Smart Plant Monitoring System

A smart plant monitoring system uses different sensors to monitor the requirements of a plant such as water and sunlight. The moisture level data and available sunlight can be monitored remotely at all times using a WiFi shield.

Components:

1. Arduino Uno: The brains of the system.
2. WiFi shield: To send data to a web server.
3. Moisture sensor (sensor): To measure the moisture level of the soil.
4. Photoresistor (sensor): To measure the amount of sunlight available.
5. Electric valve (actuator): To supply water to the plant.
6. Artificial lights (actuator): To artificially illuminate the plants.

How to do:

1. The moisture sensor can measure the level of moisture in the soil of the plant.
2. The photoresistor can measure the amount of sunlight available to the plant.
3. The recorded data of the moisture sensor and the photoresistor can be uploaded to a web server using the WiFi shield.
4. This data can be monitored at all times remotely. Hence you can monitor your plant health at home while sitting at your office.
5. The system can be automated by using actuators like electric valves and artificial lights.
6. The electric valves can be controlled by the Arduino. They can supply appropriate amounts of water to the plant when the soil is dry.
7. Artificial lights can illuminate the plant (with controlled brightness) in weathers when sufficient sunlight is not available.
8. The usage of valves and lights can be recorded and uploaded to the server. Therefore they can be remotely monitored too.