TECHNICAL PROJECT REPORT

TITLE OF INVENTION / PROJECT: **SMART DUSTBIN**

TEAM MEMBERS / INVENTORS:

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Section – 1 (IPR Related)

BRIEF ABSTRACT

- Problem your project is solving

  We made a product out of a dustbin, which is called SMART DUSTBIN. Being a machine, it eases human efforts. This basically senses the presence of any human or object around it and opens the cover of the bin for disposal of the waste. As automated doors, which sense object, our product too senses anything around it. Our product can be used in various day to day businesses like restaurants, shops, offices, even at home. With increasing waste generation this product definitely serves as a useful medium to encourage people use dustbin and **MAKE INDIA NEAT AND CLEAN.** our product serves as an aid in **swatch bharat abhiyaan.** Smart dustbin is a smart product for smart city.

- How are you solving that (solution)?

  1) For coding we used Arduino UNO.
  2) For power supply we used 12V dc battery. 3) For sensing the presence of objects, we used ultrasonic sensor.
  4) For pulling up the bin's cover we used 9g servomotor

Additional modifications that can cater to improved solution

AN IMPROVED VERSION WILL DEFINITELY BE MORE COMPACT, POWERFUL, AND DURABLE. WE CAN USE A POWER BATTERY TO HAVE MORE LIFE OF THE PRODUCT.

USING A BETTER AND POWERFUL SERVO, THIS PRODUCT CAN BE USED FOR HIGH LEVEL AND HEAVY WEIGHT COVERS SUCH AS USED IN RESTAURANTS.

EXISTING STATE-OF-THE-ART AND DRAWBACKS IN EXISTING STATE-OF-THE-ART

(*Brief background of the existing knowledge*)

S. No.	Existing state of art	Drawbacks in existing state of art
1	Patent no: WO2017175244A1	The already existing product is too expensive and is not compatible in every situation. Doesn't come in different sizes.

NOVEL/ADDITIONAL MODIFICATIONS THAT YOU CAN PROPOSE TO IMPROVE UPON

DRAWBACKS

• Product 's battery life is low.

• The product is delicate.

• The cover used is not durable

ADVANTAGES

• It is useful in our day to day life.

• It eases human efforts.

• Can be used in restaurants and in various other co-operations

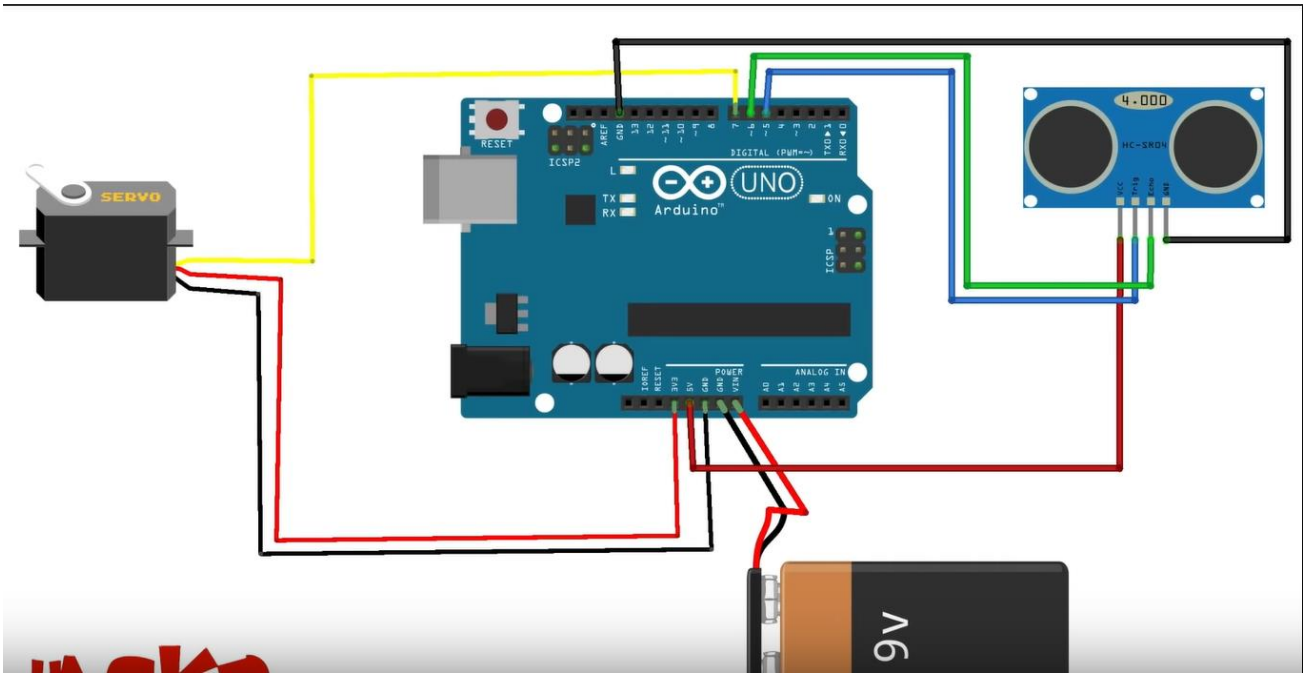
Section – 2 (Real Project)

MATERIALS USED

Serial number	Name	quantity	price
1	Arduino UNO	1	Rs 430/-
2	Ultrasonic sensor	1	Rs 79/-
3	9g servomotor	1	Rs 120/-
4	dustbin	1	Rs 100/-
5	Male to male jumper wires	3	Rs 10/-
6	Male to female jumper wires	15	Rs 50/-
7	cardboard	1	Rs 10/-
8	double tape	1	Rs 50/-
9	9V battery	1	Rs 20/-
10	thread	1	Rs 5/-

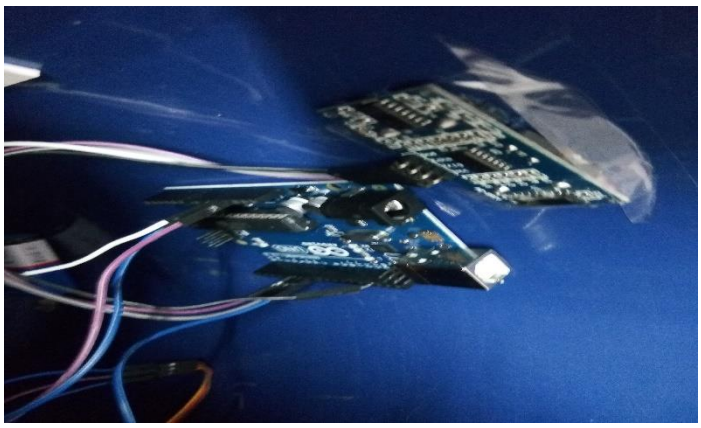
Total cost = 874/-

Circuit diagram

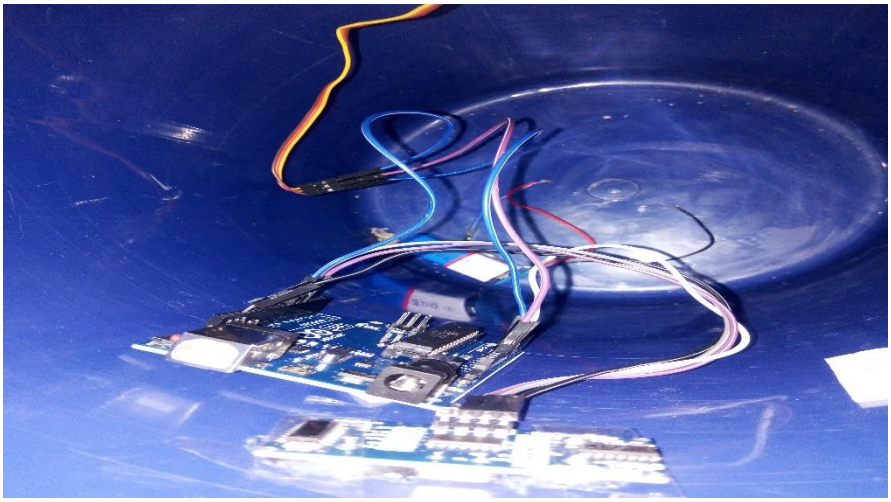


STEPS OF CIRCUIT COMPLETION

Step 1: connect VCC pin of ultrasonic sensor to 5V in Arduino, trig pin to pin 5 in digital side of Arduino, echo pin to 6 no. digital pin, and ground to ground in analog side of Arduino.



Step 2: connect + side of battery to Vin of Arduino and – to ground of Arduino.



Step 3: upload the code in Arduino.

Step 4: connect yellow wire of servo to 7th pin in digital side of Arduino, red wire of servo to eve pin of Arduino, black wire of servo to ground of Arduino.

Step 5: The circuit is complete, now just fit this in dustbin and we are ready to go.

PROGRAM CODE

https://github.com/divanshisethi9488/divanshisethi/blob/master/smartdustbin