Mixly
Software instruction
manual
V.1.0

Revision history

Date	Version	Description	Author
2020-5-15	V.1.0	Create	TOM

目录

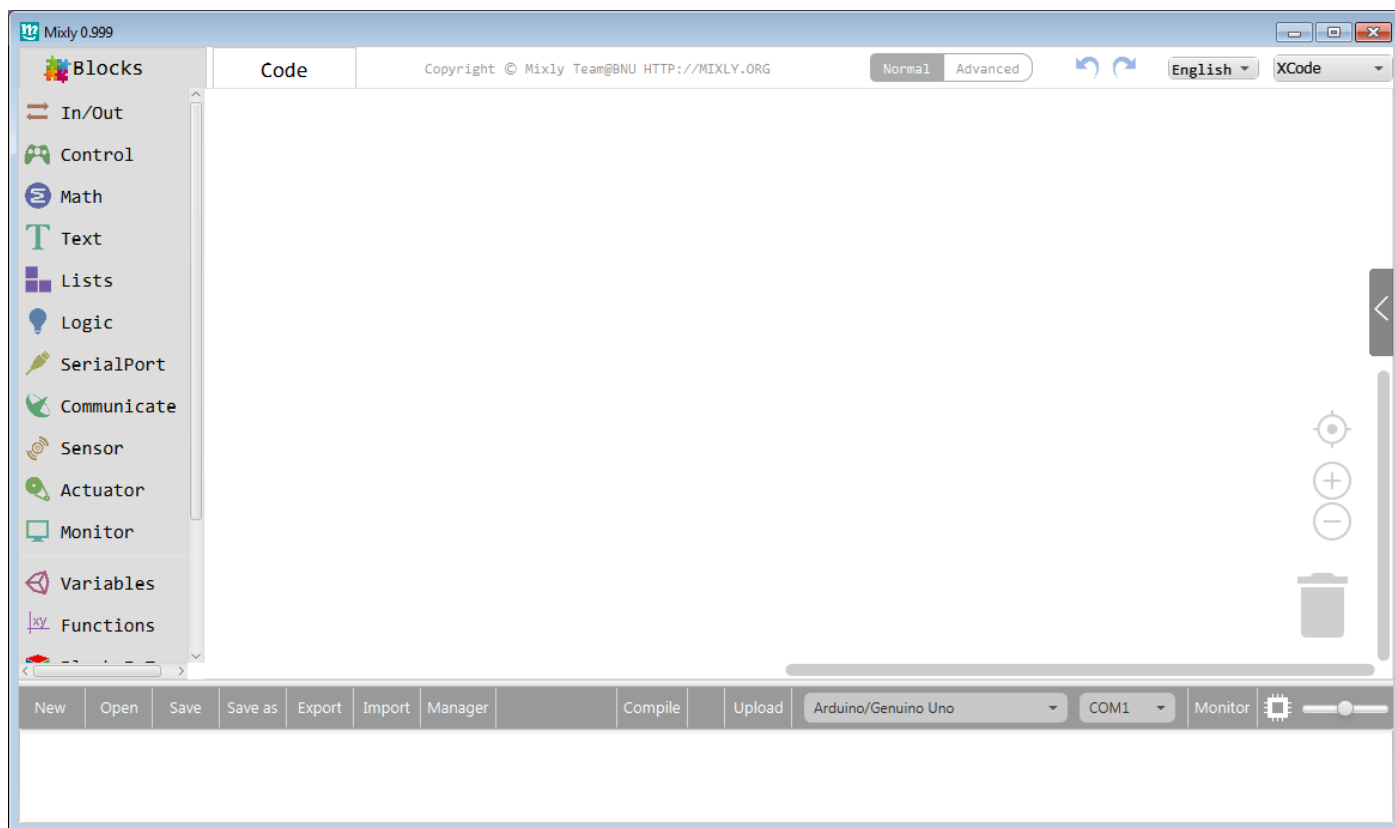# 1.1 Graphical programming software: Mixly (Mi Siqi)

Figure 1-1 Mixly software interface

1.2 Software and driver installation

1. According to your computer system, install the corresponding version of the software, the corresponding software installation package in the data package (as shown in Figure 1-2), can also be downloaded on the official website of Mixly (as shown in Figure 1-3) :

   http://mixly.org/explore/software/mixly-arduino
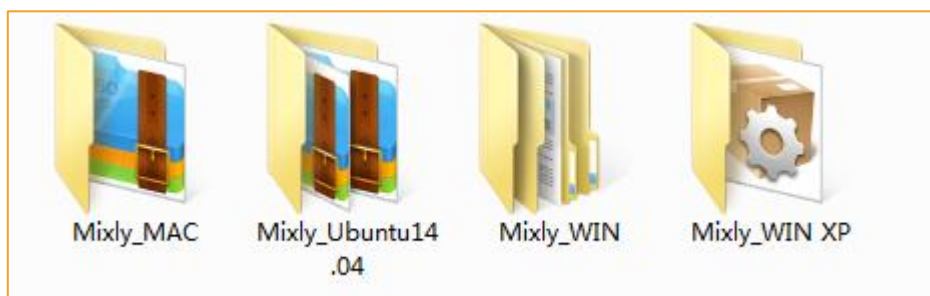

Figure 1-2

Figure   1-3

2. After downloading and decompressing the Windows version, double-click Mixly.exe to open the Mixly software
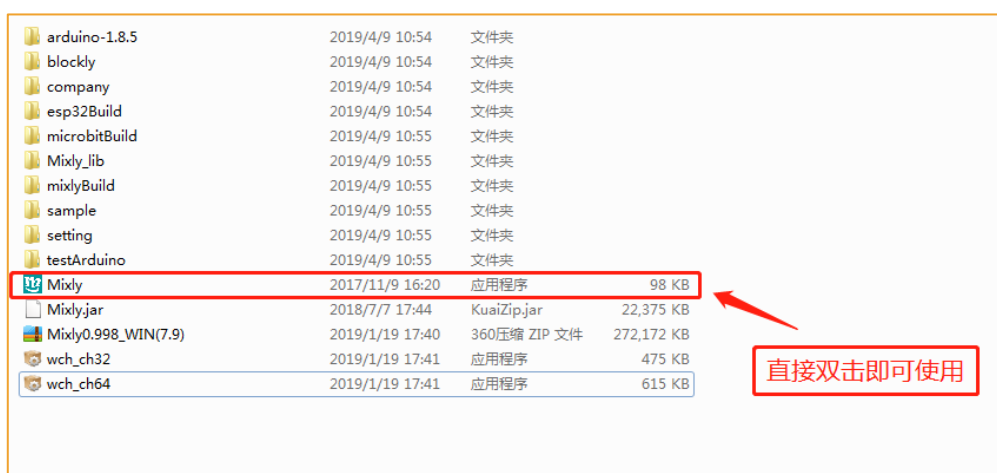

Figure 1-4

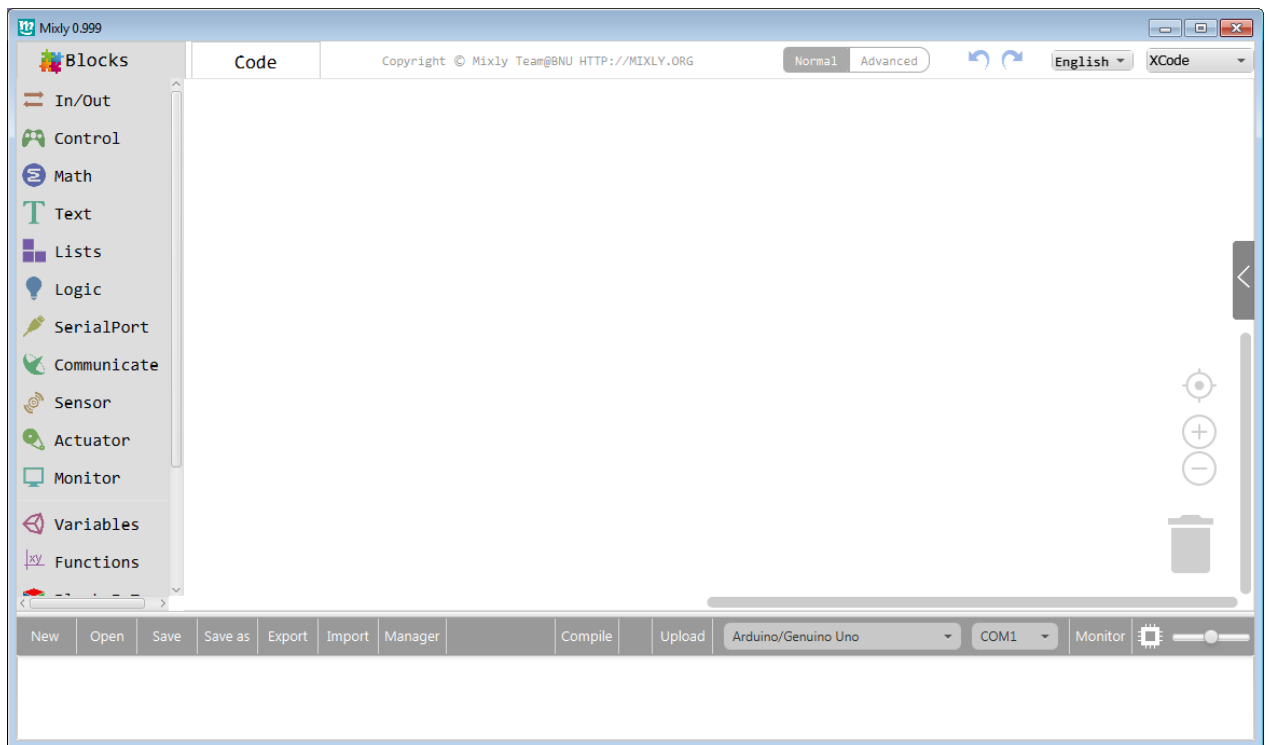The Windows system version of Misiqi software is opened and the interface is shown in Figure 1-5.

Figure 1-5

1.3 Introduction to the compilation environment

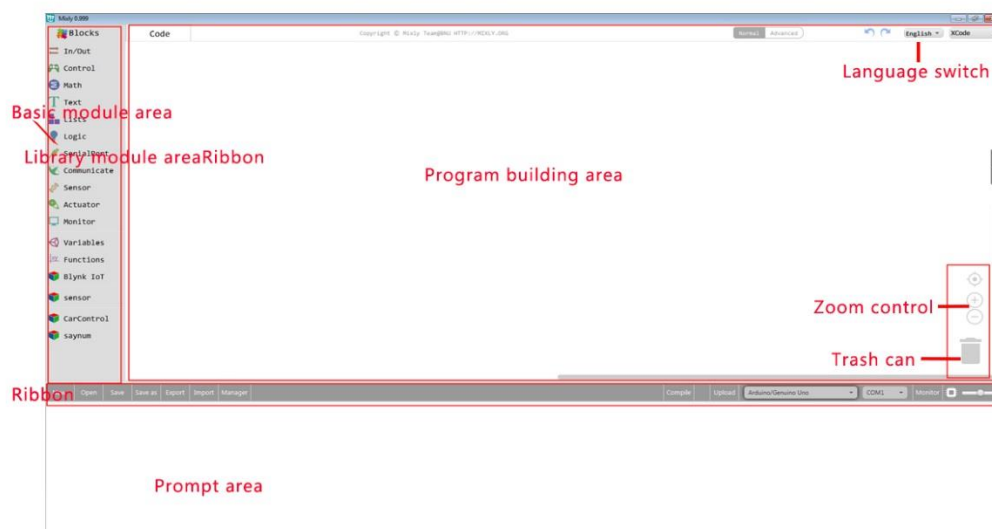The software interface of Mixly is shown in Figure 1-6

Figure 1-6

- Basic module area and library module area: the same type of blocks are divided into the same module and given the same color, each block represents a control instruction.
- Function area: for the creation and storage of project files, the import, export, and management of libraries, serial port connection and uploading programs, and the control panel to select the operation area.
- Program construction area: It is the place to put the building blocks dragged from the basic module area and library module area.
- Code area: After dragging out the building blocks, click "Code" to see the C language code corresponding to the module you dragged.
- Language switching area: Chinese Simplified, Chinese Traditional, English and Spanish can be switched.
- Zoom control area: You can zoom the software operation interface.
- Dustbin: used to remove unwanted building blocks

1.4 Basic module area and library module area introduction

Mixly's basic module area and library module area are divided into some building blocks that come with Mixly software and library block blocks imported by yourself. These building blocks can correspond to the C language code one by one. You can write different programs by splicing different building blocks. We do n't even need to know what code each block corresponds to, because when we drag out the blocks, the program It's written by us, we click on the "code" field, you can see these C language codes. Figures 1-7 and 1-8 are the module and code sections, respectively.
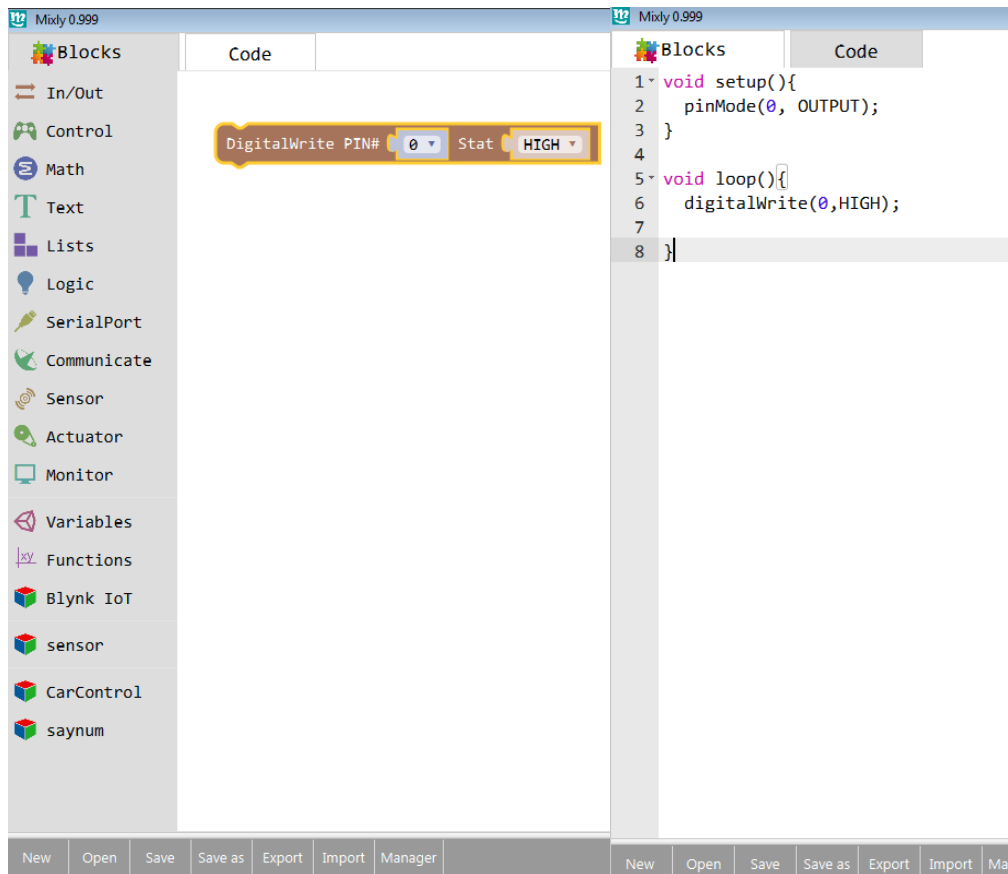
Figure   1-7   Figure 1-8

1.4.1 Basic module introduction

There are a variety of building block types under the script tag of Mixly, including input / output, control, math, text, array, serial port, communication, etc. If you are interested, you can try it yourself. Mathematics, serial port and logic are the four building block types.

1) The control building blocks are the building blocks that control the execution flow of the program, and the leading program, as shown in Figure 1-9.
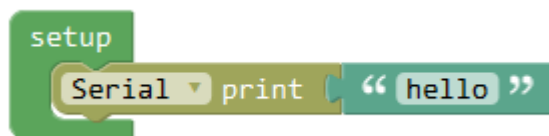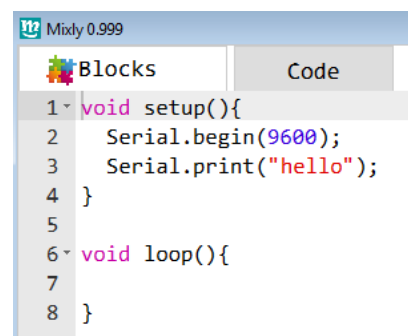

Figure   1-9   Figure 1-10

The initialization function corresponds to the setup function in the code. Dragging some blocks into the initialization block means that the dragged block program will run once. If the block is dragged outside the initialization block, then these programs will enter the loop function. These procedures will be executed cyclically. As shown in Figure 1-10

2) The main function of digital and logical operation type blocks is to perform mathematical operations as a condition for judgment, and compare the size and logical judgment with, or, and not, as shown in Figure 1-11.
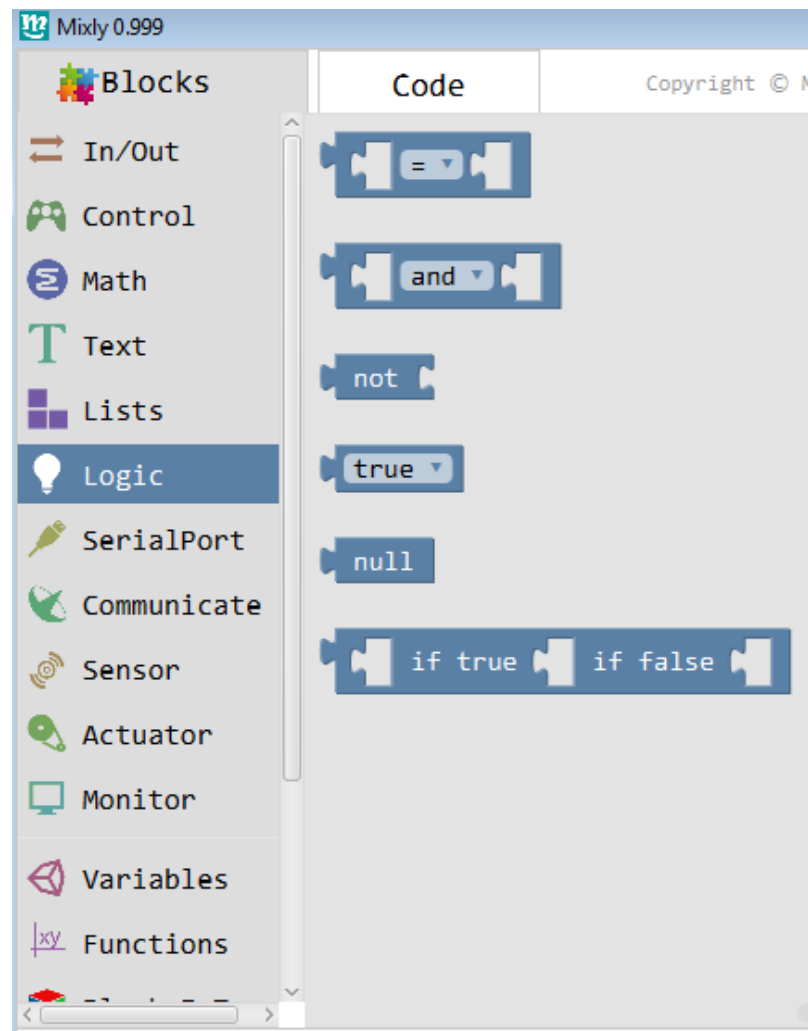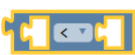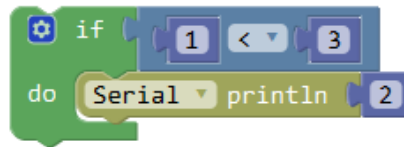

Figure 1-11

For example, Blocks are operations to judge the size. When control blocks, numbers and logic operations are used together with robot module blocks,

you can write such a program which means to determine

whether the condition is true, then execute serial port to

print the number

2 Open the serial monitor and you can see that the serial port is printing the number "2" in a loop. As shown in Figure 1-12.
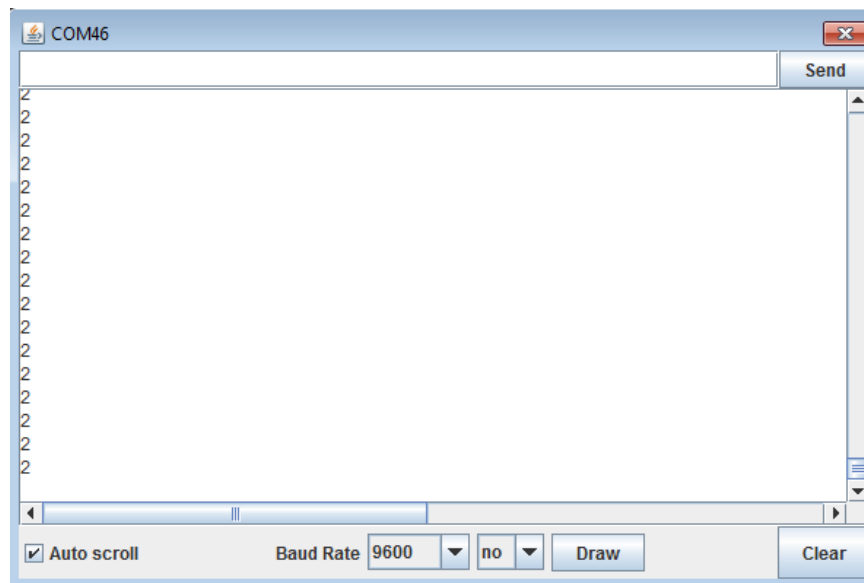

Figure   1-12

1.4.2 Library module introduction

Sensor is the library we wrote for the Sensor robot. After importing the library, it will appear in the library module area below the basic module area. Click on it and various small building blocks will appear, as shown in Figure 1-13. Next, we will learn Write a program for Sensor by building these modules together.
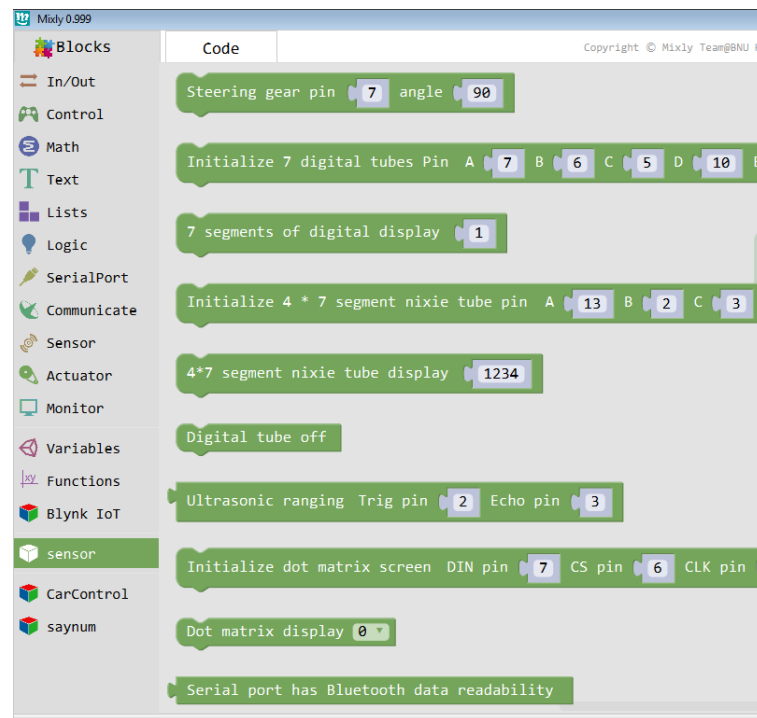
Figure　1-13

Chapter 2 Getting Started with Programming

2.1 Write and print Hello word program

If we want the main control board to perform related actions or respond according to our intentions, we need to store the instructions (programs) in its brain (UNO main control board) in advance. How do we compile instructions for the Sensor robot? Let's lead you to experience writing a program to print Hello word first.

2.1.1 Add Sensor Mixly graphical programming library

Before programming, we need to add the Sensor library first, the specific steps are as follows:
1) Download the Sensor library and save it on your computer
2) Open the Mixly software and click "Import Library", as shown in Figure 2-1
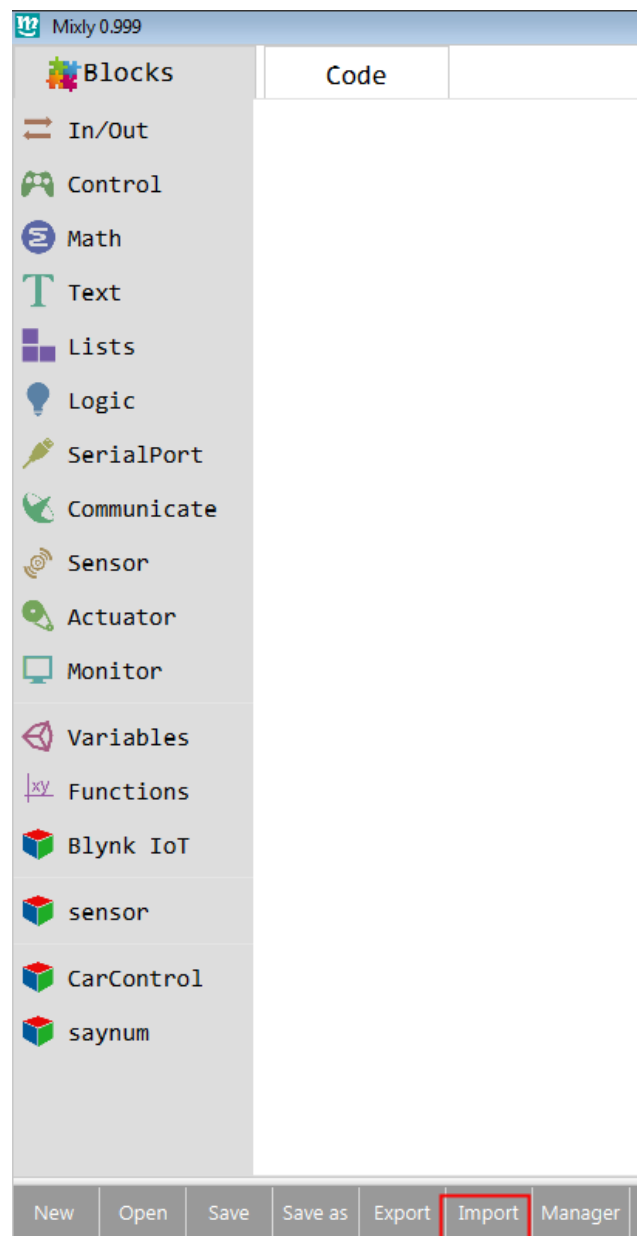3) Click the sensor.xml file, and then click "Open", as shown in Figure 2-2

Figure 2-1
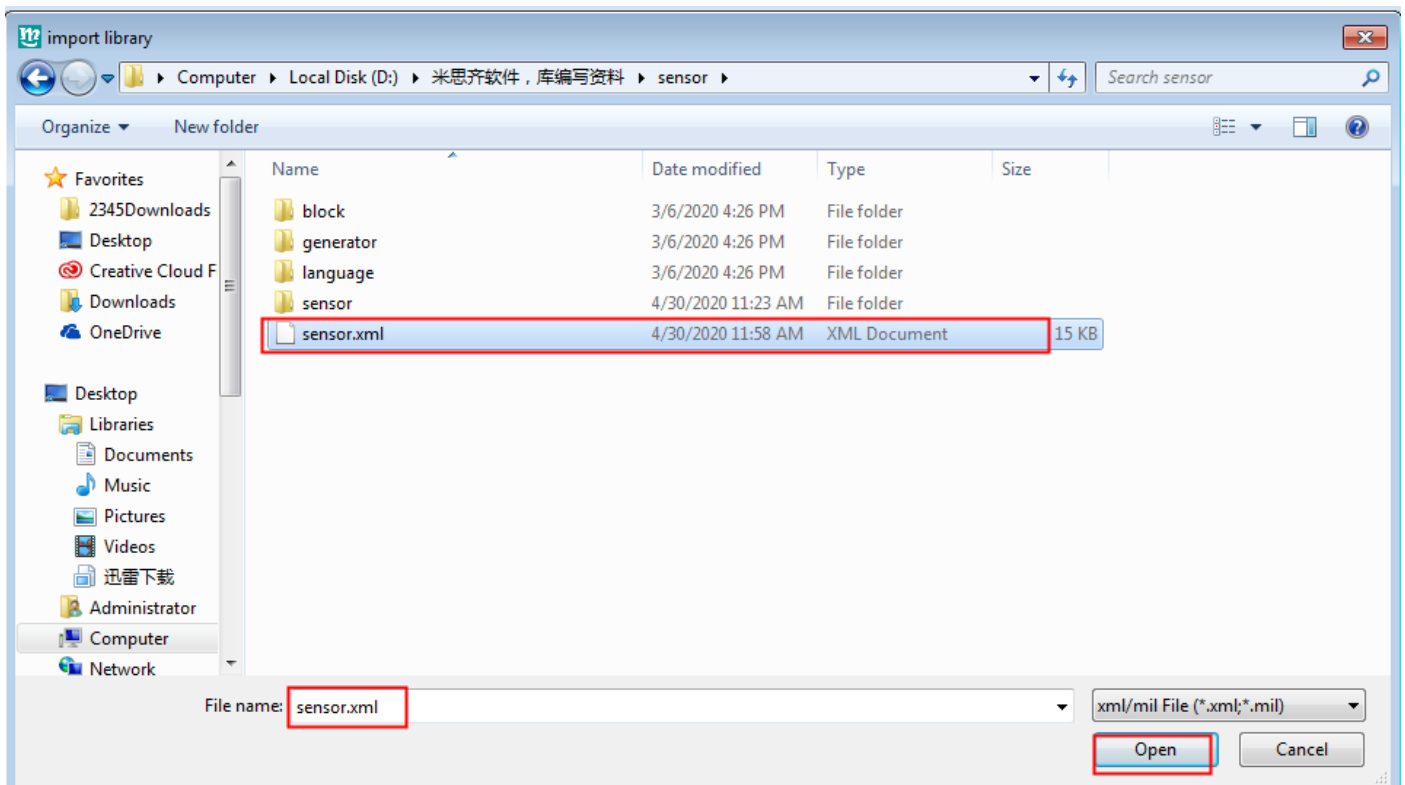
Figure 2-2

4) After the import is successful, the prompt area will display: Successful import of custom library! And in the library module area, you can see the sensor library module as shown in Figure 2-3;

Figure 2-3

5) Click "sensor", the sensor block graphic programming block will be displayed, as shown in Figure 2-4.
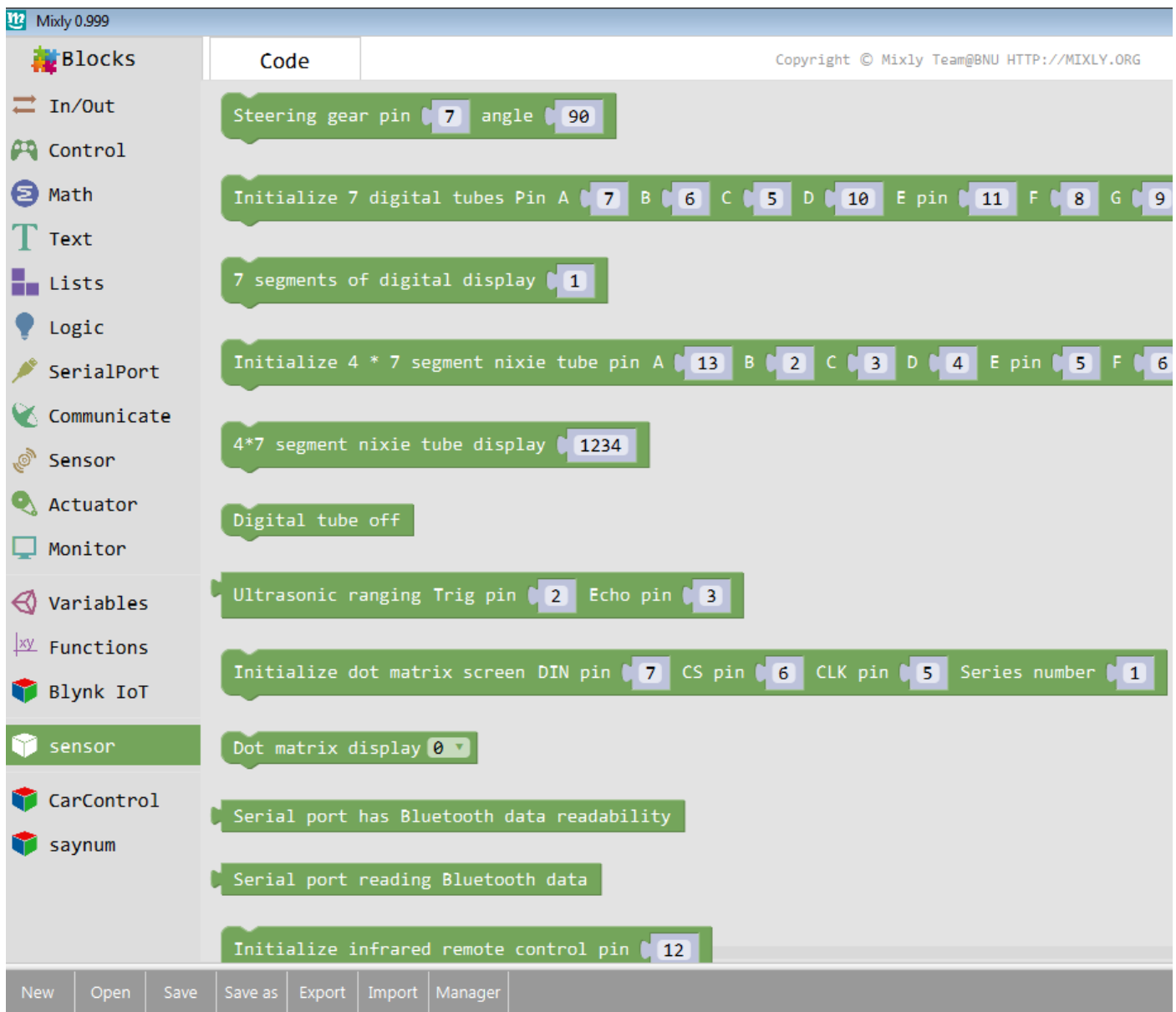
Figure   2-4

2.1.2 Programming first experience

After adding the Sensor library, let's experience Sensor programming! Let's write a program to print Hello word first;

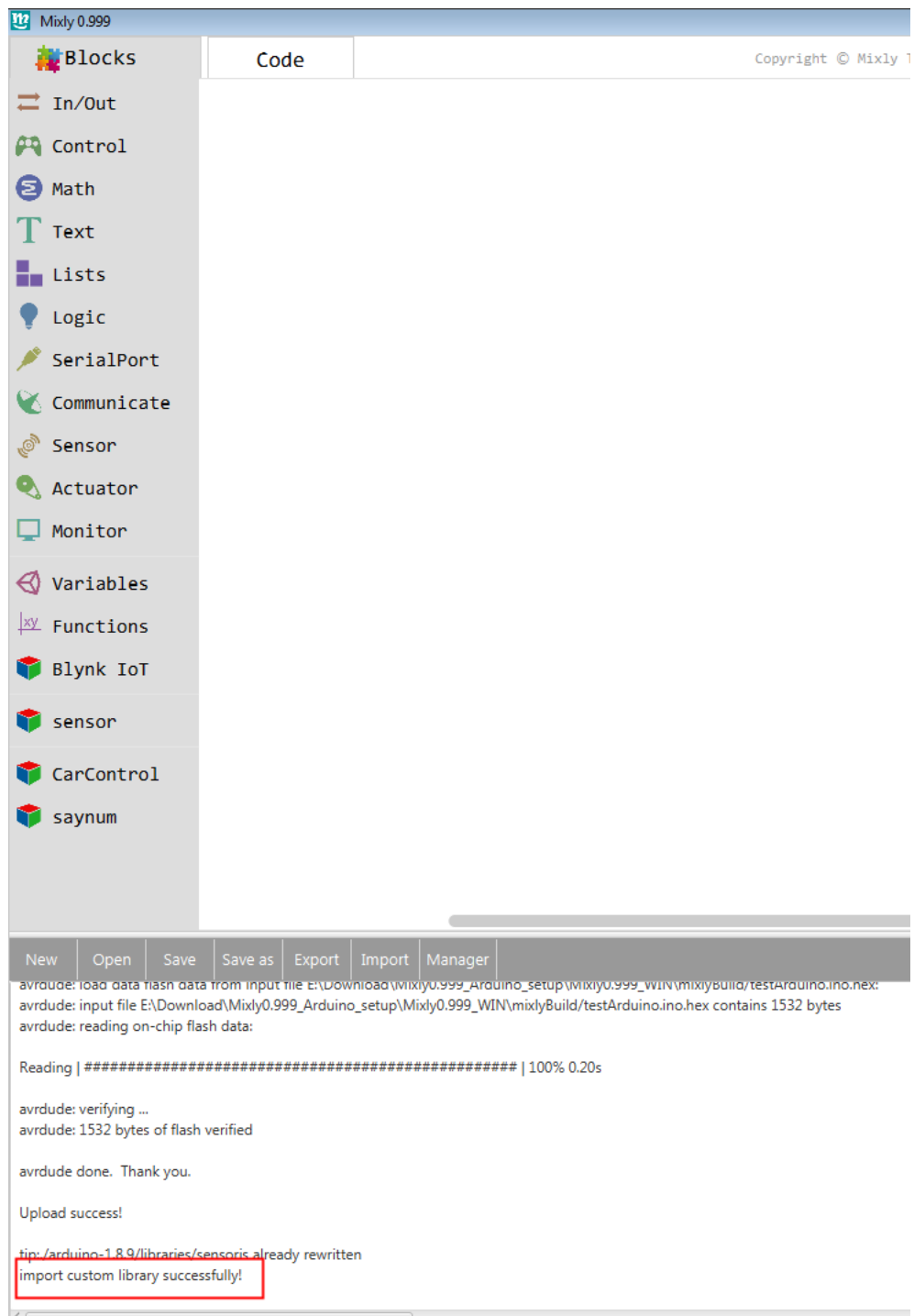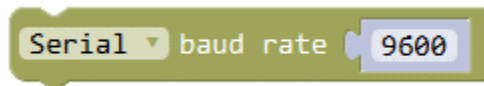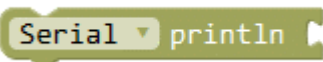First, put the ![Serial baud rate 9600 block] Drag to the programming area, as shown in Figure 2-5

Figure 2-5

1) Under the serial port label Drag the block to "Serial Baud Rate 9600", as shown in Figure 2-6

Figure   2-6

2) In the text module, drag the "Hello World" block to the right of Serial print (line feed), and enter "Hello word" as shown in Figure 2-7

Figure   2-7

The above is the procedure to print Hello Word through UNO motherboard.

After the program is written, we need to transfer the program to the brain of the UNO motherboard (UNO control motherboard). It will do the action we want according to the program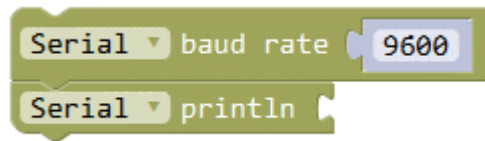 we wrote. How to transfer the program to the UNO motherboard? Only when Mixly and the robot main control board are connected together, we can transfer the program written on the computer to the UNO motherboard. The following describes the connection method of Mixly and UNO motherboard.

2.2 Mixly and UNO board connection steps

1) Use a USB data cable, connect one end to the computer and the other end to the UNO main control board USB to connect the UNO motherboard to the computer;
2) Click the drop-down box to the right of "Upload" to select the model of the main control board. If your main control board is a UNO board, choose Arduino / Genuino Uno; if your main control board is a Nano board, choose Arduino Nano [atmega328]; Then click the second drop-down box on the right to select the USB port, as shown in Figure 2-8. After the selection is completed, the Mixly and UNO boards are successfully connected.
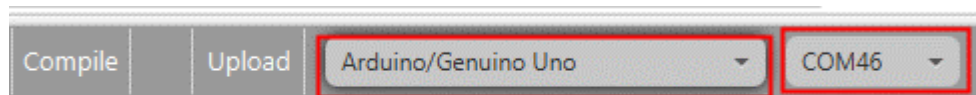
Figure 2-8

2.3 Upload program to UNO main control board

When the program is written and Mixly and the UNO board robot are correctly connected, we can transfer the program we wrote to the UNO main control board. The specific steps are as follows:

1) Click "Upload", the building block program in the program architecture area starts to upload to the control panel, we need to wait for a while, after the upload is complete, it prompts "upload completed", as shown in Figure 2-10;

Figure 2-9

New | Open | Save | Save as | Export | Import | Manager

avrdude: 1546 bytes of flash written
avrdude: verifying flash memory against E:\Download\Mixly0.999_Arduino_setup\Mixly0.999_WIN\mixlyBuild/testArduino.ino.hex:
avrdude: load data flash data from input file E:\Download\Mixly0.999_Arduino_setup\Mixly0.999_WIN\mixlyBuild/testArduino.ino.hex:
avrdude: input file E:\Download\Mixly0.999_Arduino_setup\Mixly0.999_WIN\mixlyBuild/testArduino.ino.hex contains 1546 bytes
avrdude: reading on-chip flash data:

Reading | ## | 100% 0.21s

avrdude: verifying ...
avrdude: 1546 bytes of flash verified

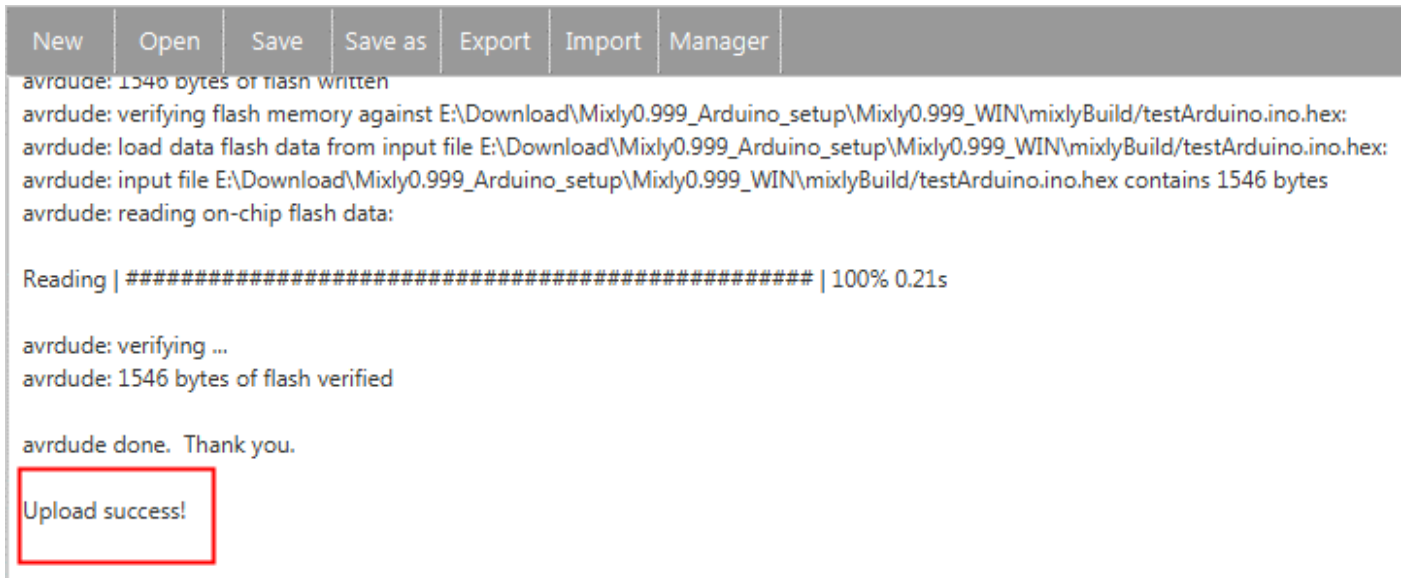avrdude done. Thank you.

Upload success!

Figure   2-10

After completing the above steps, the program we have written is already in the UNO main control board. Of course, we can click the "Code" option at any time to view the program that is actually uploaded to the control board. These are the C language codes corresponding to the building block graphics blocks. . As shown in Figure 2-11

Mixly 0.999
Blocks   Code

```
1  void setup(){
2      Serial.begin(9600);
3  }
4
5  void loop(){
6      Serial.println("hello");
7
8  }
```
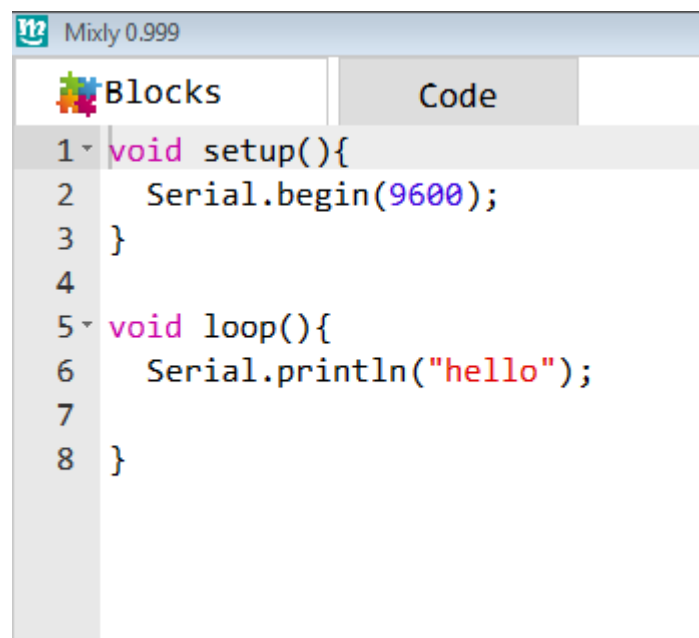
Figure   2-11

Open the serial monitor, at this time we will see the serial monitor constantly printing Hello Word, as shown in Figure 2-12.
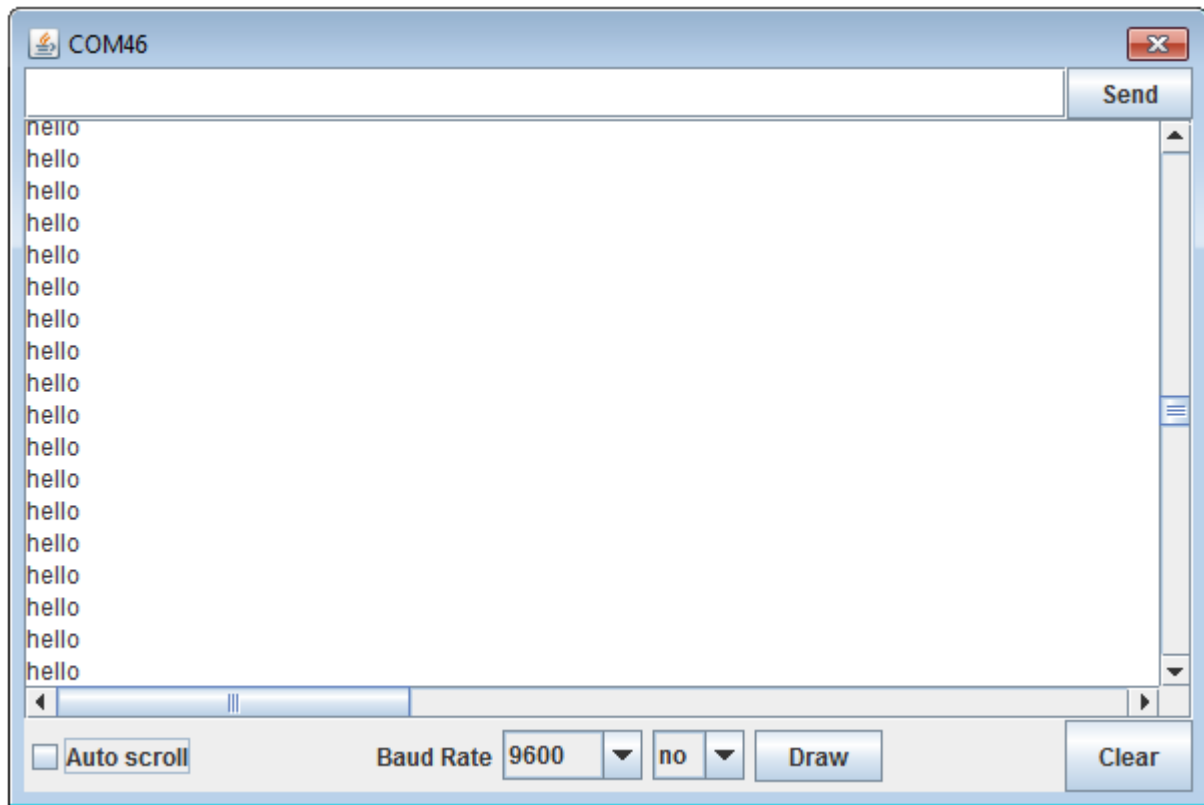
Figure 2-12

Of course, we know how to use Mixly software for graphical programming, we can also write more complex and versatile programs.