

## ***ABSTRACT***

Sea is a natural resources that can be used by mankind for doing their daily activity. Especially are used for transportation and source of livelihood. The information of height of seawater is needed by fishermen for the security purpose. Some of fishermen or captain frequently measuring the height of seawater based on sign of nature from the beach only for go to the sea. Without they realize, the weather in the middle of the sea is contrast with weather on the beach. The weather can affect the height of seawater, so it make differences between the height on the beach and on the middle of the sea. The effect of this uncertainty is many accidents or panic while on the middle of the sea.

This final project will design a prototype that can be measure the height of seawater by using ultrasonic sensors. Ultrasonic sensor can be measure the height of seawater from the ultrasonic signal which reflected over the plate, and this plate will moving up or down depend on the condition of seawater. In addition, a water flow sensor use to calculate the speed of water. Processing and controlling carried out by Arduino Uno and XbeePro. C programming will be used to determine the height of seawater and the fuzzy logic methods use as delay controller on the data transmission. Solar cell, the lights and alarm as the tools on continuity of that system.

By using this system, can expected can measure the height in the middle of the sea direct from the beach. With that system there is no need to worry for the fishermen, captain, and all of the citizen, because from this data system we see the differences between the height on the middle of the sea and on the beach.

Keywords: Arduino Uno, Ultrasonic Sensor, XbeePro, *Waterflow Sensor*, Solar Cell, Lights, Alarm, Height of Seawater