

A Report on

Smart Agriculture-based Grape Field Environment Monitoring System

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Innovative Idea:

Retrofitting Brown-field Smart Agriculture-based Grape Field Environment Monitoring System

Date of deployment:

11/11/2017

Time Period of deployment:

30 days

Location:

Near Pinpalgaon Bahula Village, Nashik

Objective:

To deploy and validate the functionality of developed system in the field

Description:

The innovative idea entitled ' **Smart Agriculture-based Grape Field Environment Monitoring System**' has been designed, developed and fully functional unit is tested in college premises for 8 days continuously and after removing all the bugs, fully tested hardware and embedded software, the project hardware is deployed in the farm for practical testing of implemented project.

After completion of 30 days from the period of deployment, it will be again analyzed, updated as per the need.

General Observations after deployment:

Output is as per expectations. Here are some sample pics.

Monitored on Smart phone at time 20:20 on 11 Dec 2017

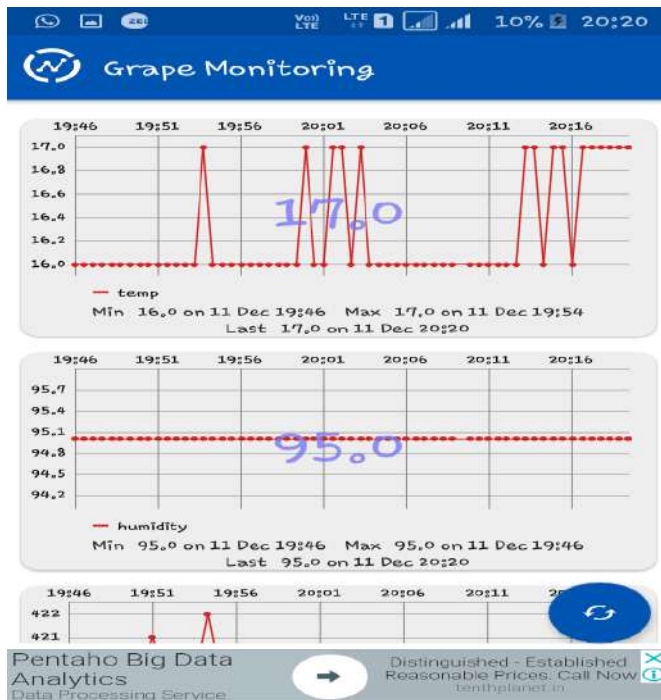


Figure besides shows the readings of the temperature and humidity.

Temperature: 17.0 Degree Centigrade

Conclusion: As per the winter season, temperature at night remains low

Humidity: 95.0%

Conclusion: As per the winter season, humidity increases at night

Fig: Temperature and Humidity readings

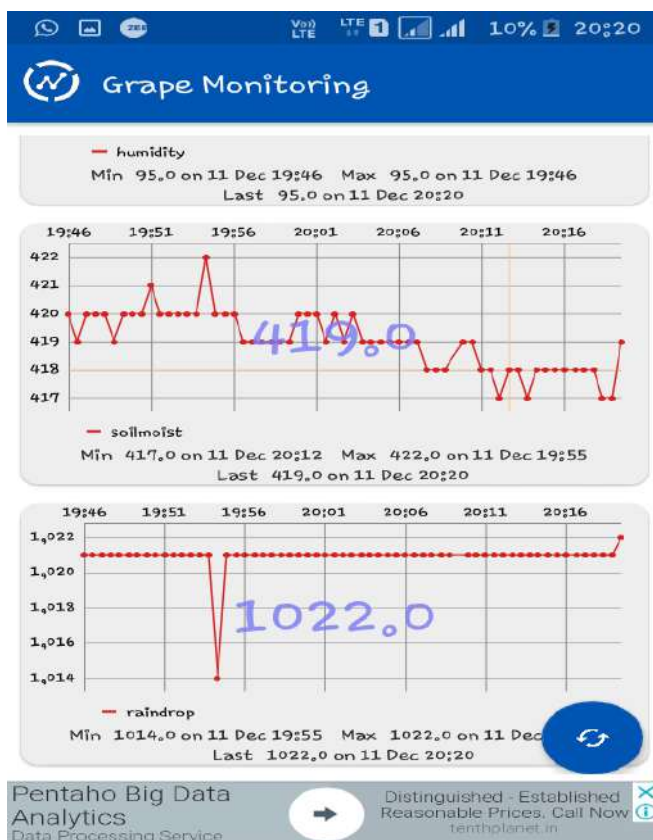


Figure shows the readings of the amount of moisture level present in soil of farm and status of the current rain fall (Whether rain-fall occurred or not)

Level of soil Moisture: 419.0

Conclusion: Soil is near to get dried, need to provide water

Rainfall sensor value: 1022.0

Conclusion: no rainfall

Fig: Soil moisture level and rain drop sensor readings

Monitored on Smart phone at time 09:20 on 12 Dec 2017

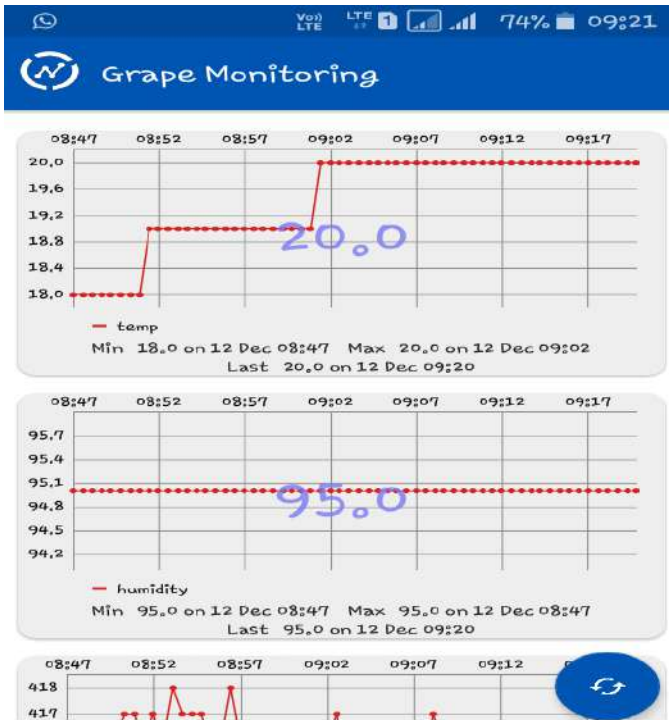


Figure besides shows the readings of the temperature and humidity.

Temperature: 20.0 Degree Centigrade

Conclusion: As per the winter season, temperature at morning has increased compared to night readings

Humidity: 95%

Conclusion: humidity remains same, since reading has taken early in morning

Fig: Temperature and Humidity readings

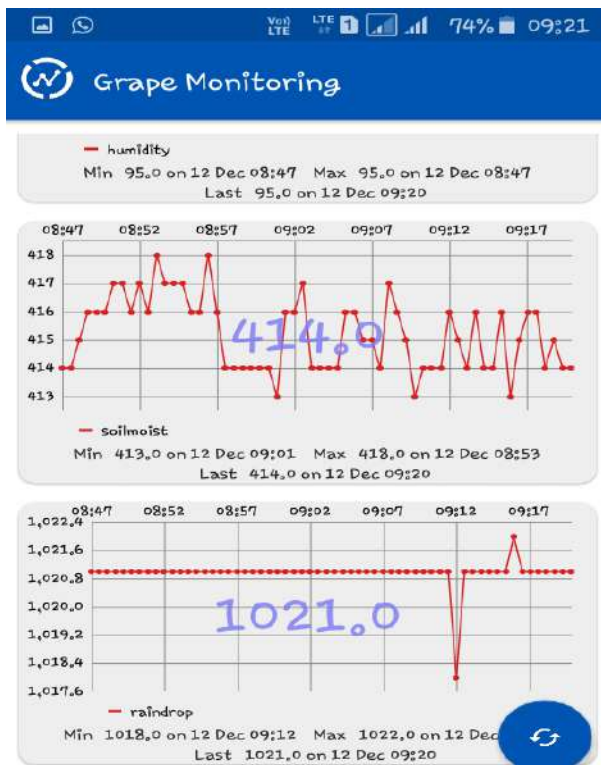


Figure shows the readings of the amount of moisture level present in soil of farm and status of the current rain fall (Whether rain-fall occurred or not)

Level of soil Moisture: 414.0

Conclusion: Reading is lowered compared to night readings, Soil is near to get dried, need to provide water

Rainfall sensor value: 1021.0

Conclusion: Same reading as night since no rainfall from night till this time

Fig: Soil moisture level and rain drop sensor readings

Pics of project deployment:



Fig: Actual Project deployed on Grape tree



Fig: Actual Project deployed on Grape tree



Fig: Actual Project deployed on Grape tree



Fig: Humidity and Temperature Measurement



Fig: Rainfall sensor to monitor rainfall



Fig: Pic with farmer of grape field



Fig: Soil moisture level measurement

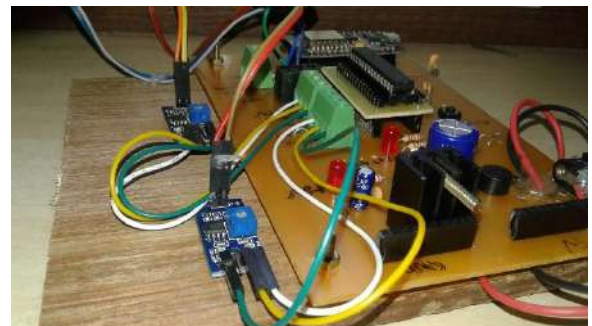


Fig: Actual Hardware of project