India is country which have more than 15 river flowing through it and catering for the needs of rural as well as urban India. One of such river is holy river Ganga. Ganga is one of the longest river in India. Its water is used in industries, agricultural fields, for water pumps and household uses. But due to lack of responsibilities industries are discharging their waste and untreated products directly into river. Also Indian government lacks in real-time monitoring of river water. Traditional methods involve manual collection of river water sample from different locations and taken to the laboratory to check its quality. Such method of monitoring water quality lacks in exact and real-time status also few parameter have different values when measured at different time.

There are many factors on which water quality can be monitored like Temperature, pH, turbidity and presence of heavy metals, concentration of different ions, dissolved oxygen and nutrients

In this paper we will mainly focus on sudden changes/ increase in water temperature that is harmful for aquatic as well as human life. Sensor module, explained later, is changed when different parameter is to be monitored, rest of system architecture remains same. Due to sudden change in temp cold blooded animals like reptiles, amphibians and fishes have problem in survival and they may die.

Temperature influences enzymatic reaction. It also affects respiration and overall performance and behavior of aquatic life. Increased water temperature is an important factor of consideration if toxic substance are there in water. Many chemical substance like cyanides, phenol and xylene exhibit increased toxicity at high temperature. On the basis of LE CHATELIER’S PRINCIPLE, temperature and dissolved gases are inversely proportional thus increase in temp will reduce dissolved oxygen level in water. Higher the temperature lower will be amount of oxygen in water. Also high temperature favors growth of fungus.

This paper consists of cost efficient system for real time IOT based water quality monitoring system. In our proposed design Raspberry pi-3 acts as a base controller which read the sensor data and transmit it to cloud.

The rest of the paper is organized as follows. Section II consists of overview of related work in this field. Proposed system architecture is explained in detail in section III along with deployment strategy. Section IV consists of deployment strategy. Experiment result and setup is shown in section V. The paper is concluded in section VI with future scope.