PATUAKHALI SCIENCE AND TECHNOLOGY UNIVERSITY

FACULTY OF COMPUTER SCIENCE & ENGINEERING

Project on: Sensor-Based Water Quality Management

As a partial requirement for completeness of the course:
(CIT-312) Microprocessors and Assembly Language Sessional

July 2019

OVERVIEW

1. Project Background and Description

Water is one of the vital elements for human being and all other organisms. The mixture of various type of dissolvable and non-dissolvable elements cause for changing the quality of water. The temperature of the water source is also considered as an important effective parameter. To help researchers about sensing the water quality and maintain the acceptances of its various parameters we are stands for the agreement of this project.

2. Project Scope

On the availability of some wonderful water sensor device, whose can be interfaced with microcontrollers such as Arduino ATMEGA32, we decided to develop this interface which combines the features of all available sensor-based reading about water acceptances parameters such as the potential of Hydrogen, dissolved Oxygen, turbidity, temperature, etc.

3. High-Level Requirements

- *pH electrode E201-C BNC with the calibrate module.*
- *Waterproof DS18B20 Digital Temperature Sensor.*
- *Water Turbidity Sensor for Arduino SEN-00205.*
- *Dissolved Oxygen Sensor.*
- *Arduino UNO3 with ATMEGA-328P U microcontroller.*
- *Connecting Jumper wares, etc.*

4. Deliverables

However, the Dissolved oxygen sensor is not available in our country yet, so that other equipment will be delivered within the project time and we expect that, we will have to succeed in interfacing these all sensor features within a single device.

5. Implementation Plan

Arduino UNO-3 have 14 pins for digital I/O and also 8 pins for analog I/O. It also includes the supply of 3.3 to 5-volt potential DC power with ground connection. With proper 5v potential, we have to interface only one analog pin for a turbidity sensor, two analog pins for pH electrode and only one pin for the temperature sensor. Then we have to process the sensor data to form readable in the generic parameter unit.

6. High-Level Timeline/Schedule

We expect, our project will be completed within our scheduled time. However, there is a risk of failure on the damage of the electronic sensor's sensing and so that we have a few extend of the timeline for testing and troubleshooting.

APPROVAL AND AUTHORITY TO PROCEED

We approve the project as described above, and authorize the team to proceed.

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Approved By	Date	Approved By	Date