**INAUGURATION OF AN AUTOMATED QUALITY CONTROL SYSTEM THROUGH QUALITATIVE STUDY OF FISH BEHAVIOR PATTERNS FOR AQUARIUM UNIT**

**Introduction**

In fish farming there are two different farming methods. Like mono and polyculture. When considering monoculture, it is economically very important. If we gain with better production output, we should be concerned about water quality, fish related disease and other abnormal behaviors. Water quality is the most important factor when consider about the requirements of an aquaculture unit as it directly affect to gain a good output. Therefore, we should give a much concern in controlling the water quality in an aquaculture unit.

To maintain a better water quality there are many methods to use and the most common method is usage of sensors. But with the use of sensors, it can get only the water quality parameters of the aquaculture unit as an input. Instead of getting signals using sensors, if we could able to get the inputs as the behaviors of the fish in aquaculture unit it will make easier to interpret the data. We can easily identify physical abnormalities via observing fish behaviors. Here we can use a webcam to get the observations of the behaviors of fish in different instances such as different behavioral patterns of a fish in pregnant period or when suffering with a specific disease etc.

A teaching machine is used to identify the different behavioral patterns of fish from each other which are collected as inputs through the webcam. Then it is suggested to use the Arduino technology to get the output as automated system to control the quality parameters in the aquaculture unit.