DIY 6-Axis Servos Control Palletizing Robot Arm Model for Arduino UNO MEGA2560

From SainSmart Wiki

Contents

SainSmart DIY 6-Axis Servos Control Palletizing Robot Arm

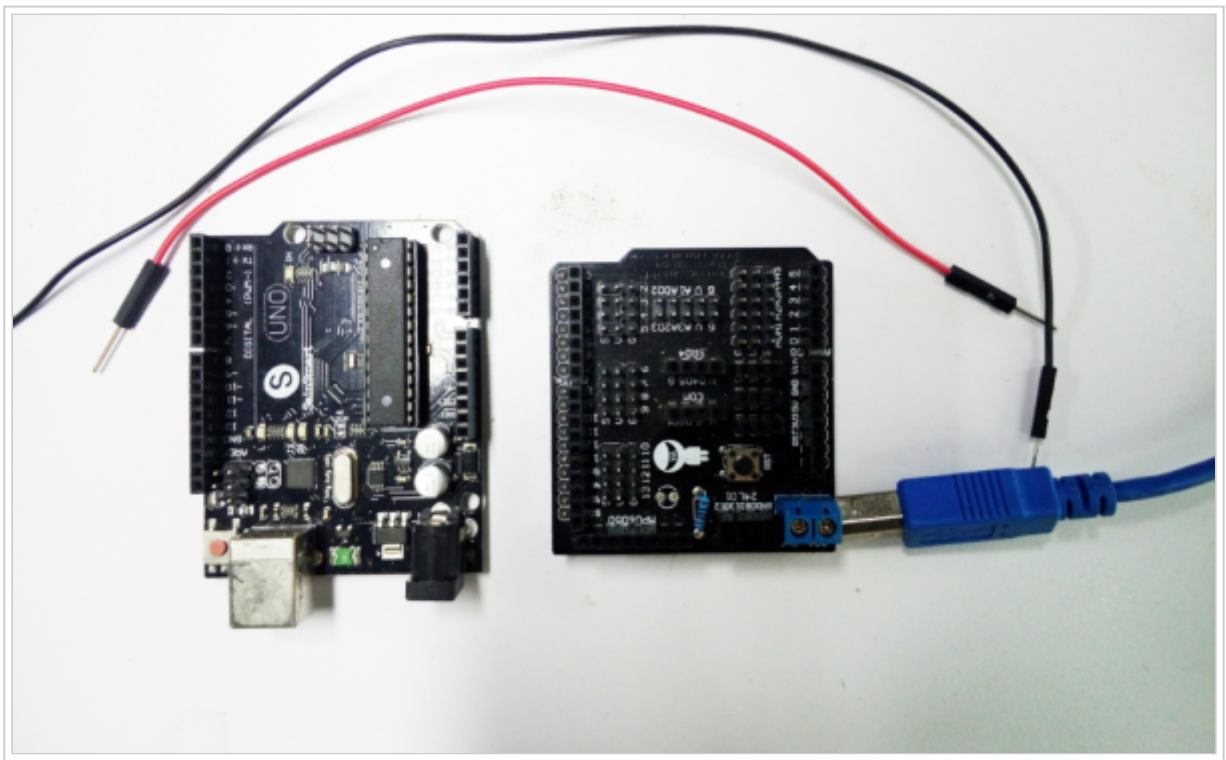
Introduction

SainSmart DIY 6-Axis Servos Control Palletizing Robot Arm Model for Arduino UNO MEGA2560

- Simulate real palletizing robot arm structure
- PVC material, CNC processing
- Adopts MG996 55g metal gear servo 4pcs
- Active joint bearing connection

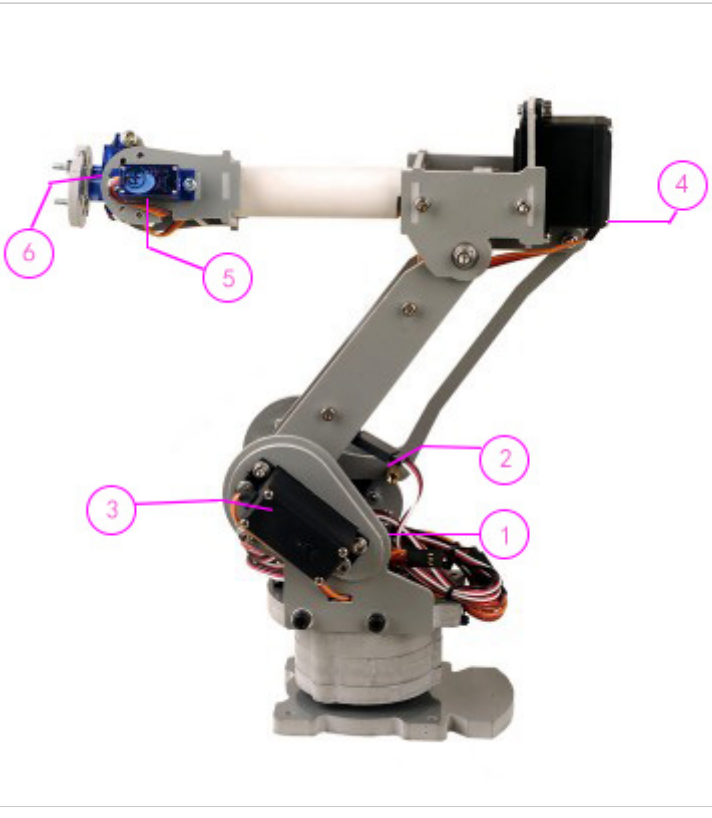
Preparations

- Arduino UNO board x1
- SainSmart sensor shield x1
- DC Power supply x1
- USB cable x1
- Connect wire x2
- SainSmart DIY 6-Axis Servos Control Palletizing Robot Arm x1

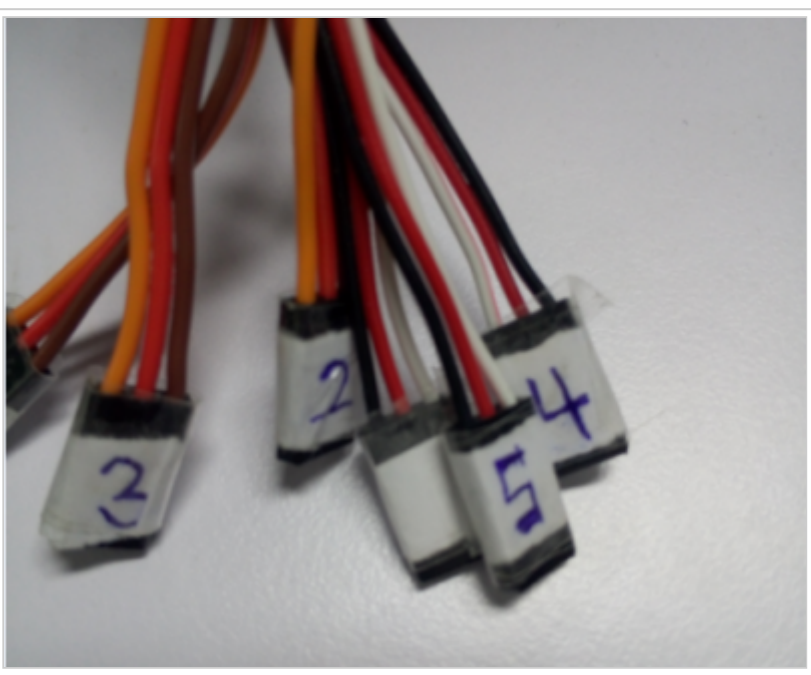


Detail Step to Getting Start

Step1.Give number to each servo and Mark the cable

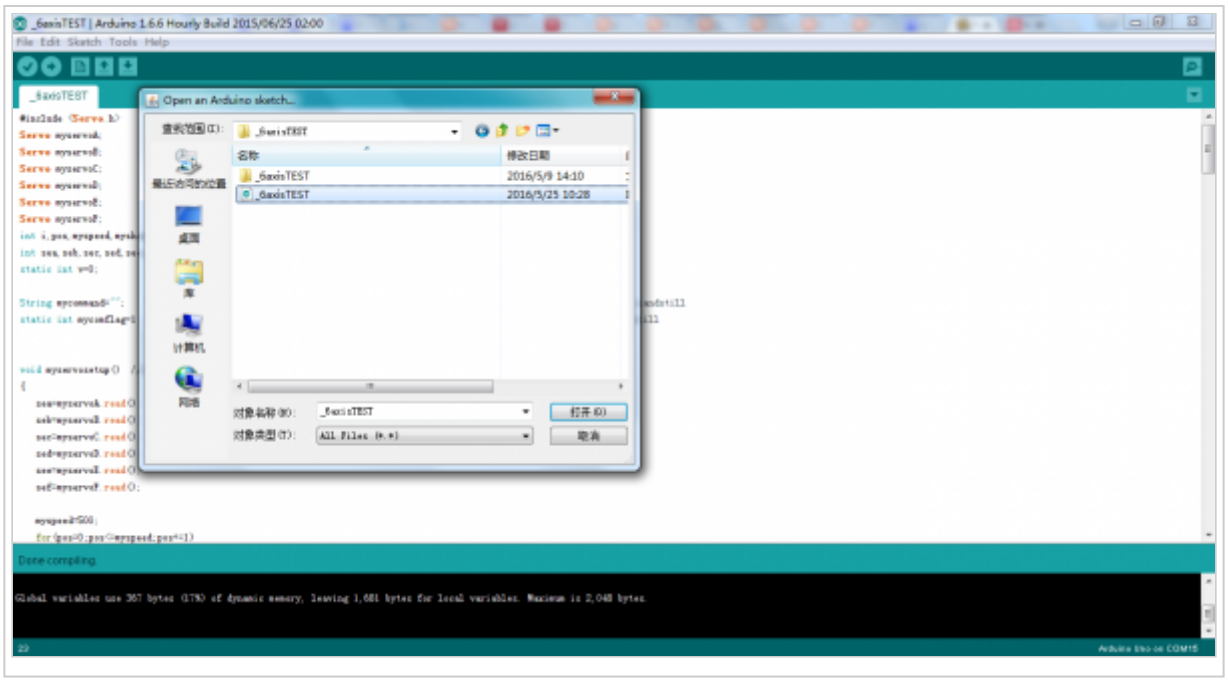


Servo Number 1-6

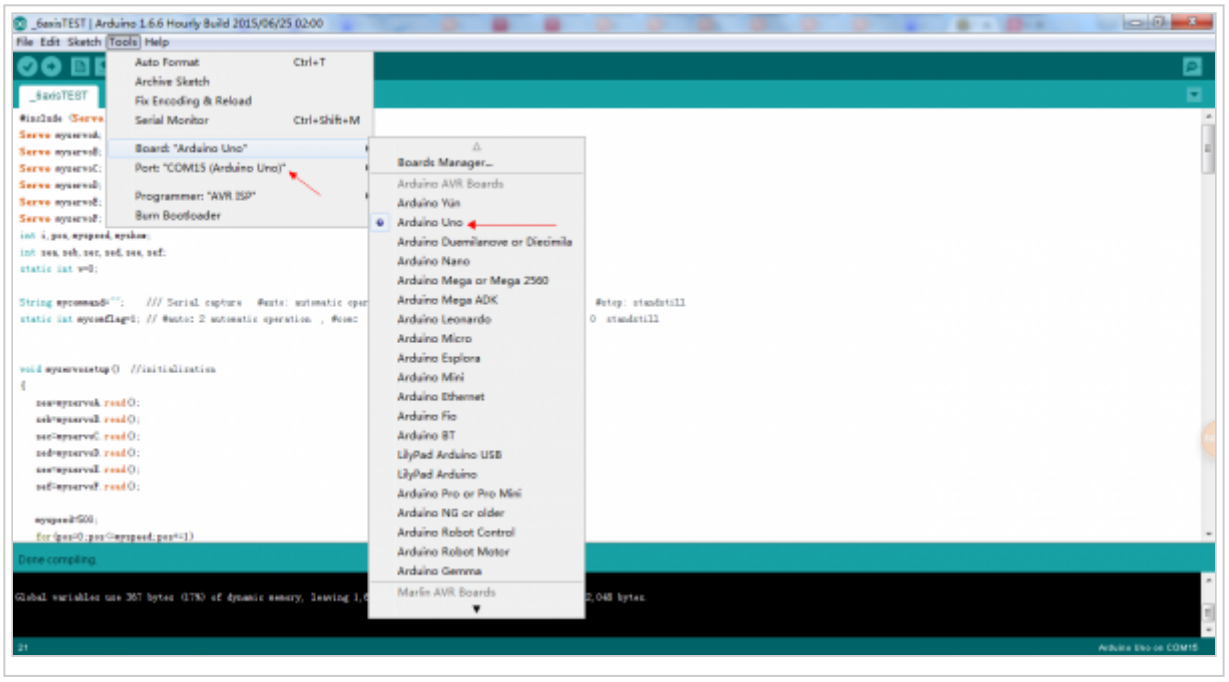


CableNumber 1-6

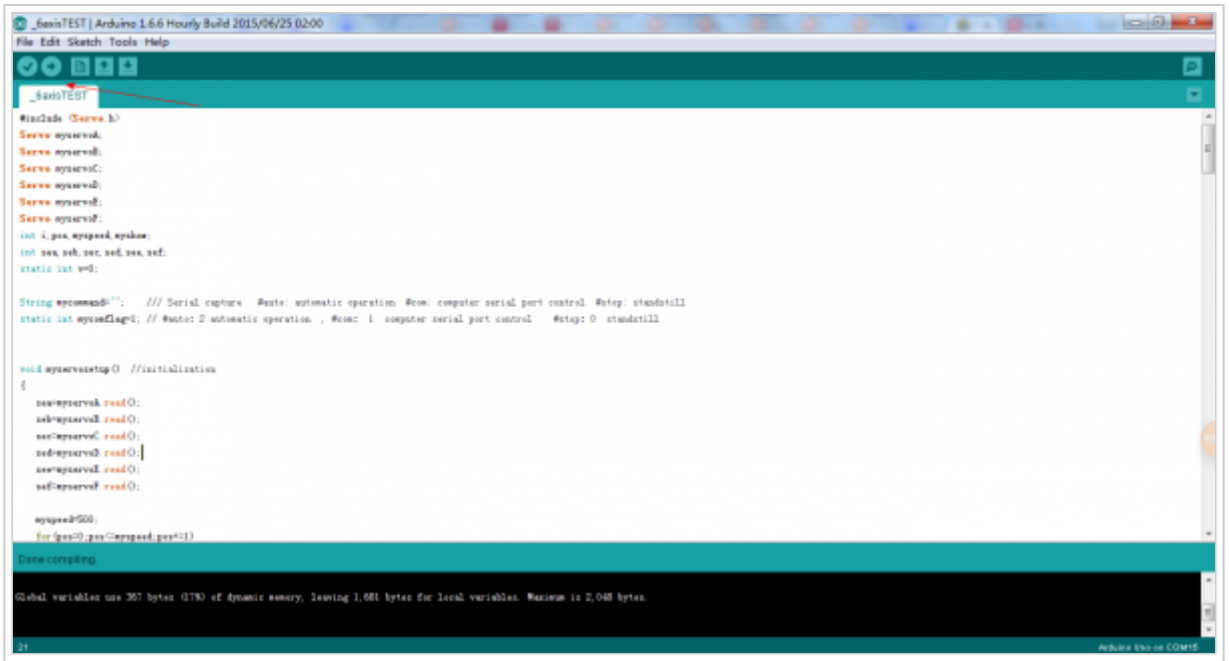
Step2.Upload the test code to Arduino UNO



Choose the .ino file and open it by Arduino IDE



Choose"Arduino UNO" "COM UNO" on Arduino IDE

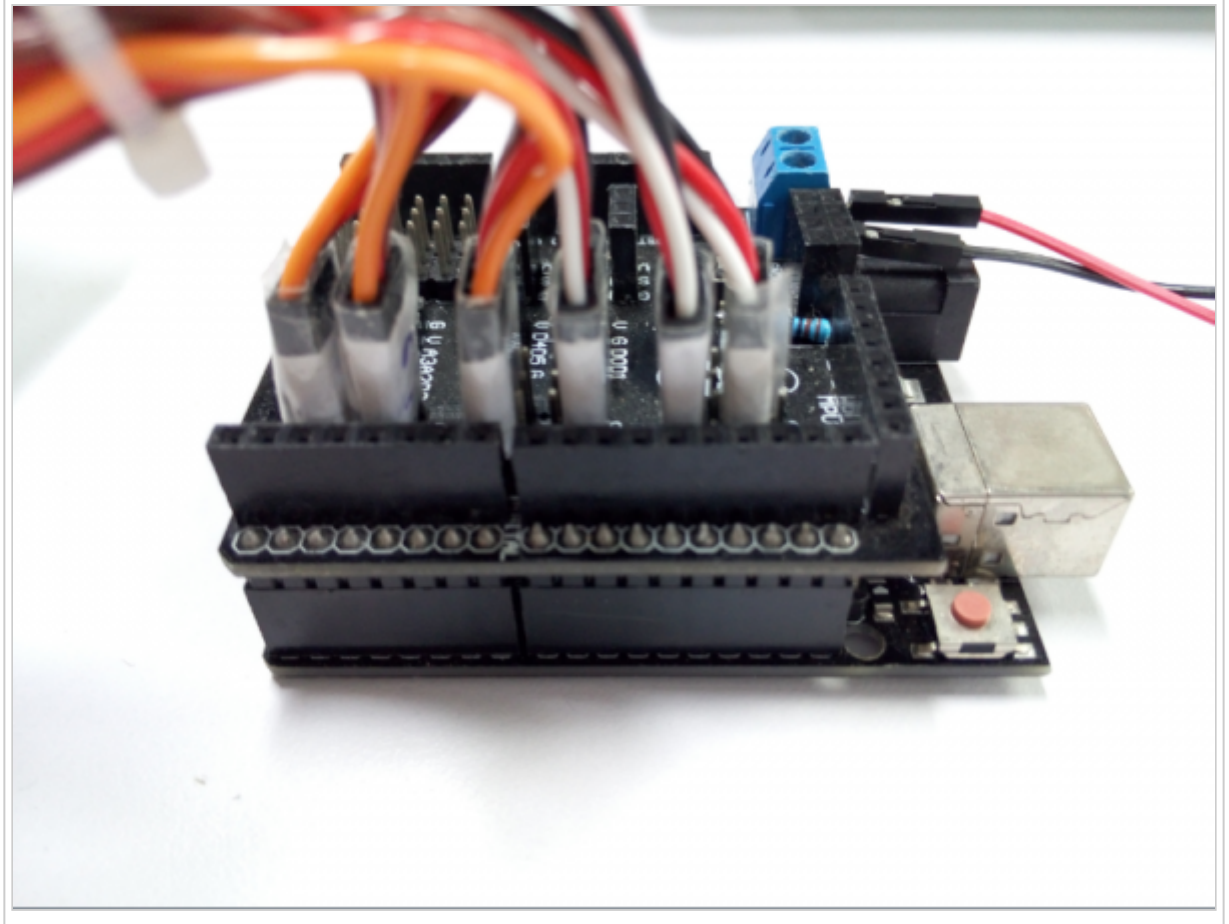


Click *verify* then Click *upload* Make sure upload the test code successful

Step 3.Connect the 6-Axis Robot Arm to Arduino UNO

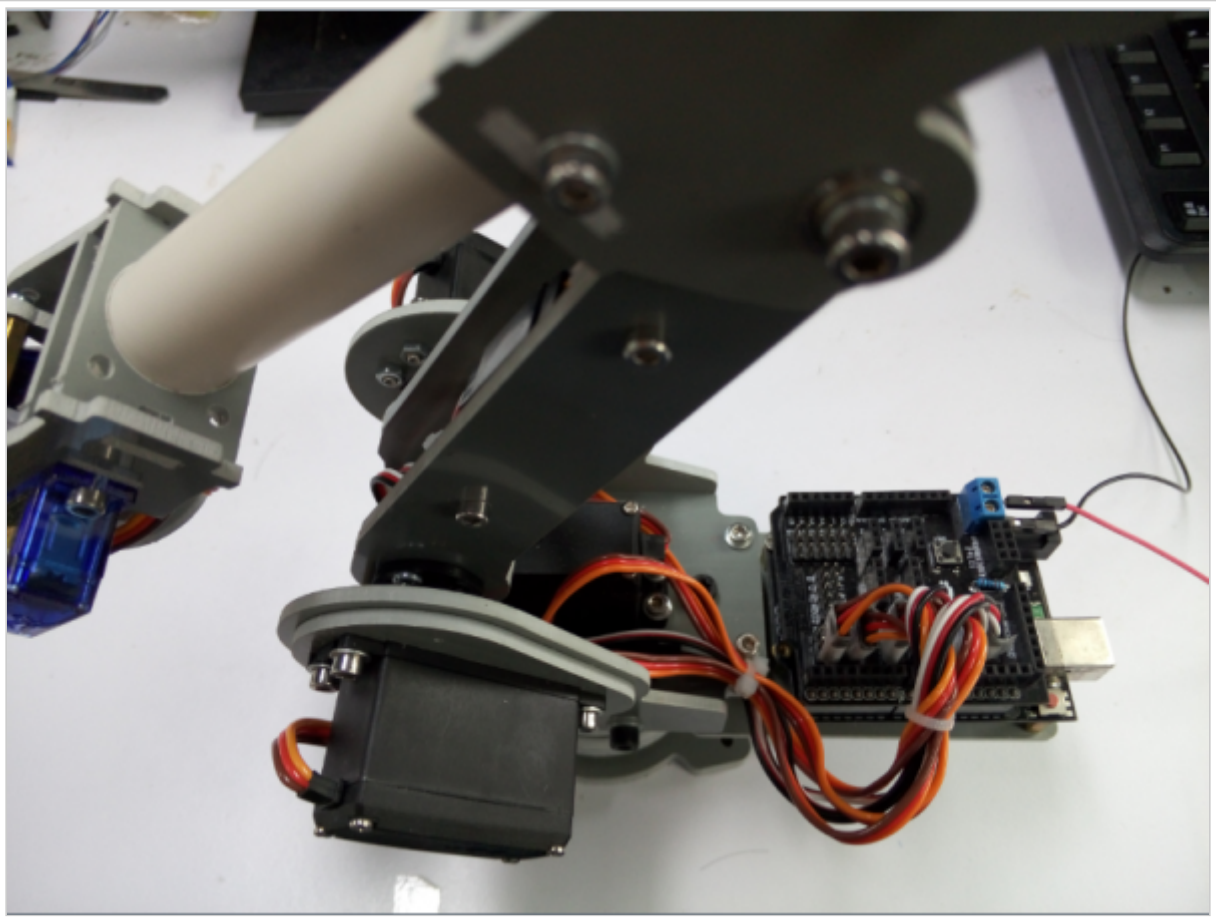
```
myservoA.attach(3);  //  Control waist (A) port number is   3
myservoB.attach(5);  //  Control lorearm（B）port number is 5
myservoC.attach(6);  //  Control  Forearm（C）port number is 6
myservoD.attach(9);  // Control Forearm rotation (D) port number is 9
myservoE.attach(10); // Control wrist（E）port number is 10 wrist
myservoF.attach(11); // Control wrist rotation (F) port number is 9
```

Define 1-6 servo to Arduino digital PIN3、PIN5、PIN6、PIN9、PIN10、PIN11



The Robot Arm need a External DC-5V Power Supply

- DONT USE THE Adruino POWER PINS!



OPERATION

The Robot Arm have three work mode !

- Automatic operation
- Computer serial port control
- Standstill

```
String mycommand="";    /// Serial capture   #auto: automatic operation  #com: computer serial port control  #stop: standstill
static int mycomflag=2; // #auto：2 automatic operation  , #com：  1  computer serial port control    #stop：0  standstill
```

you can change work mode by write the different number to *mycomflag*

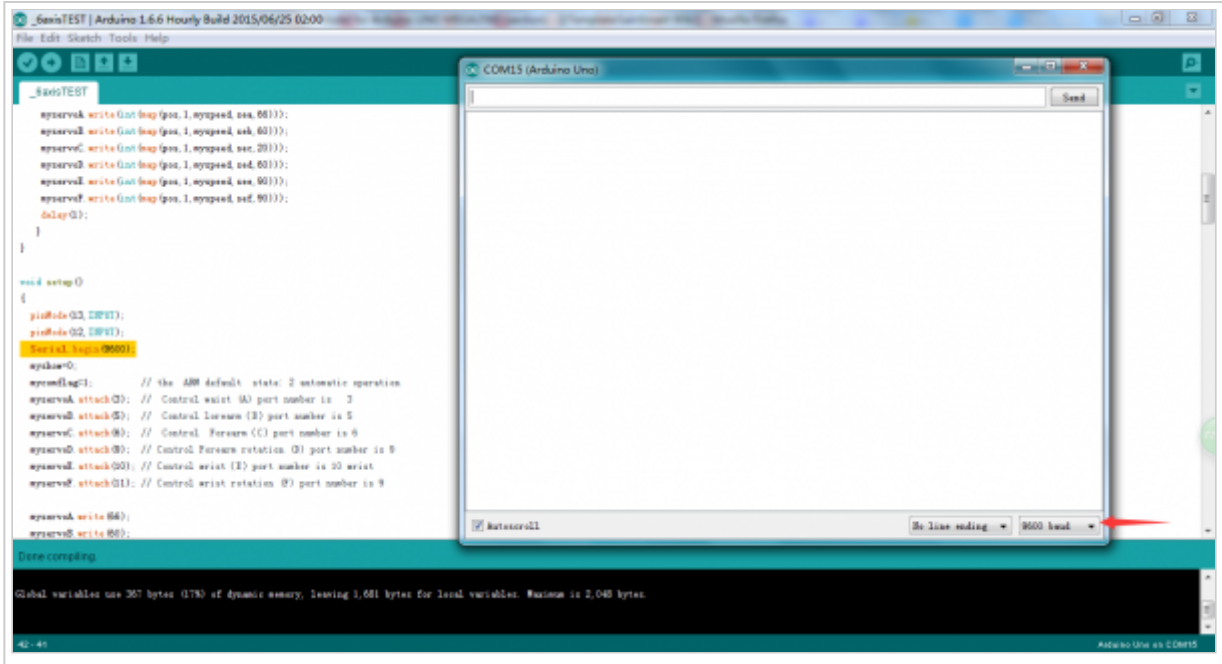
```
void setup()
{
  pinMode(13,INPUT);
  pinMode(12,INPUT);
  Serial.begin(9600);
  myshow=0;
  mycomflag=2;         // the  ARM default  state: 2 automatic operation
  myservoA.attach(3);  //  Control waist (A) port number is   3
  myservoB.attach(5);  //  Control lorearm（B）port number is 5
  myservoC.attach(6);  //  Control  Forearm（C）port number is 6
```

```
myservoD.attach(9);  // Control Forearm rotation (D) port number is 9
myservoE.attach(10); // Control wrist（E）port number is 10 wrist
myservoF.attach(11); // Control wrist rotation (F) port number is 9
```

When you want control the Arm by serial port Let *mycomflag=1*

```
void setup()
{
  pinMode(13,INPUT);
  pinMode(12,INPUT);
  Serial.begin(9600);
  myshow=0;
  mycomflag=1;          // the  ARM default  state: 2 automatic operation
  myservoA.attach(3);  //  Control waist (A) port number is  3
  myservoB.attach(5);  //  Control lorearm (B) port number is 5
  myservoC.attach(6);  //  Control  Forearm (C) port number is 6
  myservoD.attach(9);  // Control Forearm rotation (D) port number is 9
  myservoE.attach(10); // Control wrist (E) port number is 10 wrist
  myservoF.attach(11); // Control wrist rotation (F) port number is 9
```

And open the serial monitor let the boud rate = 9600



If you post data with a, it means that the first servo data, such as serial port 85a If you post data with b, it means that the second servo data, such as serial port 85b

RESOURCE

- Test code (http://s3.amazonaws.com/s3.image.smart/download/101-20-127/Robot%20Arm/DX_4axis/DX_6axis.rar)
- 20-014-304 (http://s3.amazonaws.com/s3.image.smart/download/101-20-127/20-014-304.zip)
- Buy it (http://www.sainsmart.com/robotics/robot-arm/diy-6-axis-servos-control-palletizing-robot-arm-model-for-arduino-uno-mega2560.html) now!
- Watch the Video (https://youtu.be/BDbg6lRWgZ4)

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