1-Hello World！

The purpose of the experiment:

This course is an experiment that allows Arduino and PC to communicate. The experimental results is to let Arduino say "Hello World!"

List of components required for the experiment:

Arduino UNO board *1

USB cable *1

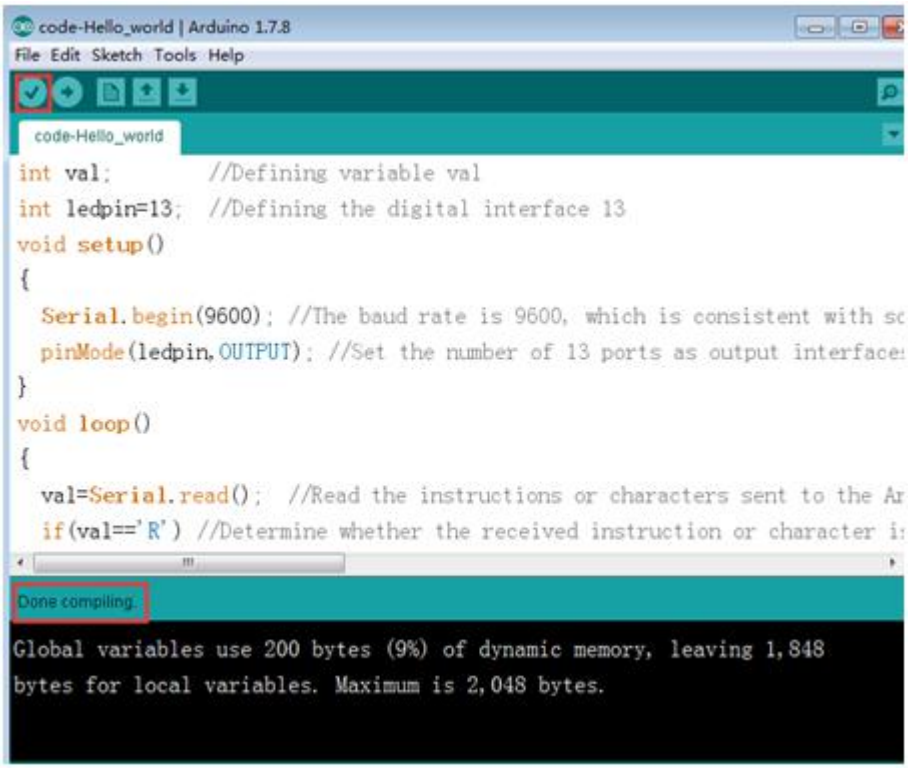
Experimental code analysis:

```
int val;        //Defining variable val
int ledpin=13;  //Defining the digital port 13
void setup()
{
  Serial.begin(9600); //The baud rate is 9600, which is consistent with software settings. When accessing specific devices (such as Bluetooth), we also have to agree with the baud rate of other devices.
  pinMode(ledpin,OUTPUT); //Set the number of 13 ports as output interfaces, and the I/O ports we use on Arduino have similar definitions.
}
void loop()
{
  val=Serial.read();   //Read the instructions or characters sent to the Arduino by the PC machine, and assign the instruction or character to val
  if(val=='R') //Determine whether the received instruction or character is "R"
  { //If the "R" character is received
    digitalWrite(ledpin,HIGH); //Light the number of 13 ports of   LED
    delay(500);
    digitalWrite(ledpin,LOW); //Extinguish the number of 13 ports of   LED
    delay(500);
    Serial.println("Hello World!"); //Dsiplay “Hello World！”
```

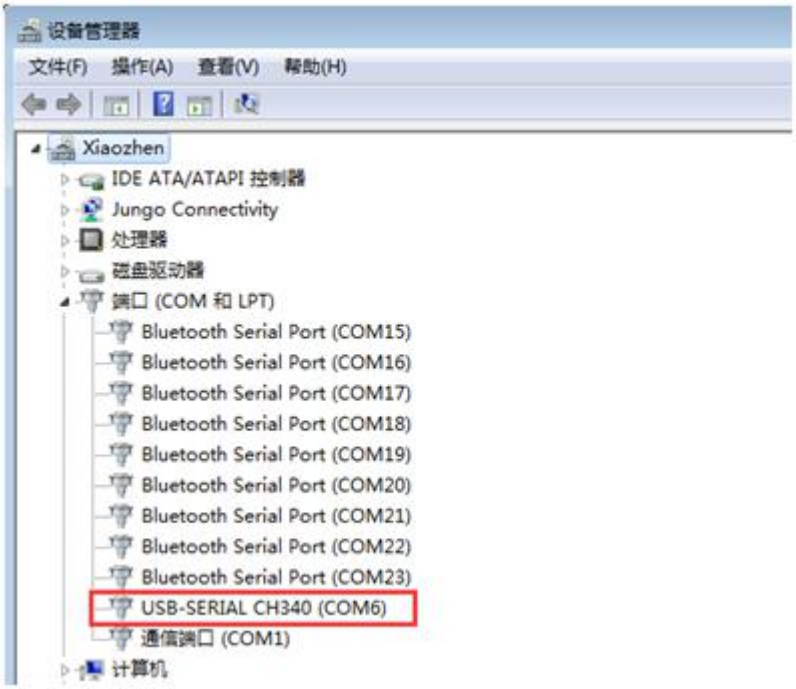
```
  }
}
```

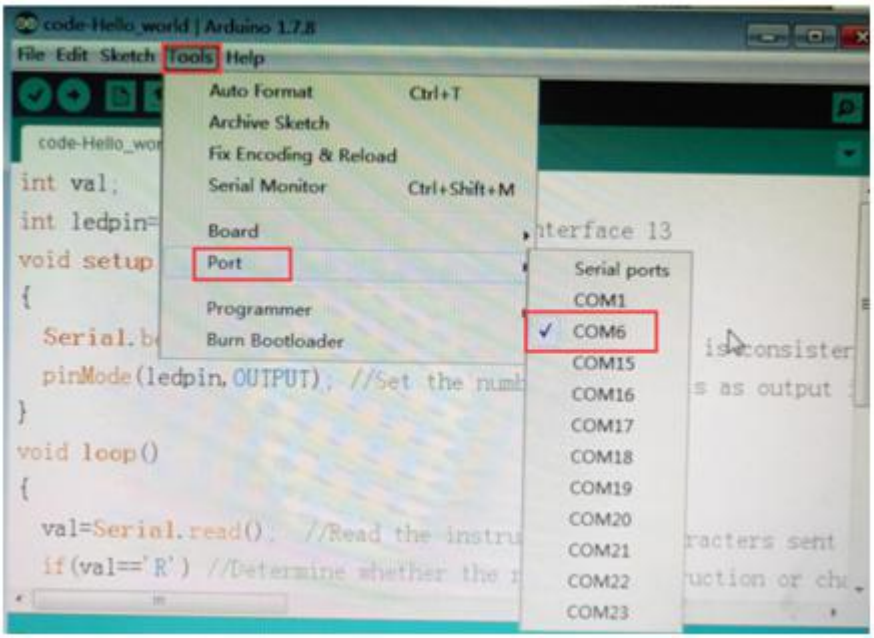
Experimental steps:

1. We need to open the code of this experiment: **code-Hello_world.ino**, click“√” under the menu bar to compile the code, and wait for the word "**Done compiling** " in the lower right corner,as shown in the figure below.

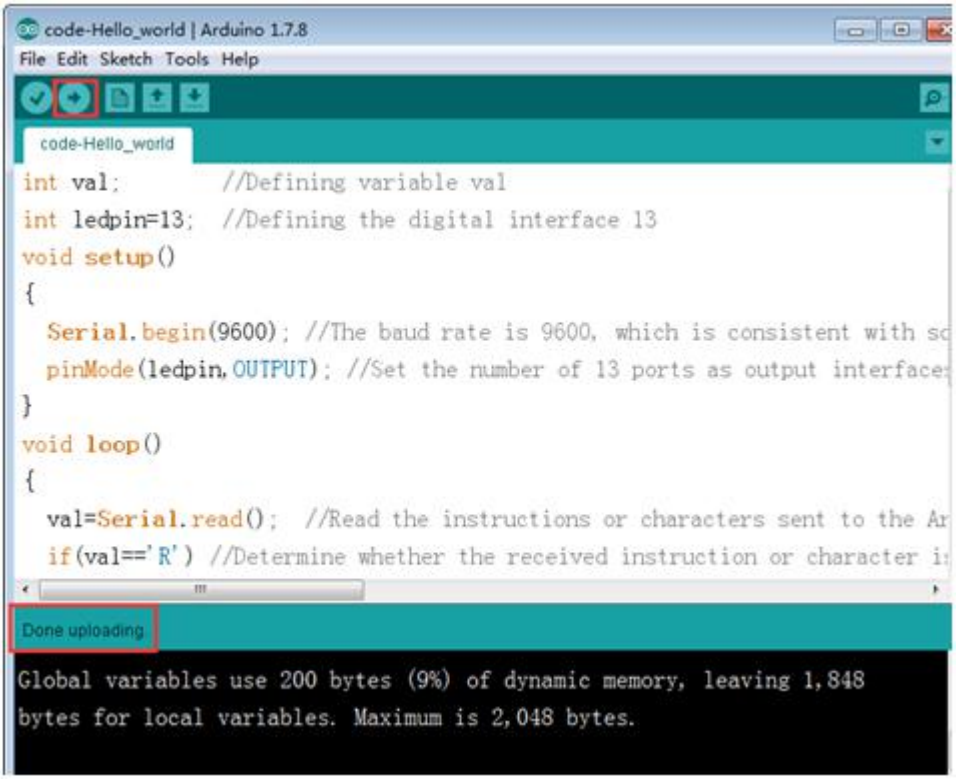


2. In the menu bar of Arduino IDE, we need to select 【Tools】---【Port】---selecting the port that the serial number displayed by the device manager just now, as shown in the figure below.

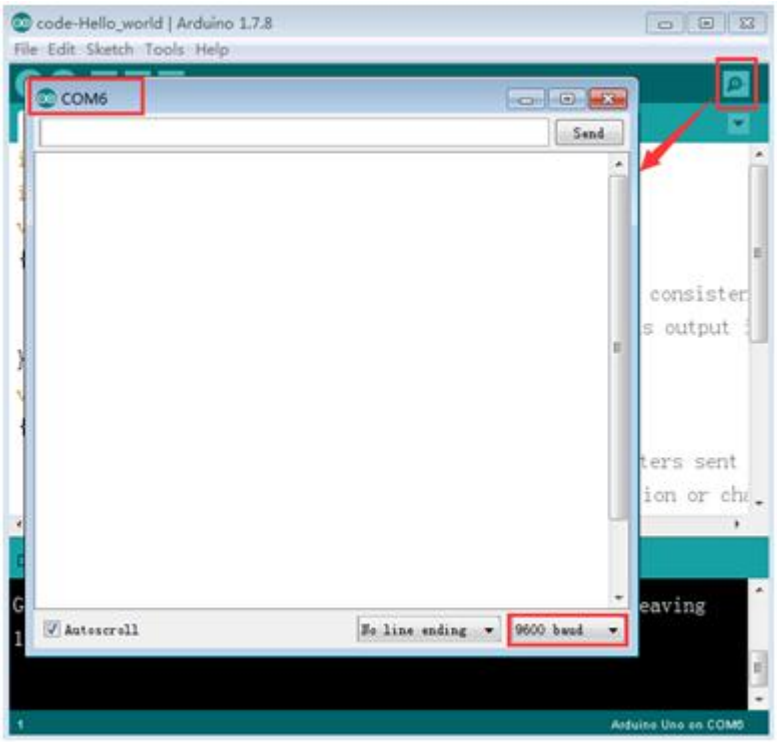




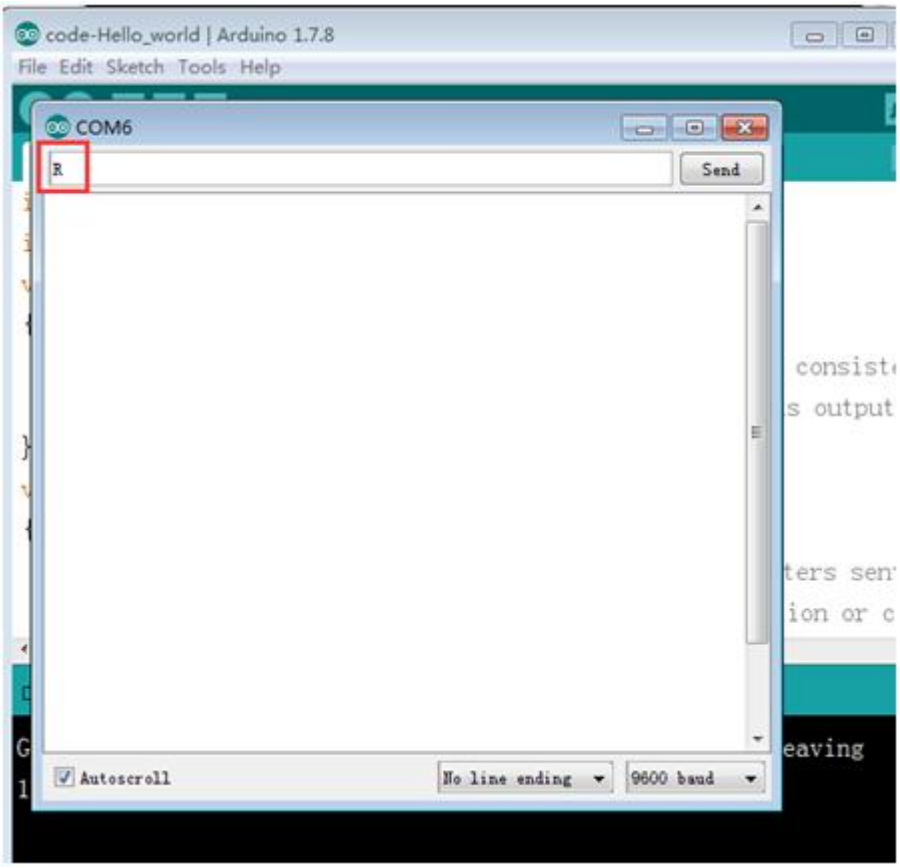
3. After the selection is completed, you need to click “→”under the menu bar to upload the code to the Arduino UNO board. When the word “**Done uploading**” appears in the lower left corner, the code has been successfully uploaded to the Arduino UNO board, as shown in the figure below.



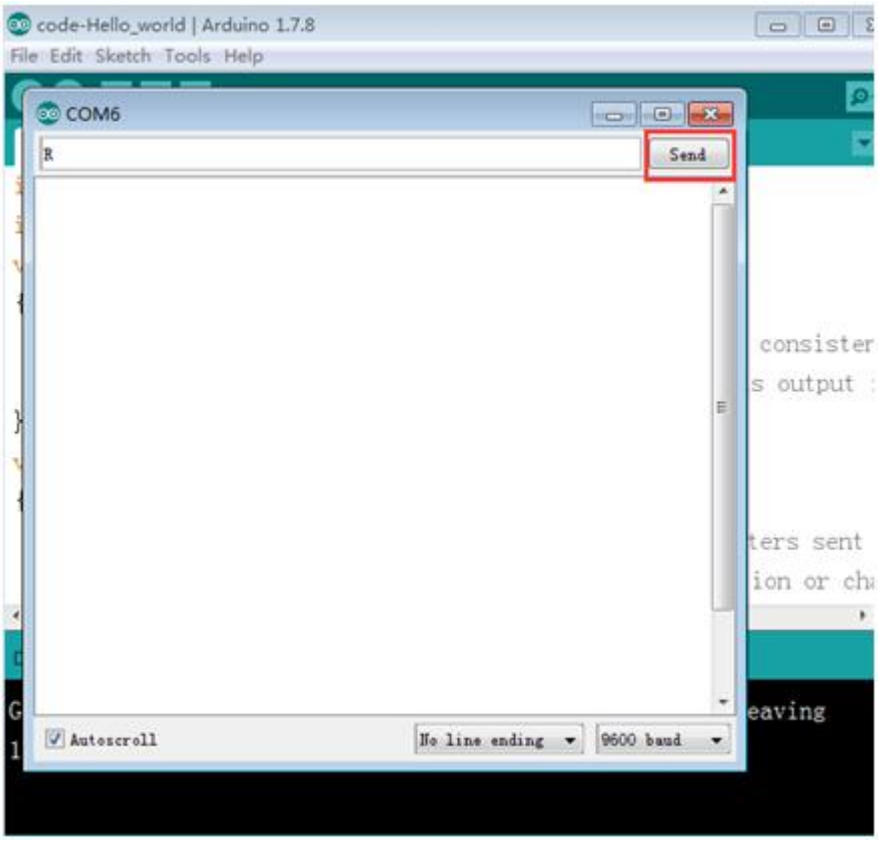
4. We need to turn on the serial port monitor in the upper right corner of the Arduino IDE, and a serial port printing box of the Arduino port will appear. The baud rate is set to 9600 in the lower right corner, as shown in the figure below.

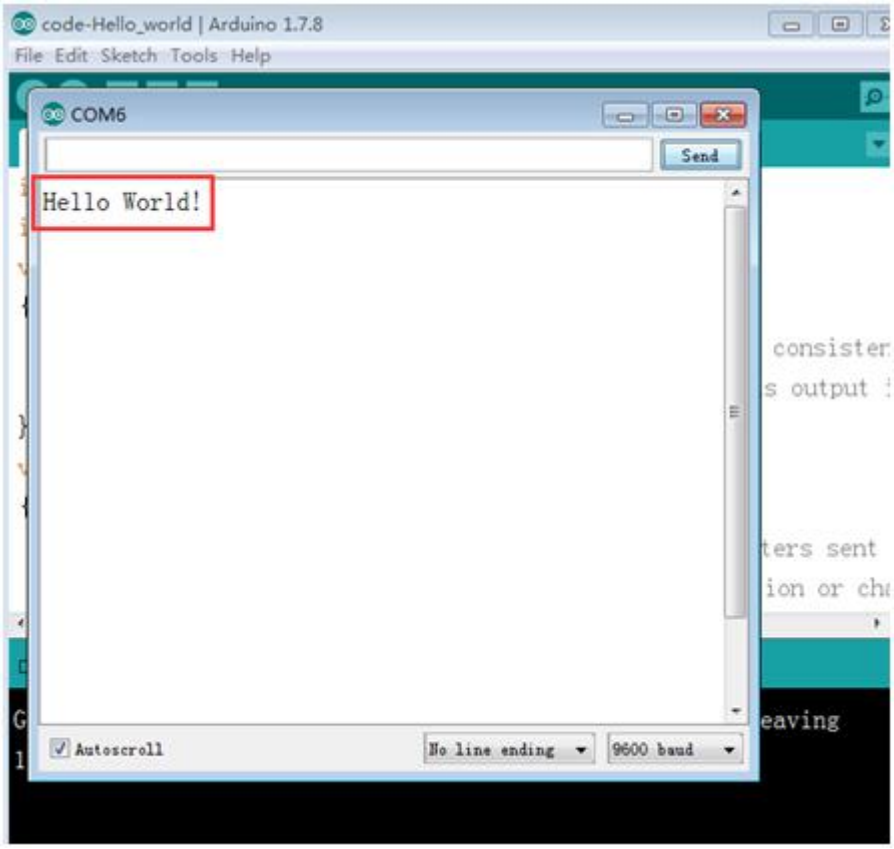


5.According to the code, we should enter "R" in the sending box, as shown in the figure below.



6.After clicking **“send”** on the upper right corner , we can receive the Hello World! in the receiving box below, as shown in the figure below.





The code of the experiment: