Waste Separation from Sea by using Smart Boat

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Abstract

Water, which has been severely polluted, is a key resource for human survival. We have contributed to creating a small prototype for removing waste from water, whether it be sea or river, in order to save the pure water for humanity. The project's primary goal is to limit the use of plastic, chemicals, and other harmful substances, especially in waterways. In this project, the locomotive part is controlled by NodeMCU, which serves as the controller. The net that connects the left and right motors using L298N motor drivers makes up the locomotive portion. The motors employed will determine the direction of the overall movement. The mobile device on which the programme is loaded determines the direction. The NodeMCU and Blynk applications are utilised for communication. which in turn manages the intelligent boat. A tiny water tank filled with plastic, Thermocol, and other floating materials is used to test the prototype. Here, a servo motor that is controlled by PWM was used. It operates using the PWM (Pulse with Modulation) that the control wires supply. Remove the plastic and solid from above the river to solve this issue. Here, the belt is fixed and the waste picker is attached to the boat. The garbage picker scoops up the trash on the water while driving the boat by spinning the belt. We use a phone to control the direction.

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Index Terms -Node MCU, L2998N motor, Arduino UNO

INTRODUCTION

The most popular methods for removing water from our bodies are using human force or Boats are rarely used when advanced technology is available. To do this, we require a big quantity of manpower, thus it takes a while. Now Occasionally, the level of pollution is 100 times greater than Indian government restrictions. The largest river in India is also most heavily contaminated with plastic garbage. The Ganges River is estimated to release 1.2 billion kilogrammes of plastic into the oceans annually. One of the longest rivers in the globe, it flows domestically to cities with a population of 120 million. According to a recent study, only 10 rivers eight of which are Asian, including the Ganga river, and two of which are African are responsible for the majority of the plastic pollution in the world's oceans. Between 410,000 and 4 million tonnes of plastic are added to the oceans each year by rivers. More than half of the seabird population's stomachs contain plastic residues. Amounts of plastic trash build up where the ocean generates a Gyres are a type of circular current. these rounded Oceans' cutting-edge sucks in the floating particles.i.e., the pollution brought

on by plastics. Both marine and human life suffers severe and permanent damage when these plastics end up in the water we drink.

RESEARCH ELABORATION

Algorithm

Step 1- Power ON the kit and open Blynk Server.

Step 2- Check if waste is present.

- Step 3- If Yes rotate the servo motor from Blynk App
- Step 4- Else stop
- Step 5- Go to Step-2
- Step 6- Power OFF the device.

Flow Chart



BLOCK DIAGRAM



RESULTS



NODE MCU

Arduino UNO

Servo motor



DC motor

Blynk App



Blynk app application

Project prototype

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CONCLUSION

The suggested layout is a clever bot. Utilizing the Blynk server, the user interacts with the Nodemcu and can move in multiple directions, including forward, backward, right, and left. Waste pickers regularly remove waste from the water and gather waste that has been deposited in the bot during the waste collecting period. The aforementioned literature analysis makes clear that in the majority of countries' existing wastewater management practises, not all the factors that should be taken into account throughout the water treatment process are. In order to save expenses or make better use of the few wastewater treatment facilities that are currently available, this leads to the mixing of various wastewaters. However, given the different impurity content of, for instance, sewage wastewater and agricultural wastewater, this shouldn't be the case. Some nations don't even bother to handle storm wastewater, which causes problems for their ecosystems in terms of contamination. Therefore, governing organisations in various places throughout the world should take the effort to ensure that distinct wastewater plants for different types of wastewater are properly designed and run. The upkeep of water treatment facilities should receive more attention from all pertinent parties. As opposed to the existing situation of inferior recycled wastewater that is producing a global clean water crisis, this will provide a better supply of well-recycled water. It is also crucial to remember that wastewater management should be carried out with the goal of reducing the expense of finding and creating new water facilities whenever there is a water shortage. Environmental considerations should also be given to wastewater management.

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