https://www.youtube.com/watch?v=NWSO2RdgqQc

Arduino based automatic plant watering system

The project aims in designing a smart irrigation system which is capable of detecting moisture level in the soil and capable of taking the decision of switching ON/ OFF water motor automatically using Arduino nano.

Arduino nano is an open source, computer hardware and software company, project, and user community that designs and manufactures microcontroller kits for building digital devices and interactive objects that can sense and control objects in the physical world. The project's products are distributed as open-source hardware and software, which are licensed under the GNU Lesser General Public License (LGPL) or the GNU General Public License (GPL), permitting the manufacture of Arduino boards and software distribution by anyone. Arduino boards are available commercially in preassembled form, or as do-it-yourself kits.

The system makes use of an Arduino nano microcontroller. Soil moisture sensor, water motor along with relay and LCD display are interfaced to the Arduino nano. The microcontroller will continuously compare output from soil moisture sensor. When there is no moisture in soil then microcontroller will turn ON the water motor through relay. There is sufficient water in soil microcontroller will turn OFF the water motor automatically. Here relay works as switch to ON/OFF the water motor. The status of the project will display on LCD. The Arduino nano is loaded with a program written in embedded ‘C’ language to perform the task.

Features:

- Automatic moisture sensing using soil sensor.
- Automatic water pumping system.
- Visible alerts using LCD display.

Main blocks in this project:

- Regulated power supply.
- Arduino Nano Microcontroller.
- Water Motor with Relay driver.
- Soil moisture sensor.
- LCD display.

Software's used in this project:

1. Arduino IDE studio compiler.
2. Express SCH for Circuit Design.
3. Embedded C language.

Block diagram:

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