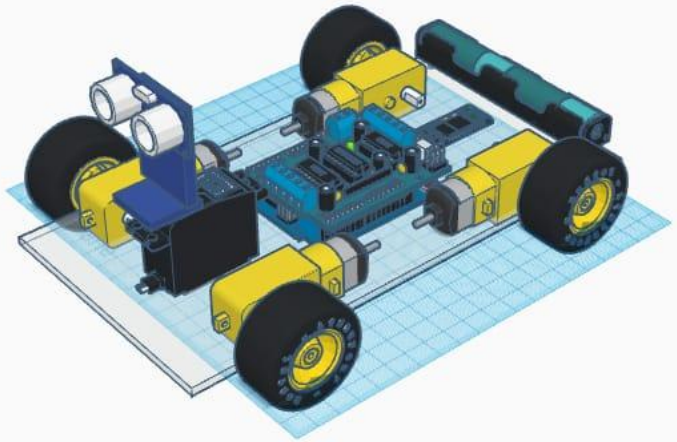
Bluetooth controlled smart car



Why did we choose this project?

- **The most beneficial**

  Among all the other projects this one was more appealing

- **Coping with technology and the world of robotics**

- **Easily modified to be applicable in several fields**

About the car..

As technology progresses, so too does the scope of what is considered robotics...our car is a semi-autonomous bot that uses a wireless network to enable human control from a safe distance

A combination of data science and robotics, self-driving vehicles are taking the world by storm. Automakers, like **Tesla, Ford, Waymo, Volkswagen and BMW** are all working on the next wave of travel that will let us sit back, relax and enjoy the ride. Rideshare companies Uber and Lyft are also developing autonomous rideshare vehicles that don't require humans to operate the vehicle

Advantages

The power efficiency

The device consumes less power

Ease of use

Operated easily by your phone by using Bluetooth connection of android system

Protection of human beings

Protection of human beings or living organisms from respiratory track or inflammation of eye for human beings as a result doesn't produce CO

Effects on nature

It protects nature from devastating effects on plants as it doesn't emit gases as NOx which causes falling of their leaves

Environmental sustainability

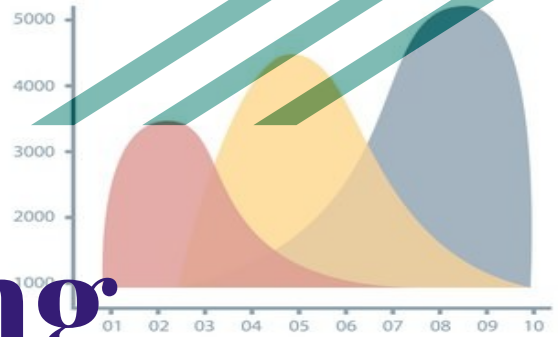
Air pollution

it doesn't support the emission of harmful gases that can cause air and water pollution, for it doesn't produce CO or NOx or Sox…etc

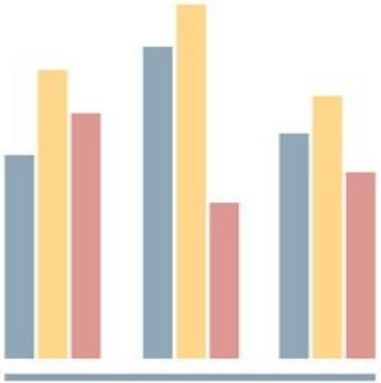
Source of energy

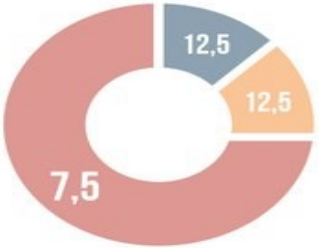
Our prototype works by electric energy which is eco friendly, however it can be replaced by solar energy generated through solar panels allowing us to use renewable energy.

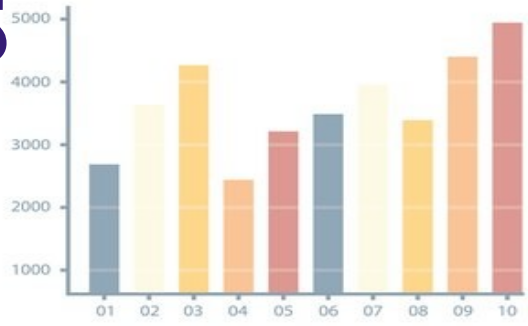
Quotes for illustration purposes only



Marketing surveys





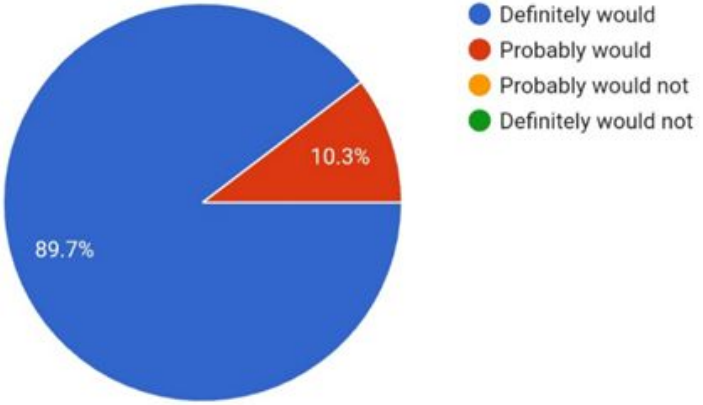


“The first step in exceeding your customer expectations is to know these expectations “

Roy H. Williams

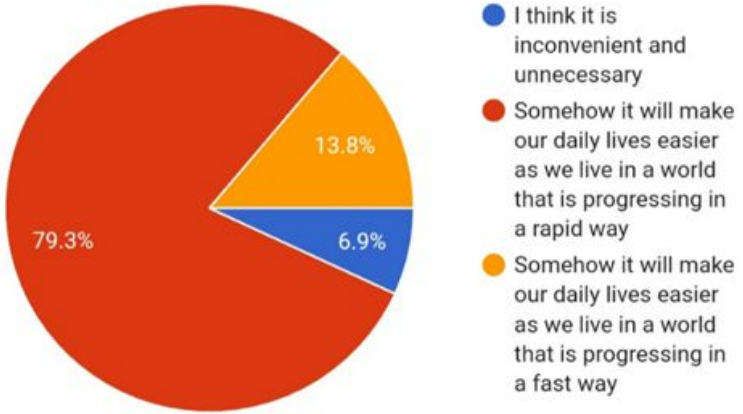
Some Market Survey Questions and Results:

As technology evolves, robotics is used in our lives more often now. Do you think that will affect our daily lives in the future?



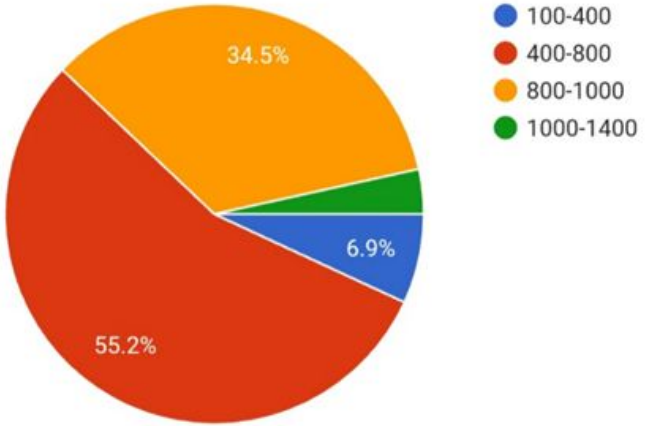
Some Market Survey Questions and Results:

What do you think about using smart cars in our daily lives?

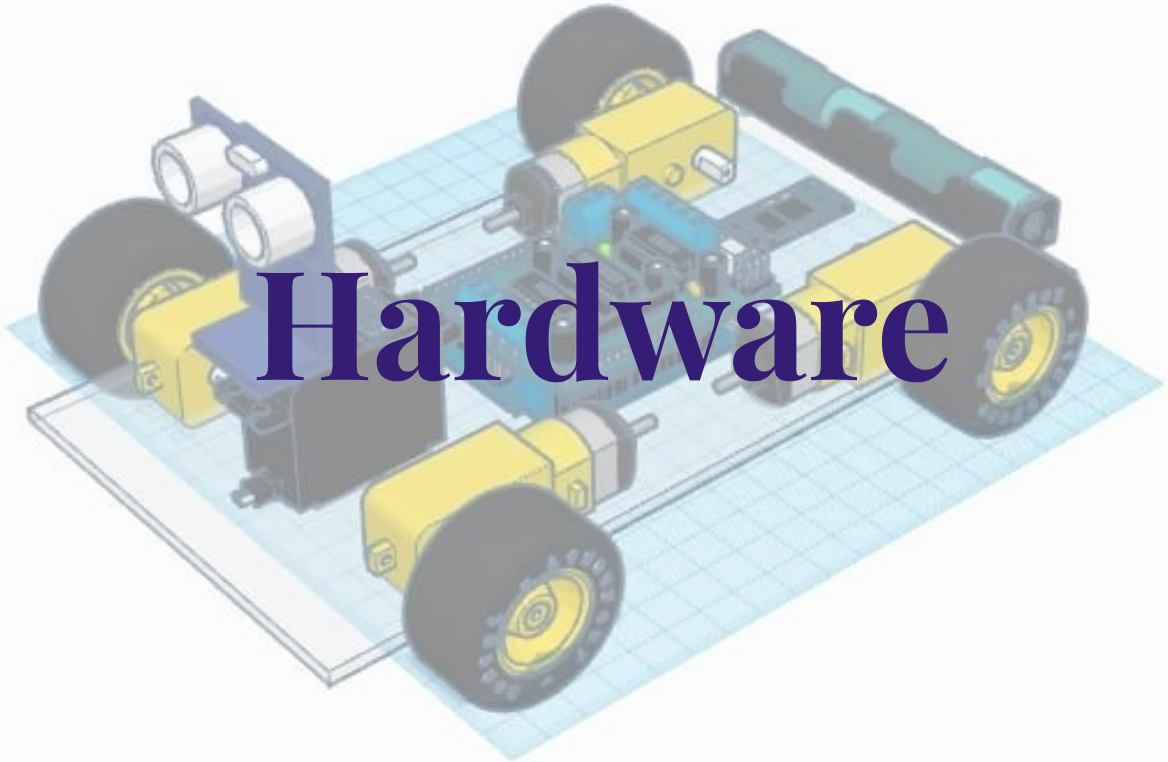


Some Market Survey Questions and Results:

If you want to buy such a product that theoretically last and is convenient as most of us like quality over price, then how much are you willing to pay for it?



Hardware



Components

1-4x wheels.

2-4xDC Gearbox motors “TTMotor”

3-Car kit

4-Arduino uno board R3

5-Bluetooth module “HC-05”

6-Motor driver

7-Jumper wires

8-3x Buttery

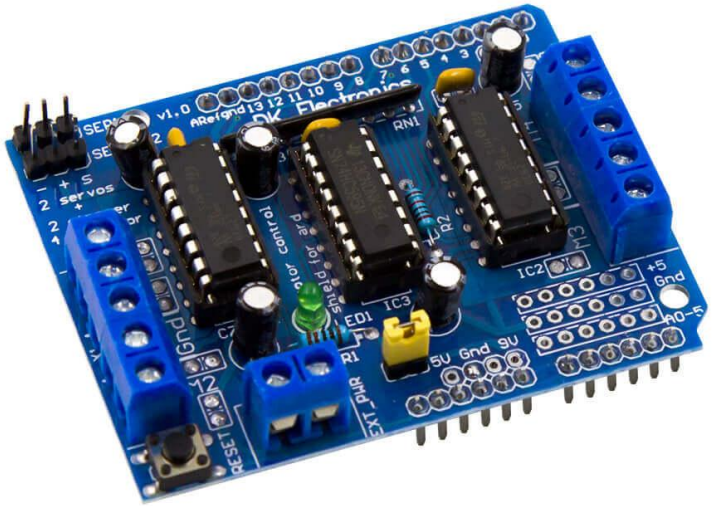
9-Buttery holder

10-USB

Arduino uno

1)the core component
2) method of working

Note : we must remove or detach the Bluetooth connected to it while uploading the code



Motor driver shield

”H-bridgeL293D” .

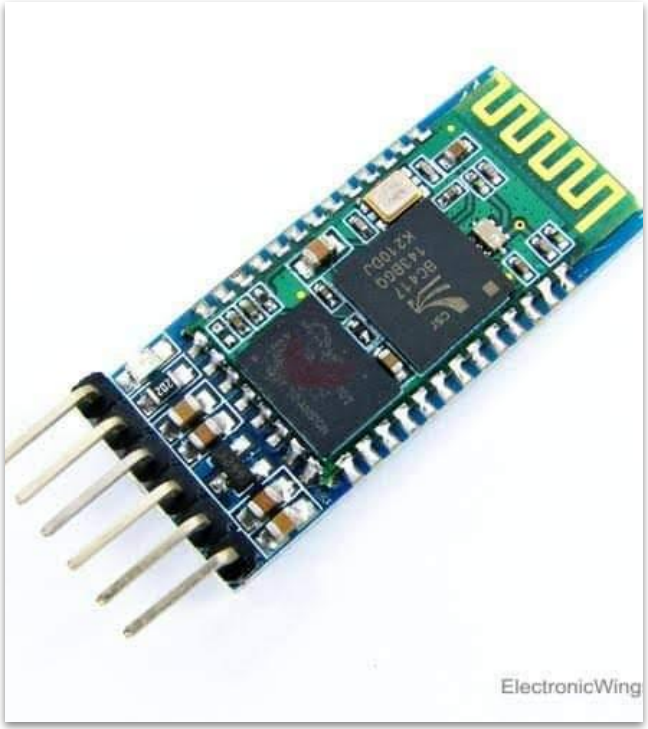
1) Method of working
2) It controls 4 gearboxes maximum

4x wheels

4x DC Gearbox motor

“TTMotor”

1)linking the gearbox with wheels and motor driver
2)method of working
3)how to determine using gearbox



Bluetooth module “HC-05”

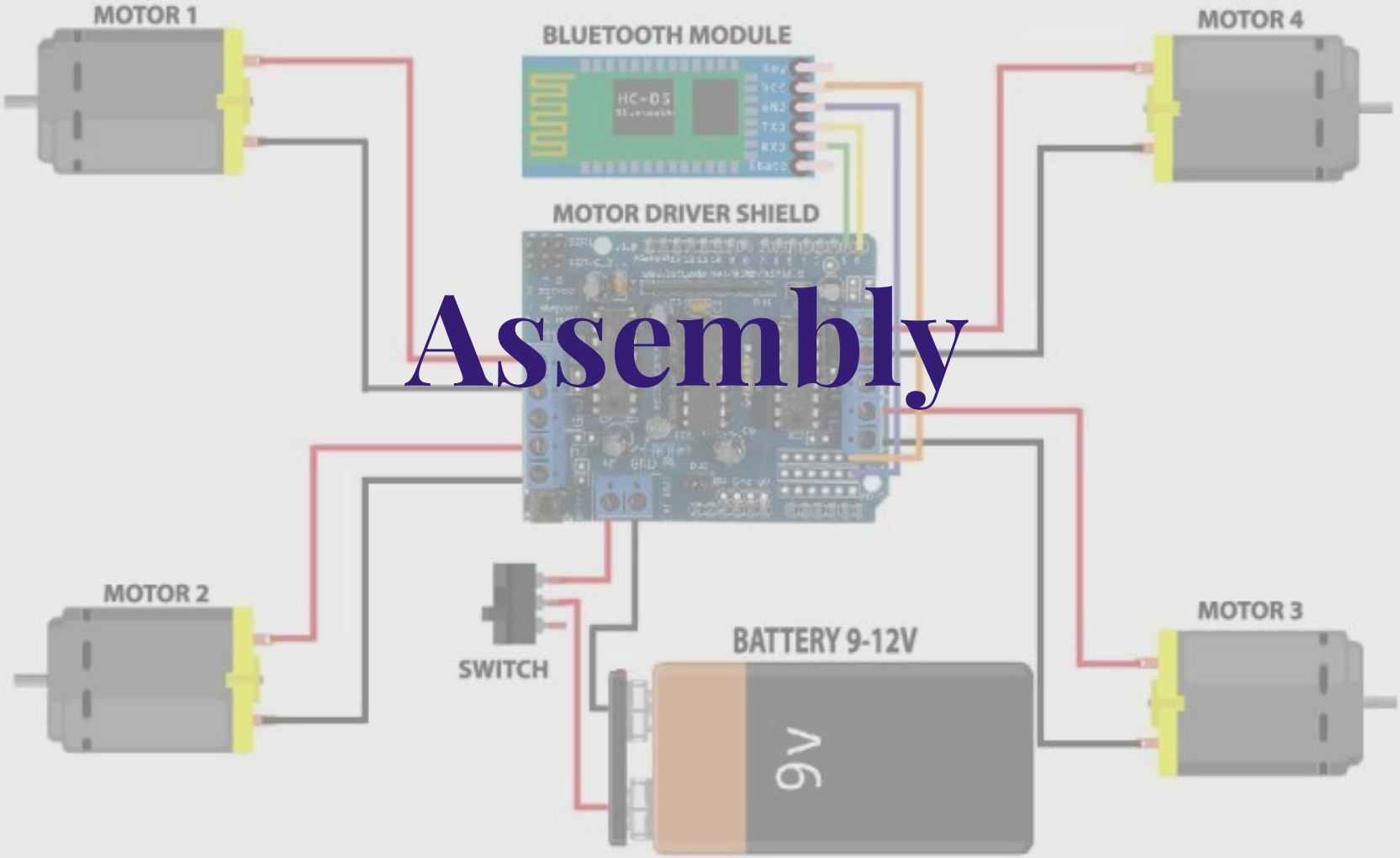
1) It has 6 terminals four of them are connected to motor driver
2) It can easily operate and simple to use and configured with arduino
3) Method of working

Battery holders

Lithium battery

Jumper wires

USB cable


MOTOR 1
BLUETOOTH MODULE
MOTOR 4
MOTOR DRIVER SHIELD
MOTOR 2
SWITCH
BATTERY 9-12V
MOTOR 3
9v

Assembly

Software

```
#include <AFMotor.h>
AF_DCMotor motor1(1);
AF_DCMotor motor2(2);
AF_DCMotor motor3(3);
AF_DCMotor motor4(4);
char command;
void setup()
{
 Serial.begin(9600);
}
void loop(){
 if(Serial.available() > 0){
 command = Serial.read();
 Stop();
```

```
 Serial.println(command);
 switch(command){
 case 'F':
 forward();
 break;
 case 'B':
 back();
 break;
 case 'L':
 left();
 break;
 case 'R':
 right();
 break;
 }
 }
}
```

```
void forward()
{
 motor1.setSpeed(255); //Define
maximum velocity
 motor1.run(FORWARD); //rotate
the motor clockwise
 motor2.setSpeed(255); //Define
maximum velocity
 motor2.run(FORWARD); //rotate
the motor clockwise
 motor3.setSpeed(255);//Define
```

```
maximum velocity
 motor3.run(FORWARD); //rotate the
motor clockwise
 motor4.setSpeed(255);//Define
maximum velocity
 motor4.run(FORWARD); //rotate the
motor clockwise
}
```

```
void back()
{
 motor1.setSpeed(255);
//Define maximum velocity
 motor1.run(BACKWARD);
//rotate the motor
anti-clockwise
 motor2.setSpeed(255);
//Define maximum velocity
 motor2.run(BACKWARD);
//rotate the motor
anti-clockwise
 motor3.setSpeed(255); //Define
maximum velocity
 motor3.run(BACKWARD); //rotate
the motor anti-clockwise
 motor4.setSpeed(255); //Define
maximum velocity
 motor4.run(BACKWARD); //rotate
the motor anti-clockwise
}
void left()
{
 motor1.setSpeed(255); //Define
maximum velocity
 motor1.run(BACKWARD); //rotate
the motor anti-clockwise
```

```
 motor2.setSpeed(255); //Define
maximum velocity
 motor2.run(BACKWARD);
//rotate the motor anti-clockwise
 motor3.setSpeed(255); //Define
maximum velocity
 motor3.run(FORWARD); //rotate
the motor clockwise
 motor4.setSpeed(255); //Define
maximum velocity
 motor4.run(FORWARD); //rotate
the motor clockwise
}
```

```
void right()
{
 motor1.setSpeed(255); //Define
maximum velocity
 motor1.run(FORWARD); //rotate
the motor clockwise
 motor2.setSpeed(255); //Define
maximum velocity
 motor2.run(FORWARD); //rotate
the motor clockwise
 motor3.setSpeed(255); //Define
maximum velocity
 motor3.run(BACKWARD); //rotate
the motor anti-clockwise
```

```
motor4.setSpeed(255); //Define
maximum velocity
 motor4.run(BACKWARD); //rotate
the motor anti-clockwise
}
void Stop()
{
 motor1.setSpeed(0); //Define
minimum velocity
 motor1.run(RELEASE); //stop the
motor when release the button
 motor2.setSpeed(0); //Define
minimum velocity
```

```
   motor2.run(RELEASE); //rotate
the motor clockwise
 motor3.setSpeed(0); //Define
minimum velocity
 motor3.run(RELEASE); //stop the
motor when release the button
 motor4.setSpeed(0); //Define
minimum velocity
 motor4.run(RELEASE); //stop the
motor when release the button
}
```

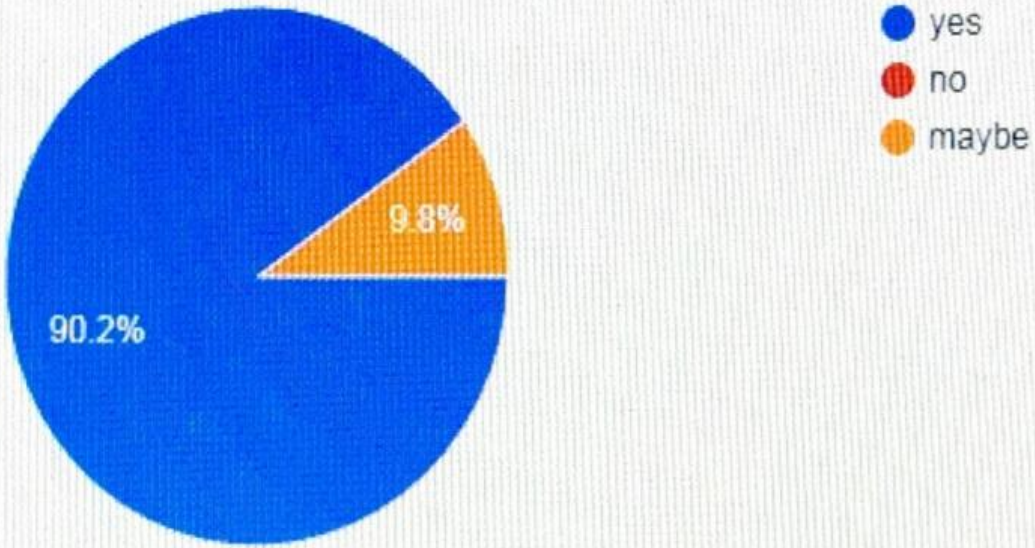
Social media

The power of social media

1. The first place consumers go to find review
2. Plays a huge role in the success any product
3. Help in increasing the sales
4. Help in launching any product
5. We can know from it the opinions of our consumers

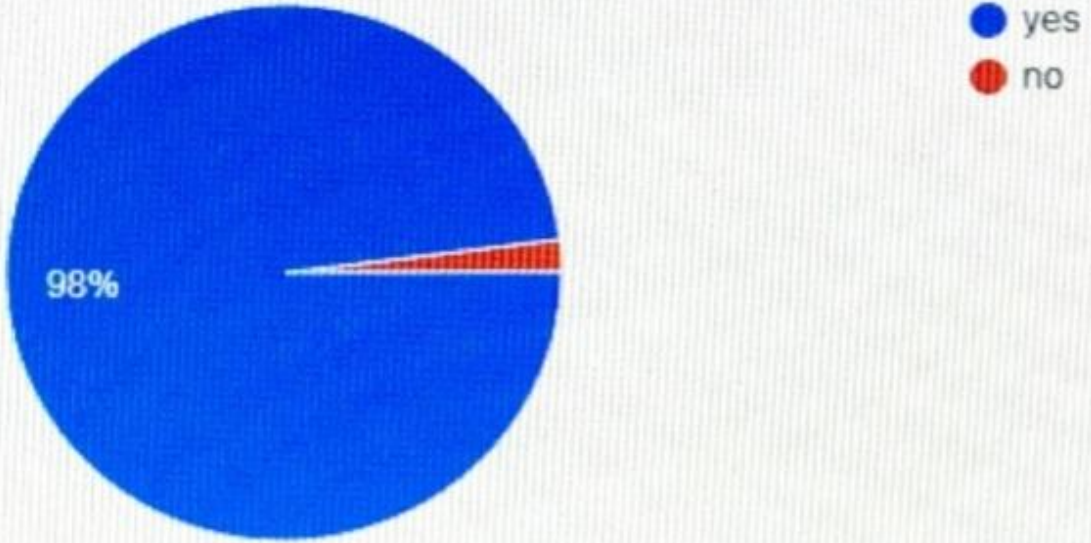
We tried to use cheap yet effective materials while working on the project to produce the same results but with lower price, would you think of this as a pro?حاولنا نستخدم ادوات بسعر ارخص بس ف نفس الوقت تقدم نفس المطلوب بجودة كويسة,شايف أن دى حاجة أصح؟

51 responses



Do you think our project fulfilled the desired requirements regarding the specifications?تفتكر اننا قدرنا نحقق الشروط المطلوبة من حيث المواصفات؟

51 responses



Some suggestion and uses offered by the consumers to us :

1. Add a mic for spying
2.Install a camera to the vehicle
3.Add a sensor to avoid obstacles
4.Add a GPS
5.Add more security precautions for example a warning system

Where could our smart car be used?

There are alot of things that could be added to our car depending on where it is used, for example:

In security field and safety field

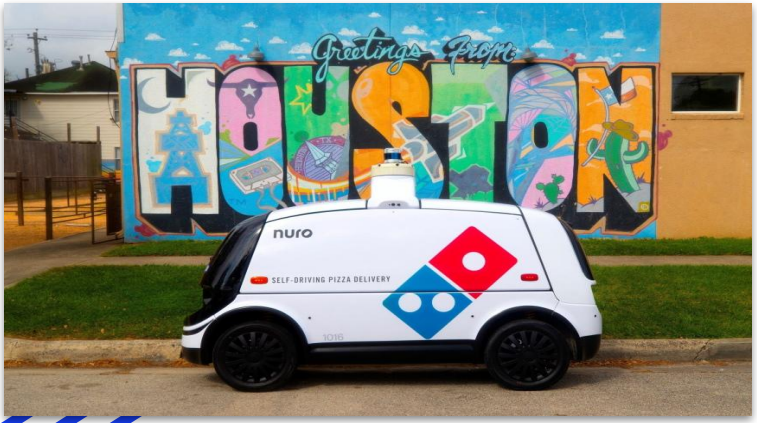
Our car may be used in industrial plants,oil ,gas and chemical production facility.

Things like gas detectors , PIR ,metal detection sensor , temperature sensor are added to provide more security.

Our car can be used for border security it can detect gases which can lead to explosion and it is also able to detect bombs .

They are provided with video surveillance and different sensors .They are used as cops to detect undesirable social behaviors like smoking in prohibited areas, improperly parked bicycles and congregation of more than five people in singapore.

In hotels and restaurants



They are used nowadays to deliver food which is cost-effective and help reduce human contact

Source: travel

They are also used as waiters in hotels and restaurants.

In medical field

In china they were used in hospitals and public places to clean , take temperatures,deliver medicine to patients , deliver food, to minimize contact between people.

Also in china they were used as disinfecting car that can disinfect over 10,000 square meters in an hour.

Presented to you by:

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Thank you!