ASSIGNMENT 1

Real - Time River Water Quality Monitoring And Control System

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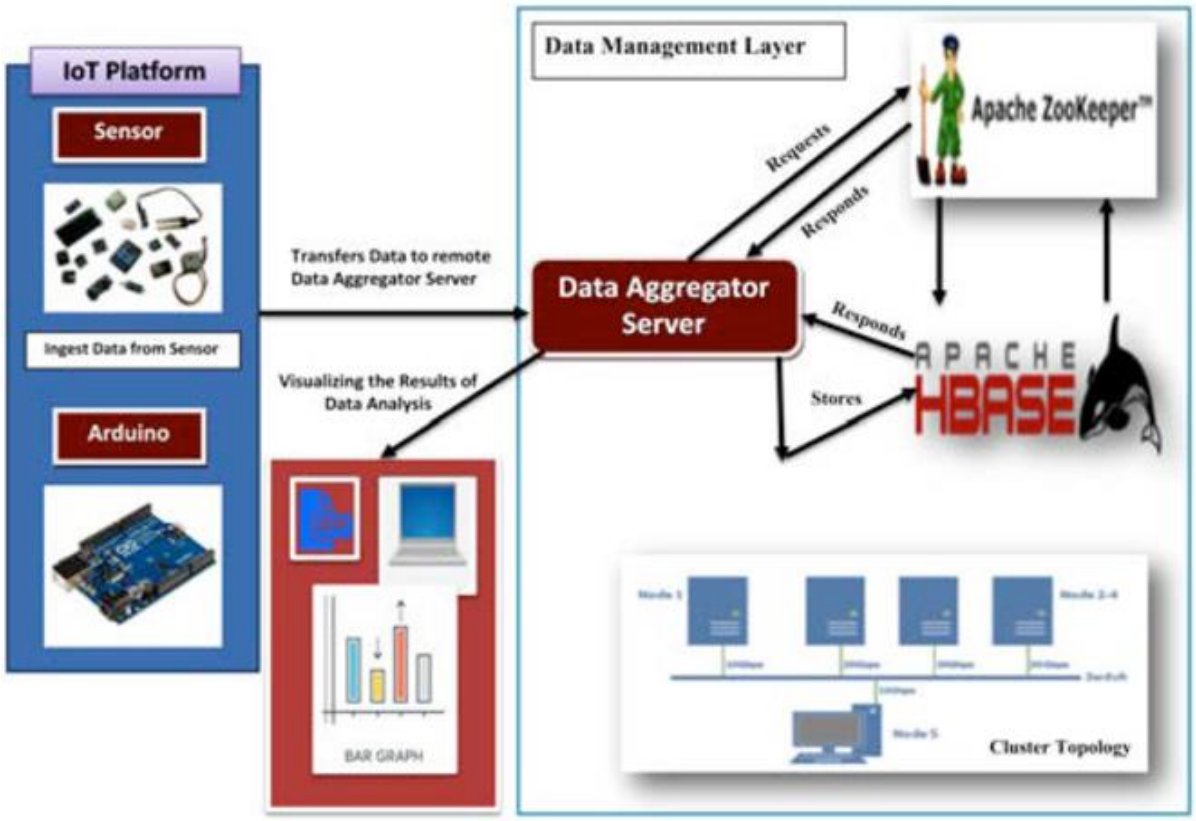
Project Name	Real - Time River Water Quality Monitoring And Control System
Maximum Mark	4 Mark

Abstract

In this paper, an attempt has been made to develop a statistical model based on Internet of Things (IoT) for water quality analysis of river Krishna using diferent water quality parameters such as pH, conductivity, dissolved oxygen, temperature, biochemical oxygen demand, total dissolved solids and conductivity. These parameters are very important to assess the water quality of the river. The water quality data were collected from six stations of river Krishna in the state of Karnataka.

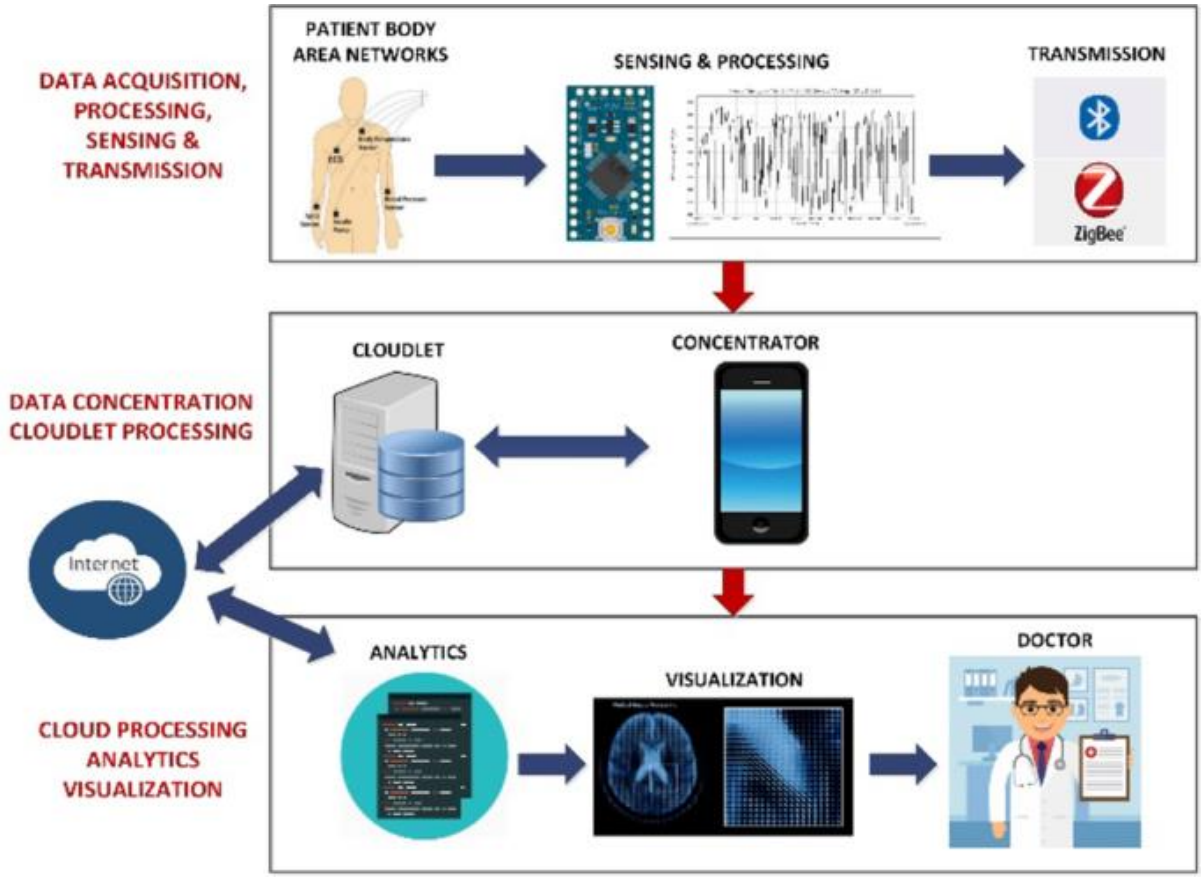
Sampling

Table 2 shows the stations from which the samples were collected and these stations are standard locations taken from national database; a total of 36 samples, i.e., six samples per station, were collected randomly. Out of six samples collected from each station, a pair of samples represents the summer, rainy and winter season, respectively.



Temperature sensor

Temperature sensor is used to measure the temperature of H2O. It is one of the most important parameters to be considered. It dramatically afects the rates of chemical substance and biochemical reactions within water. Many biological, physical and chemical principles are temperature dependent. The most common are: the solvability of compound in sea water; distribution and abundance of organisms aliveness in the watershed; rates of chemical reactions; water density; inversion and mixing; and current campaign.



Conductivity sensor

Conduction sensor is suitable for measurement conduction in a wide variety of covering including science laboratory, streams, rivers and groundwater. The conductivity detector's small size and rugged housing shufe are useful for handheld mensuration or permanent installation. The conductivity sensors use a 4-electrode mensuration technique that provides accurate readings over a wide range of conduction and temperatures.

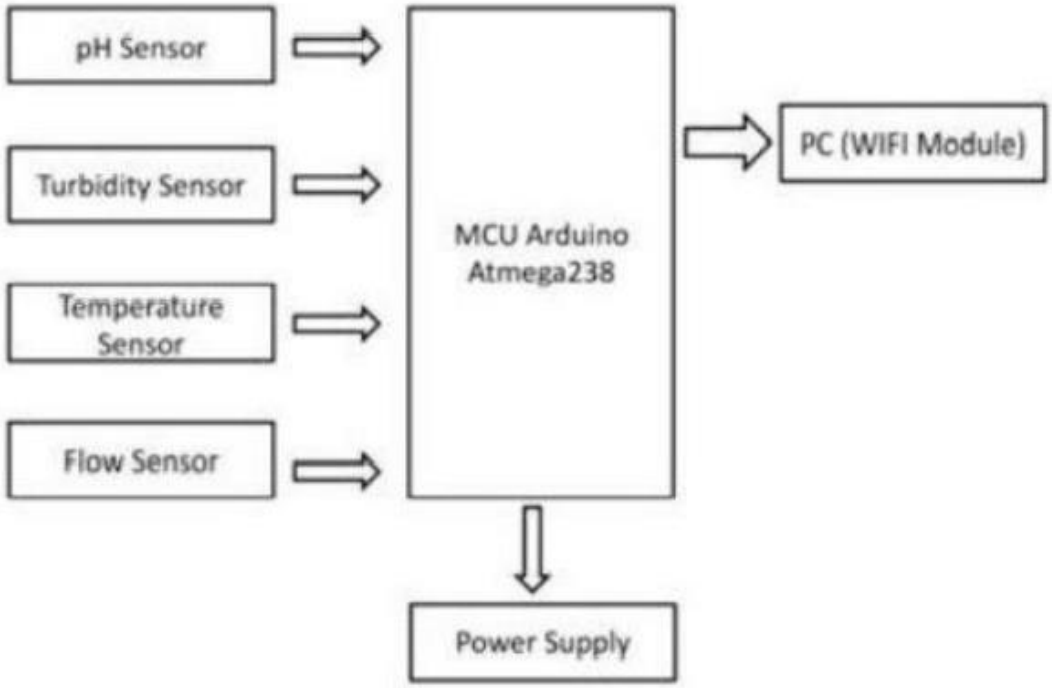


Fig. 2. Block diagram of a water quality monitoring system

Results

We apply one-way ANOVA on each of the water parameters, namely temperature, DO, pH, BOD, conductivity, TDS and nitrate. We group these parameters according to the stations at which the samples were collected.