procedure like Pizhichil, Sirovasti, Nasya, Lepam, Shirodhara, etc are given. Shirodhara is an ayurvedic treatment where “shiro” means “head” and “dhara” means “dripping” or “flow”. Shirodhara has been used in efforts to treat a variety of conditions including allergies, scalp conditions, neurological disorders, memory loss, insomnia, hearing impairment, and certain types of skin conditions like psoriasis. In this procedure, continuously warm oil is dripped on the center of forehead for specified time. The type of oil is varied from treatment to treatment, mostly sesame oil is used. And the maximum required time is of 90 minutes, but 45 minutes are sufficient. This project is designed and controlled by microcontroller where the oil that has been dripped on forehead is recollected, filtered and reused again. It will help to minimize the human error in the procedure.

PLC Based Automatic Bottle Filling System

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Abstract

In today's life, the primary aim of every industry is to increase productivity. Thus these industries always prefer to adapt to high technology available in the markets. So, by implementing the use of PLCs in their processes, industries will take a step forward towards the era of automation. This project "PLC Based Automatic Bottle Filling System" is based on automation. The main objective of this project is to design, develop and monitor "Bottle filling with PLC". It is vast application used in many Industries like milk industries, chemical industries, food industries etc. This Project provides benefits like low power consumption, low operational cost, High accuracy, and most important is less investment in manpower.

The entire system is flexible and time saving. In this project, the filling of the bottle is controlled by using a controller i.e., Programmable Logic Controller which is the heart of whole system. Traditional methods of bottle filling were time consuming. This project aims at filling the bottles simultaneously. Conveyer system is used for passing the bottles. For the conveyer system, DC motor has been used for ease of operation. Proximity sensors have been used for detecting the position of bottles. After detection of bottle, the bottle will move forward and stop below solenoid valve. Then bottle gets filled up to desired level of the user. The purpose of using the PLC is to control the water level in bottle by using the timer and when it come to the set point of desired level it will automatically start or stop the conveyer. Ladder logic has been used for programming of the PLC. The PLC used in this system is Siemens S7-200 CN. The user can fill the water or any other liquid up to any desired level by changing the preset value in the timer of PLC.