Automatic Irrigation System with The Use of An Arduino, Moisture Sensors, and Automatically Controlled Car

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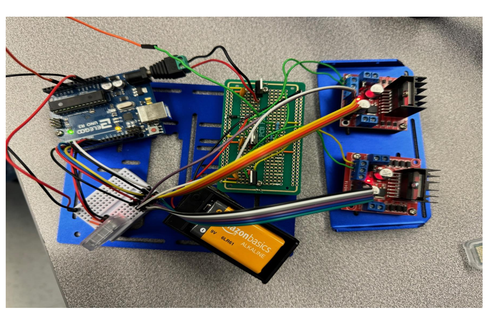
Abstract:

This project aims to develop an automatic irrigation system utilizing Arduino, soil moisture sensors, and an automatically controlled car, with data uploaded to the cloud. It addresses water sustainability by reducing water costs for homeowners and simplifying lawn care by efficiently watering areas needing moisture. Sensors prevent water wastage by indicating areas requiring watering. An accompanying app facilitates access to device information. The system comprises an automatically car for water distribution and soil moisture sensors spread across the lawn. The project aims to mitigate excessive water usage in conventional sprinkler systems, positioning itself as a more efficient lawn care solution.

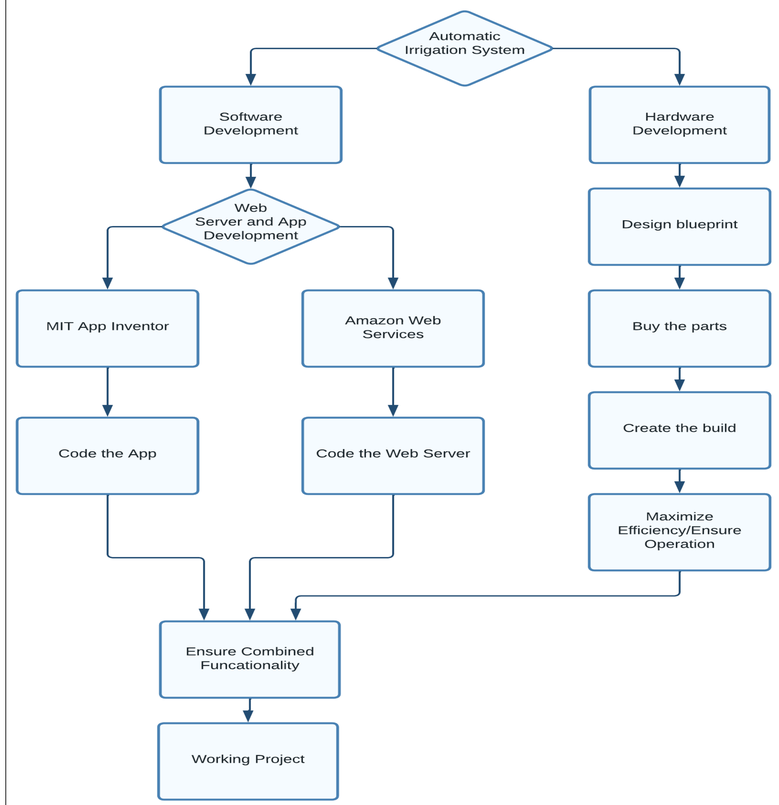
Objectives:

- Create an automatic irrigation system
- Maximize efficiency, power and water consumption
- Transfer data via Bluetooth and a website
- Automize the cars movement to several sensors
- Upload data relating to moisture values, battery health, and water levels
- Broadcast all data to a mobile app and a cloud software.

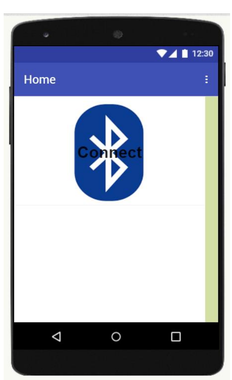
Initial Hardware



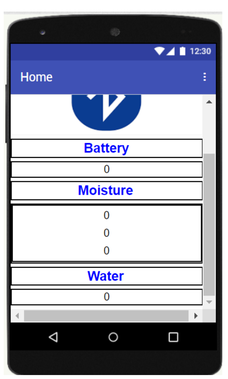
Design:



Starting Screen



Home Screen

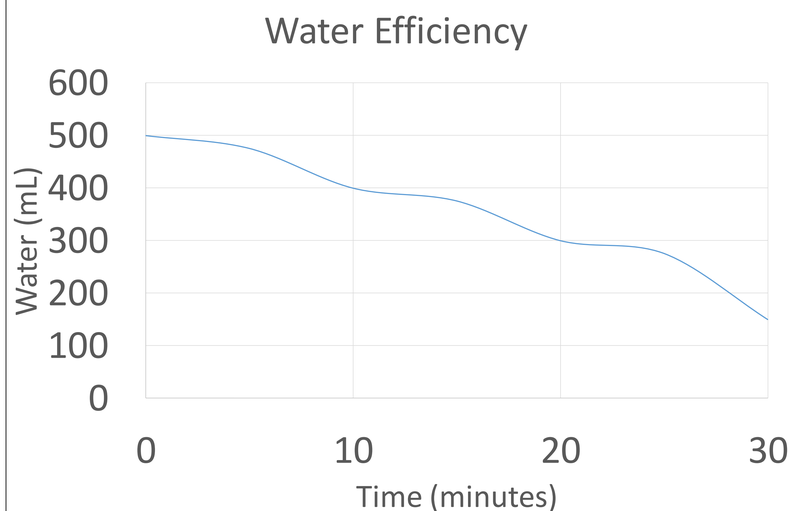


Benefits/Applications:

- Energy Conservation
- Water Sustainability
- Ease of use
- Can be altered for different needs
- Environmental Help

Future Application:

- Refine android app
- Create IOS app version
- Create a website
- Establish a better connectivity
- Expand car housing unit
- Upgrade Water Tank



Water Tank