**IDEATION**

As we speak on water quality, there are many issues arising continuously. Water is a very important natural resource as we depend on it every day. Water quality constantly degrades as it gets contaminated with toxicants. Water pollution affects the health of people significantly, and contamination is the second biggest water quality problem after water depletion. According to report from UNICEF and World Health Organization, and the consumption of impure water causes around 12% of deaths around the world.

The elderly people feel the need of knowing the information regarding the water quality on a regular basis, as they are the one who consume water regularly. The fisherman needs to know the quality of river water, so that he can get the idea if the fisheries are good to consume or not.

Water quality and scarcity will be one of the vital upcoming global problems. The necessity to solve these issues is so urgent that many experiments are being done to preserve the water quality. IoT-based innovative water quality management can identify toxicants present in the water. So we have decided to implement a system using IBM Watson IoT Platform and Node-Red Cloud software. The IBM IoT Platform is used to test for salinity, acidity or alkalinity, total dissolved solids and turbidity to ensure levels are safe for human use. After the check is complete the data is sensed and sent to user via the Node-Red cloud platform.

The User gets the sensed data through a fast SMS service which is used to push the Alert message when the water quality levels fall below the estimated quality level and periodic data on the water quality is also being stored in cloud and can also be monitored by the user.

We are going to be using multiple sensors, such as temperature sensor to continuously monitor the temperature of the river water. This is an essential step, as the sea creature’s may die out due to extensive water temperature. We are going to be connecting it to the raspberry pi microcontroller, with the aid of GPIO pins.

The other sensors include the turbidity sensor, which checks for dirt and dust in the water , and therefore if the sensed value is lower than the threshold, them the microcontroller will use the sensed, after which the further process of sending SMS to the user is made. Ph level can also be monitored with the help of sensors available in the market and be placed in line with the microcontroller’s GPIO pin. The code is written for all the three sensor, which are all together connected with the microcontroller.