Moisture Sensing & Feedback Tweeting Bot

Team 8

Karan Punamiya	133059004
Lucky Agarwal	133050019
Palash	133050054
Sudhir Waghmode	133050063

Problem Statement

Using Firebird V platform to design a system for moisture sensing at user selected locations and post status on Twitter

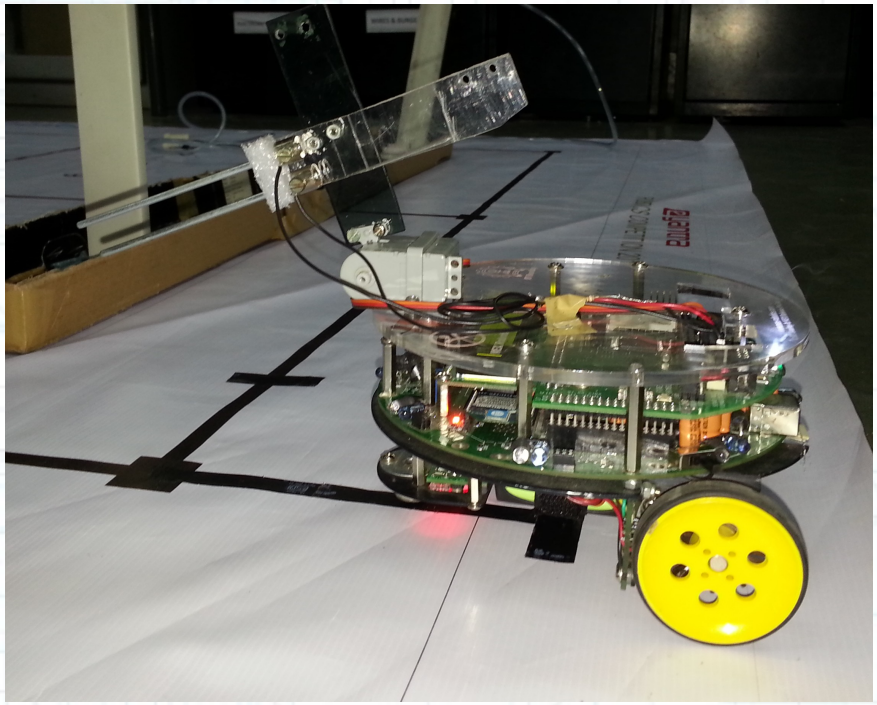
Requirement Specifications

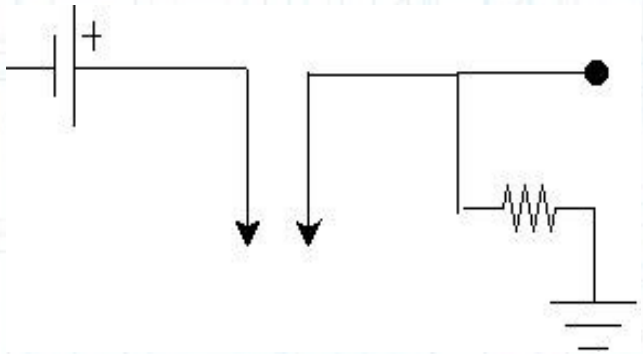
- Moisture Sensor design and calibration
- GUI based activity scheduling
- Response data logging for analytics
- Result Tweeting
- Irrigation system actuation

Final Implementations

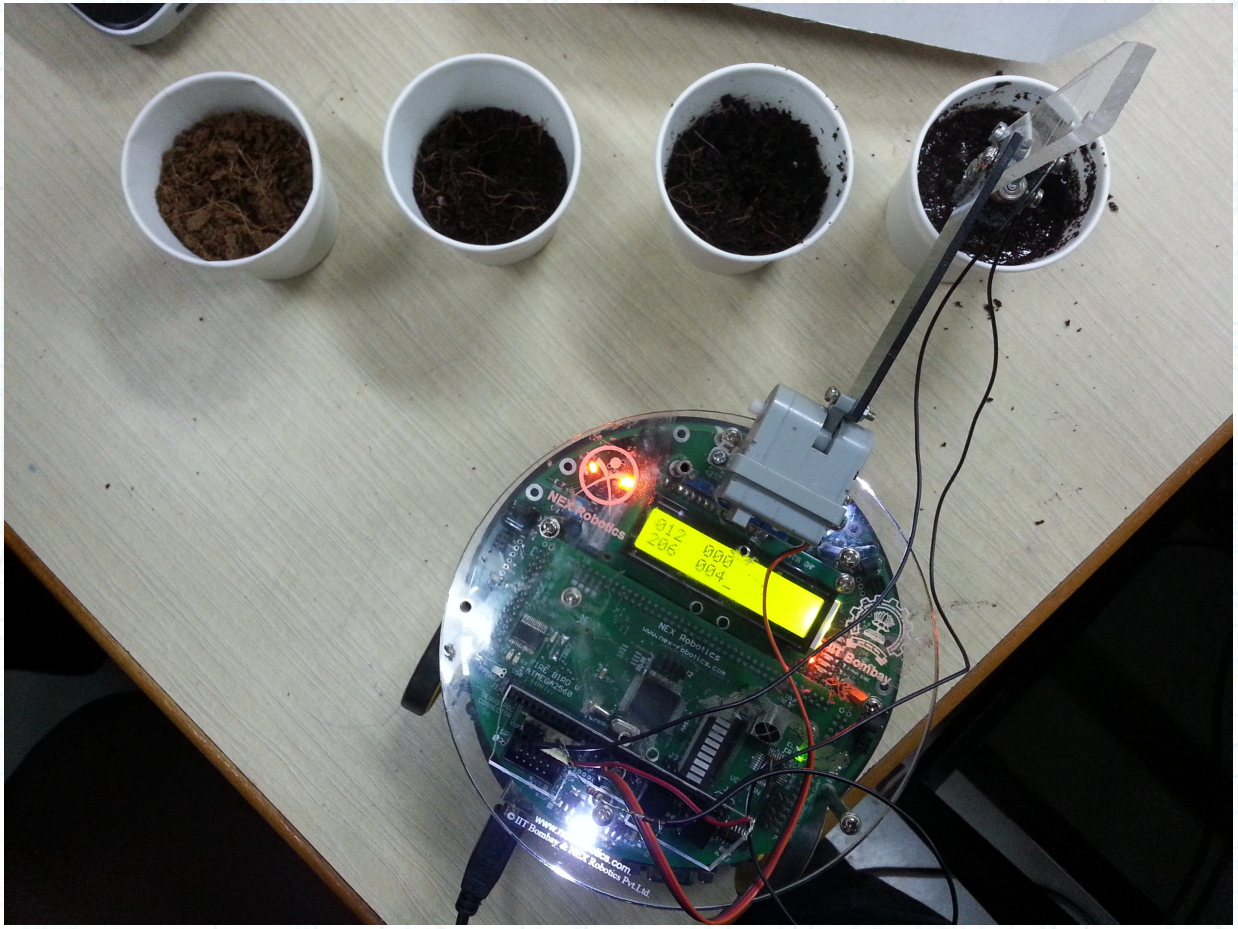
- Designed a soil conductivity measurement sensor for moisture sensing
- PHP based GUI design with click-select options for activity generation
- Data logged for all sensing activities completed
- Oauth based Twitter API for posting twitter updates (follow @IITBTweetbot)
- Pump actuation for irrigation activity

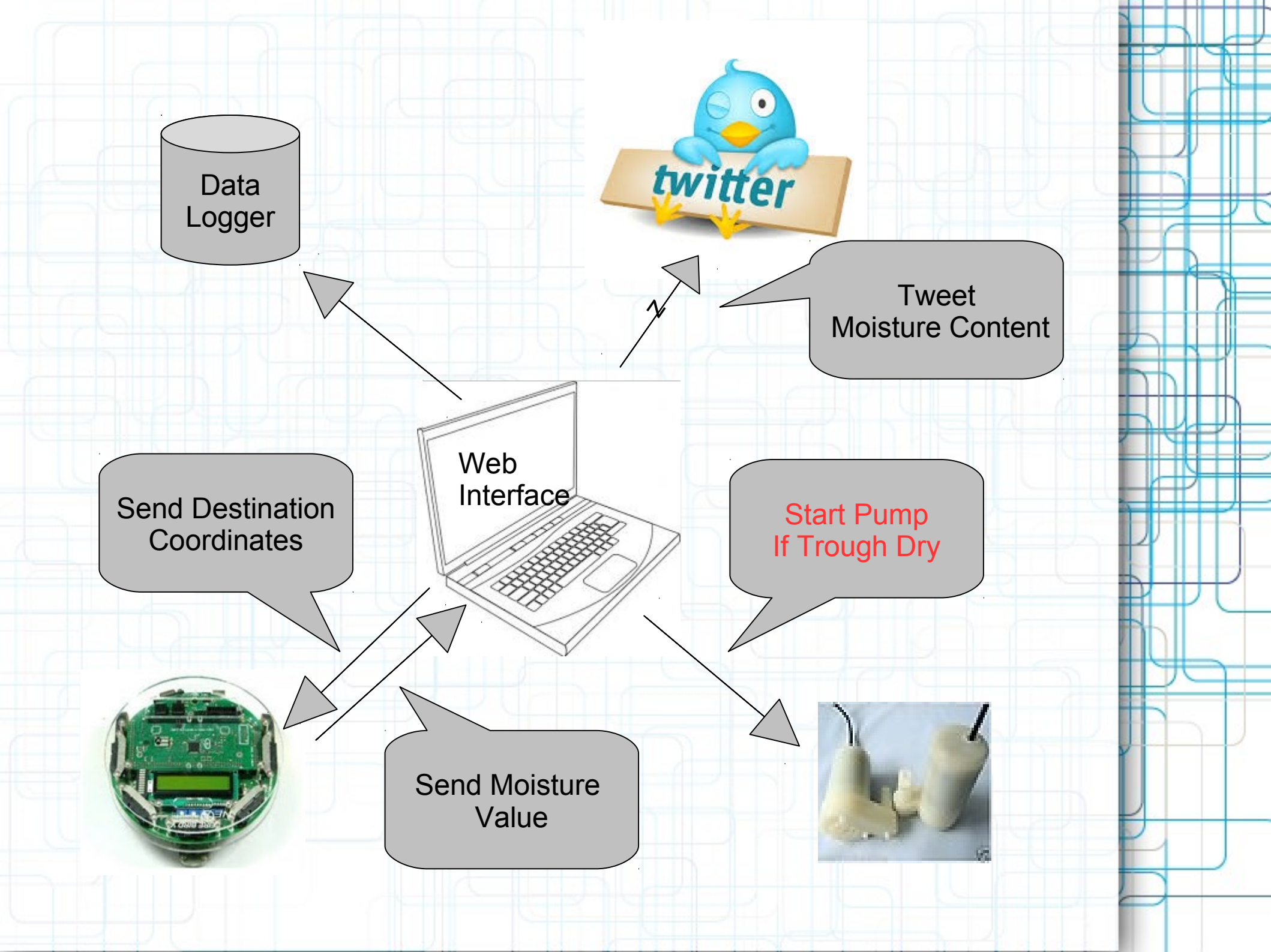
Moisture Sensor





Moisture Sensor Calibration




Data Logger
twitter
Tweet Moisture Content
Web Interface
Send Destination Coordinates
Start Pump If Trough Dry
Send Moisture Value

Issues Encountered

- Sensor calibration
- Accuracy of navigating to location with ±1 cm
- Zigbee communication between server and bot
- Portability from Twitter API 1.0 to 1.1

(Including new OAuth Protocols)

Future Works

- NRE cost for the sensor is very low, hence stationary probes can placed at all locations
- Valve implementation to make use of such selective irrigation for preventing water wastage
- Multi-Depth sensing.
- Application of smart heuristics to logged data for generating auto sensing schedules reducing the need for human intervention
- Dynamic editing of set schedule before reset