



WATER CLEANING BIN

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Abstract— This project emphasis on design and fabrication of the water waste cleaning machine. "Water cleaning machine" a machine which involves the removing of the water debris from water surface and safely dispose from the water body. The work has done looking at the current situation of our national rivers which are dumped with ton liters of sewage and loaded with pollutants, toxic materials, Debris; It is hampering the life of aquatic animal and put their life in danger. A "Water cleaning machine" will lift the waste surface debris from the waste water bodies, This will ultimately result in reduction of water pollution and the aquatic life will be saved and our water resource will be cleaned. In this project we have used rechargeable batteries and mechanical parts which will not harm water bodies in any manner.

Keywords— Feature for cleaning water using arduino n gps

I. INTRODUCTION

In this project we are going to design a "Water cleaning machine" based on Arduino Uno concept. It will be great option for cleaning our water bodies such as Rivers, Lakes etc. The "Water cleaning machine" will be used at that places where there is water debris gets accumulated. The machine will collect the surface debris which floats on water, this will ultimately result in reduction of water pollution and lastly the life of aquatic animals will be saved as well as our water bodies will be saved from getting poisonous. It consists of a main form body that will easily float on water body which is connected to a conveyor belt which will remove debris from water bodies. The use of this project will be used to clean various water bodies like Rivers, Lakes, Ponds and others safely and efficiently. India is a holy country and during lots of festivals like Ganesh visarjan, Navratri durga pooja and mainly kumbhmela, There is lot of pollution in water bodies by the means of idols dropped in water bodies and its POP is very harmful which is the main cause of skin cancer and many other various disease which can be reduced by this machine. There are various videos on internet that by our used plastic the aquatic animals are suffering badly like turtles in the sea swallows the plastic assuming it as food which then gets stuck in their throat and they suffocate and die and there are various other example that shows how water pollution has made aquatic life very miserable So to reduce this the machine will be useful.

1.1 DEFINITION AND NEED

Waste water is defined as the flow of used water from homes, Business Industries, Commercial activities and institutions which are subject to the treatment plants by a carefully designed and engineered network of pipes.

The biggest impact of cleaning the chemical wastes can cause respiratory diseases and it plays a challenging issue for the municipality officers . Nowadays, even through automation plays a vital role in all industrial applications in the proper disposal of sewage from industries and sewage cleaning is still a challenging task. Drainage pipes are used for the disposal of sewage and unfortunately sometimes there may be loss of human life while cleaning the blockage in the drainage pipes. As such condition the river cleaning machine is used to solve such type of problems.

II. LITERATURE REVIEW

This project emphasis on design of the river waste collection. Trillions of pieces of plastic currently pollute the seas, rivers, lakes, ocean harming sea life, contaminating ecosystems and making a mess on beaches. Thus It's important to clean up the plastic in the water, but nobody knows how best to do so yet. These days practically all the assembling procedure is being automized so as to convey the items at a quicker rate. Automation plays an important role in mass production. In this venture we have manufactured the remote worked waterway cleaning machine. Prime objective of our project is to collect all the wastes which are found floating on water bodies and to minimize labor work. These are done by using a hardware prototype and by using an Microcontroller for controlling all parts of a machine by using an smart phone by using Wi-Fi or Bluetooth. We have attempted to meet every one of the destinations to this item fruitful with the end goal that our item gets propelled in the market. The "Stream Waste authority machine" utilized in that places where there is squander flotsam and jetsam in the water body which are to be expelled. This machine is consists of waterwheel driven conveyer mechanism which collect & remove the wastage, garbage & plastic wastages from water bodies. This additionally lessen the challenges, which we face when gathering of flotsam and jetsam happen. A machine will lift the waste surface flotsam and jetsam from the water bodies, this will eventually result in decrease of water contamination and in conclusion the sea-going creature's demise to these issues will be diminished. It comprises of Belt drive component, which lifts the flotsam and jetsam from the water. The use of this project will be made in rivers, ponds and other water bodies to clean the surface water debris from bodies.

III. PROCESS OVERVIEW

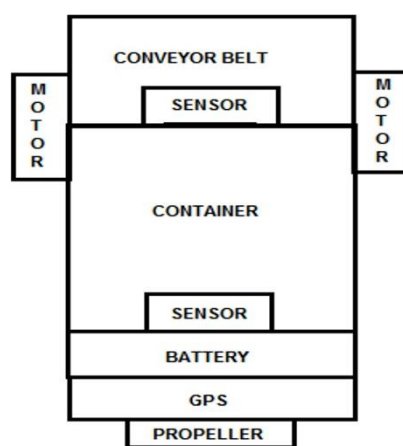


Fig 1 block diagram

The working of this machine is mainly based on Arduino Uno, Dc Motors, L298N motor Driver, Ultrasonic Sensor etc. Below is the The above Diagram shows an Arduino Uno, A Bread Board, Ultrasonic(HC-SR04),Motor Driver(L298N).The above connection is made to provide mobility to the machine, Here we have used Bluetooth module(HC-05),and Motor Driver(L298N) interfaced with the Arduino Uno. The smartphone is used to provide commands to the L298N motor driver using Bluetooth module and the machine will be controlled by the smartphone.

Schematic Diagram is shown below:

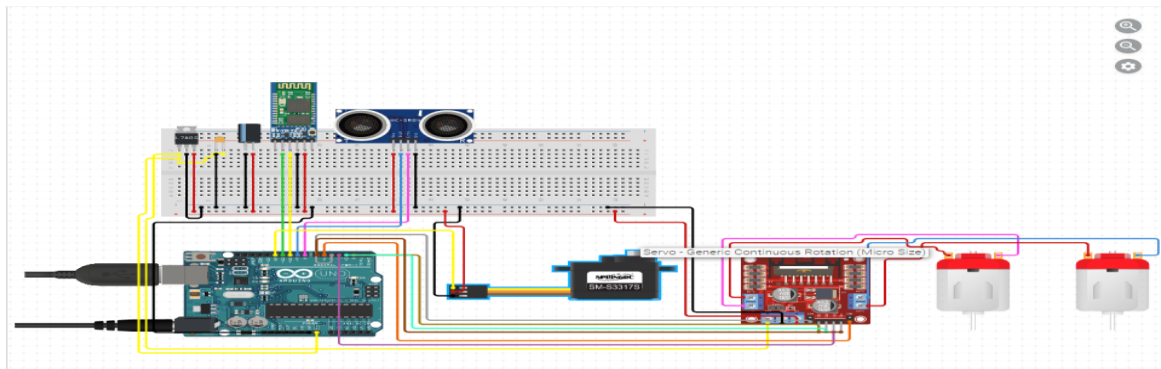


Fig 2.: Connections of various components

But as seen in the diagram there is a ultrasonic sensor which will be mounted in front of the machine to detect the obstacle present in front of the machine and the ultrasonic will be mounted over a servo motor which will move towards left then straight and then right and the side which will be clear the machine will move towards that side informing the controller about the obstacle and to take the other turn. The app that we will use to control the machine is an Android based app named as "Path Finder". It is shown below:



Fig 3.2.12: Path Finder Mobile App

First we "ON" the phone Bluetooth and then we connect it with the Bluetooth Module(HC-05) then we can control the machine manually or can set it to automatic mode so the machine can move without any human interference.

IV.ANALYSIS AND DISCUSSION

In future, this project can be improved to sort more categories of waste. In this system, we can use advance conveyor system and conveyor material for increasing the efficiency of collection of garbage. We can use the solar panel for providing power to the boat instead of battery operation. To modify the size of boat according to its waste collecting capacity is increases. This project makes only for small lake by doing some modification in its size and capacity it can use in big lake and river like Ganga. Also useful for local areas in low cost

V. CONCLUSION

This project design and analysis of river water cleaning machine.is fabricated on the basis of literature and research on different journal and paper relevantly available and fabricated in accordance so it can provide flexibility in operation. This innovation is easy and less costly and has lot of room to grow more economical. This project “River water Cleaning Machine” is designed with the hope that it is very much economical and helpful to river and Pond cleaning. On the basis of it design and estimating cost and availability it is very cheap and very useful for the society.

REFERENCES

- [1] Design of River Waste Collector Machine Using Arduino by K.P.M.Y.V.DATHU , M.M.KARUNAKAR ,Department of Electrical and Electronics Engineering , Andhra Loyola Institute of Engineering and Technology, Andhra Pradesh, Vijayawada, IndiaJagadev, Preeti, and H. G. Virani. "Detection of leukemia and its types using image processing and machine learning." Trends in Electronics and Informatics (ICEI), 2017 International Conference on. IEEE, 2017.
- [2] Design and Analysis of River Water Cleaning Machine by Madhavi N.Wagh, Kashinath Munde , Anantrao Pawar College of Engineering, Pune
- [3] . Design and Fabrication of River Cleaning Machine by Saifali Sayyad, Adarsh Dorlikar, Sneha Ratnaparkhi ,Department of Mechanical Engineering, RCERT Chandrapur, Maharashtra, India
- [4] Design And Fabrication Of River Cleaning Machine by Dr. Akash Langde , Dept of Mechanical Engineering , Anjuman college of Engineering and Technology Nagpur, Maharashtra, India