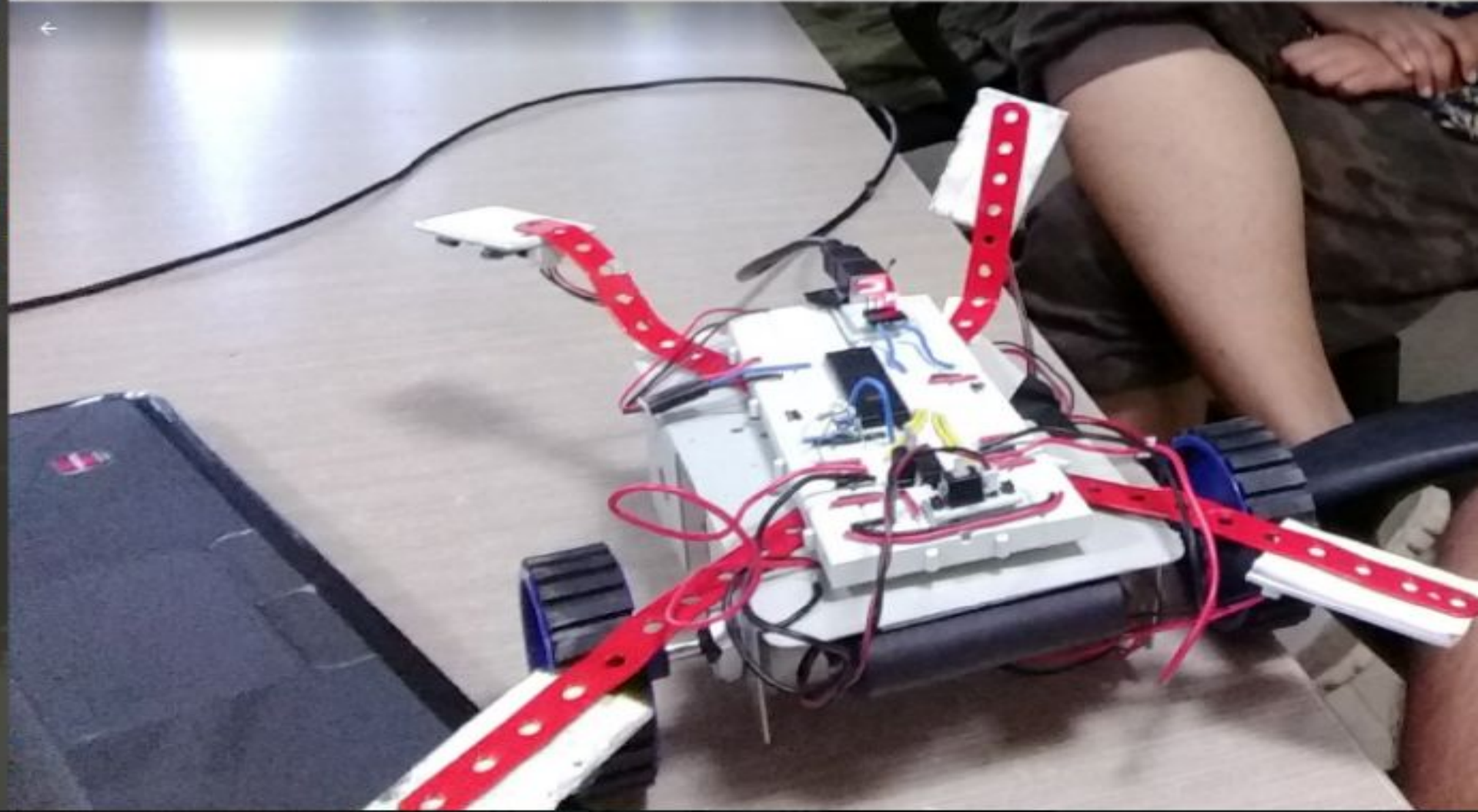


TABLE TOP

Robotics Club, IIT Palakkad



#	Sensor 1	Sensor 2	Sensor 3	Sensor 4	Action of robot	Left Motor	Right motor
0	LOW	LOW	LOW	LOW	Forward	Forward	Forward
1	LOW	LOW	LOW	HIGH	Turn Right	Forward	Reverse
1	LOW	LOW	HIGH	LOW	Turn Left	Reverse	Forward
1	LOW	HIGH	LOW	LOW	Turn Left	Reverse	Forward
1	HIGH	LOW	LOW	LOW	Turn Right	Forward	Reverse
2	LOW	LOW	HIGH	HIGH	Forward and Turn Left	Forward and Reverse	Forward and Forward
2	LOW	HIGH	HIGH	LOW	Turn Left and Forward	Reverse and Forward	Forward and Forward
2	HIGH	LOW	LOW	HIGH	Turn Right and Forward	Forward and Forward	Reverse and Forward
2	HIGH	HIGH	LOW	LOW	Back and Turn Left	Reverse and Reverse	Reverse and Forward
3	LOW	HIGH	HIGH	HIGH	Turn Left and Forward	Reverse and Forward	Forward and Forward
3	HIGH	LOW	HIGH	HIGH	Turn Right and Forward	Forward and Forward	Reverse and Forward
3	HIGH	HIGH	LOW	HIGH	Back and Turn Left	Reverse and Reverse	Reverse and Forward
3	HIGH	HIGH	HIGH	LOW	Back and Turn Right	Reverse and Forward	Reverse and Reverse



table_top

//-----Global declaration-----//

//motor

int lm_pin1=2; //-----Changes

int lm_pin2=3;

int rm_pin1=4;

int rm_pin2=5;

//sensor

int left_tops_pin=6;

int right_tops_pin=7;

int left_bots_pin=8;

int right_bots_pin=9;

int left_tops_value;

int right_tops_value;

int left_bots_value;

int right_bots_value;

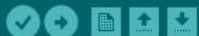
//-----function definition-----//

Done Saving.

Sketch uses 2514 bytes (7%) of program storage space. Maximum is 32256 bytes.

Global variables use 192 bytes (9%) of dynamic memory, leaving 1856 bytes for local variables. Maximum is 2048 bytes.





table_top

```
//-----function defination-----//
```

```
void read_sen_value()
```

```
{
```

```
    right_tops_value = digitalRead(right_tops_pin);
```

```
    left_tops_value = digitalRead(left_tops_pin);
```

```
    right_bots_value = digitalRead(right_bots_pin);
```

```
    left_bots_value = digitalRead(left_bots_pin);
```

```
}
```

```
void check_direction_move()
```

```
{
```

```
    //SENSOR OUT OF TABLE = no one
```

```
    if(left_tops_value == 0 && right_tops_value == 0 && right_bots_value == 0 && left_bots_value == 0) //WWWW
```

```
    {
```

```
        forward();//forward
```

```
        delay(300);
```

```
    }
```

```
    //SENSOR OUT OF TABLE = no one
```

Done Saving.

Sketch uses 2514 bytes (7%) of program storage space. Maximum is 32256 bytes.

Global variables use 192 bytes (9%) of dynamic memory, leaving 1856 bytes for local variables. Maximum is 2048 bytes.





table_top \$

```
//SENSOR OUT OF TABLE = left_bot (4)
else if(left_tops_value == 0 && right_tops_value == 0 && right_bots_value == 0 && left_bots_value == 1)//WWWB
{
    forward();//forward
    delay(300);
    right();//right
    delay(300);
}
//SENSOR OUT OF TABLE = right_bot (3)
else if(left_tops_value == 0 && right_tops_value == 0 && right_bots_value == 1 && left_bots_value == 0)//WWBW
{
    forward();//forward
    delay(300);
    left();//left
    delay(300);
}
//SENSOR OUT OF TABLE = right_bot, left_bot (3,4)
else if(left_tops_value == 0 && right_tops_value == 0 && right_bots_value == 1 && left_bots_value == 1)//WWBR
```

Done Saving.





table_top

```
//SENSOR OUT OF TABLE = right_bot, left_bot (3,4)
else if(left_tops_value == 0 && right_tops_value == 0 && right_bots_value == 1 && left_bots_value == 1)//WWBB
{
    forward();//forward
    delay(300);
}
//SENSOR OUT OF TABLE = right_top (2)
else if(left_tops_value == 0 && right_tops_value == 1 && right_bots_value == 0 && left_bots_value == 0)//WBWW
{
    reverse();//reverse
    delay(300);
    left();//left
    delay(300);
}
//SENSOR OUT OF TABLE = right_top, left_bot (2,4)
else if(left_tops_value == 0 && right_tops_value == 1 && right_bots_value == 0 && left_bots_value == 1)//WBWB
{
    STOP();//STOP
    delay(300);
}
```

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Sketch uses 2514 bytes (7%) of program storage space. Maximum is 32256 bytes.

74

Arduino/Genuino Uno on COM10



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table_top

```
//SENSOR OUT OF TABLE = right_top, right_bot (2,3)
else if(left_tops_value == 0 && right_tops_value == 1 && right_bots_value == 3 && left_bots_value == 0)//WBBW
{
    left();//left
    delay(300);
}
//SENSOR OUT OF TABLE = right_top, right_bot, left_bot (2,3,4)
else if(left_tops_value == 0 && right_tops_value == 1 && right_bots_value == 1 && left_bots_value == 1)//WBBB
{
    left();//left
    delay(300);
}
//SENSOR OUT OF TABLE = left_top (1)
else if(left_tops_value == 1 && right_tops_value == 0 && right_bots_value == 0 && left_bots_value == 0)//BWWW
{
    reverse();//reverse
    delay(300);
    right();//right
    delay(300);
}
```

Done Saving.

Sketch uses 2514 bytes (7%) of program storage space. Maximum is 32256 bytes.

94

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table_top

```
//SENSOR OUT OF TABLE = left_top, left_bot (1,4)
else if(left_tops_value == 1 && right_tops_value == 0 && right_bots_value == 0 && left_bots_value == 1)//BWBB
{
    right();//right
    delay(300);
}
//SENSOR OUT OF TABLE = left_top, right_bot (1,3)
else if(left_tops_value == 1 && right_tops_value == 0 && right_bots_value == 1 && left_bots_value == 0)//BWBW
{
    STOP();//STOP
    delay(300);
}
//SENSOR OUT OF TABLE = left_top, right_bot, left_bot (1,3,4)
else if(left_tops_value == 1 && right_tops_value == 0 && right_bots_value == 1 && left_bots_value == 1)//BWBB
{
    right();//right
    delay(300);
}
```

Done Saving.

Sketch uses 2514 bytes (7%) of program storage space. Maximum is 32256 bytes.

112

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table_top

```
//SENSOR OUT OF TABLE = left_top, right top (1,2)
else if(left_tops_value == 1 && right_tops_value == 1 && right_bots_value == 0 && left_bots_value == 0)//BBWW
{
    reverse();//reverse
    delay(300);
    right();//right
    delay(300);
}
//SENSOR OUT OF TABLE = left_top, right top, left_bot (1,2,4)
else if(left_tops_value == 1 && right_tops_value == 1 && right_bots_value == 0 && left_bots_value == 1)//BBWB
{
    right();//right
    delay(300);
}
```

Done Saving.





table_top

```
}  
//SENSOR OUT OF TABLE = left_top, right_top, right_bot (1,2,3)  
else if(left_tops_value == 1 && right_tops_value == 1 && right_bots_value == 1 && left_bots_value == 0)//BBBW  
{  
  left();//left  
  delay(300);  
}  
//SENSOR OUT OF TABLE = left_top, right_top, right_bot, left_bot (1,2,3,4)  
else if(left_tops_value == 1 && right_tops_value == 1 && right_bots_value == 1 && left_bots_value == 1)//BBBB  
{  
  STOP();//STOP  
  delay(300);  
}  
}  
  
void forward()  
{  
  digitalWrite(lm_pin1, 1);  
}
```

Done Saving.



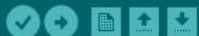


table_top

```
}  
  
void forward()  
{  
  digitalWrite(lm_pin1, 1);  
  digitalWrite(lm_pin2, 0);  
  digitalWrite(rm_pin1, 1);  
  digitalWrite(rm_pin2, 0);  
}  
  
void reverse()  
{  
  digitalWrite(lm_pin1, 0);  
  digitalWrite(lm_pin2, 1);  
  digitalWrite(rm_pin1, 0);  
  digitalWrite(rm_pin2, 1);  
}  
  
void left()  
{  
  digitalWrite(lm_pin1, 0);  
  digitalWrite(lm_pin2, 1);  
  digitalWrite(rm_pin1, 1);  
  digitalWrite(rm_pin2, 0);  
}
```

Done Saving.





```
table_top
digitalWrite(rm_pin2, 0);
}
void right()
{
    digitalWrite(lm_pin1, 1);
    digitalWrite(lm_pin2, 0);
    digitalWrite(rm_pin1, 0);
    digitalWrite(rm_pin2, 1);
}
void STOP()
{
    digitalWrite(lm_pin1, 0);
    digitalWrite(lm_pin2, 0);
    digitalWrite(rm_pin1, 0);
    digitalWrite(rm_pin2, 0);
}
```

Done Saving.





table_top

```
//-----setup-----  
void setup() {  
  Serial.begin(9600);  
  
  delay(2000);  
  
  pinMode(rm_pin1, OUTPUT); //motor          //<-----Changes  
  pinMode(rm_pin2, OUTPUT);  
  pinMode(lm_pin1, OUTPUT);  
  pinMode(lm_pin2, OUTPUT);  
  
  pinMode(right_tops_pin, INPUT); //input  
  pinMode(left_tops_pin, INPUT);  
  pinMode(right_bots_pin, INPUT);  
  pinMode(left_bots_pin, INPUT);  
}
```

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table_top

```
pinMode(right_tops_pin, INPUT); //input  
pinMode(left_tops_pin, INPUT);  
pinMode(right_bots_pin, INPUT);  
pinMode(left_bots_pin, INPUT);  
}
```

```
//-----loop-----//
```

```
void loop() {  
  read_sen_value();  
  
  check_direction_move();  
}
```

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