

microbit_ K210 object detection

1.K210 and microbit communication

1.1 Experimental premises

This tutorial uses microbit V2.0, and K210 requires running the program in * * K210-AI (microbit) *
* to start the experiment

Microbit * 1

Eyu clip * 3

Several DuPont Lines

K210 perspective module * 1 (requires SD card (with AI model inside) and camera)

USB to TTL module * 1

Import k210AI library: <https://github.com/YahboomTechnology/K210-Module>

1.2 Experimental wiring

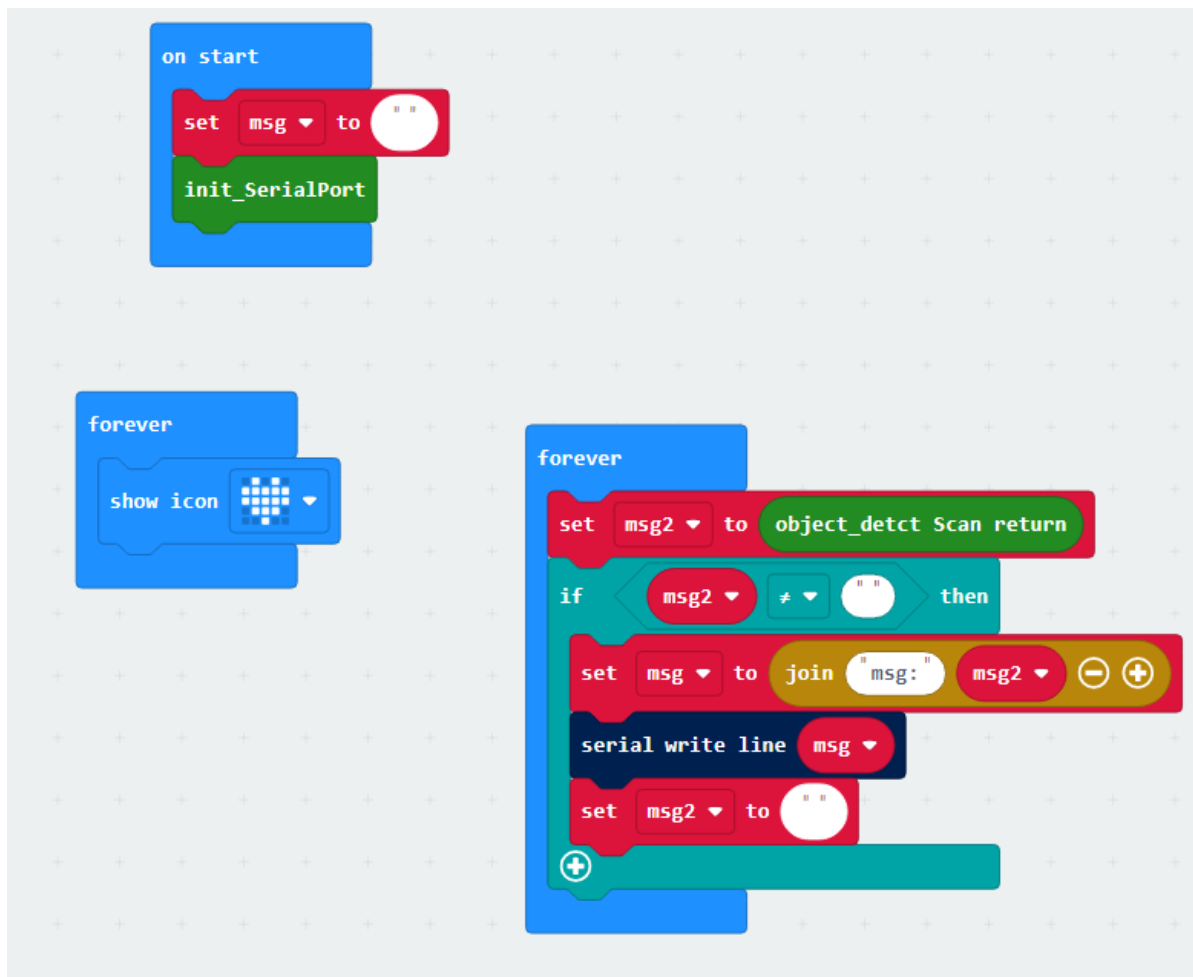
microbit	USB to TTL module
P1	RXD
GND	GND

microbit	k210
P2	TXD
GND	GND

Wiring as shown in the diagram:



1.3 Main code analysis



From the code, simply configure the serial port and call the relevant serial port and K210 building blocks for data acquisition

-Msg: It is the result of object detection

The meaning of numbers is represented as follows:

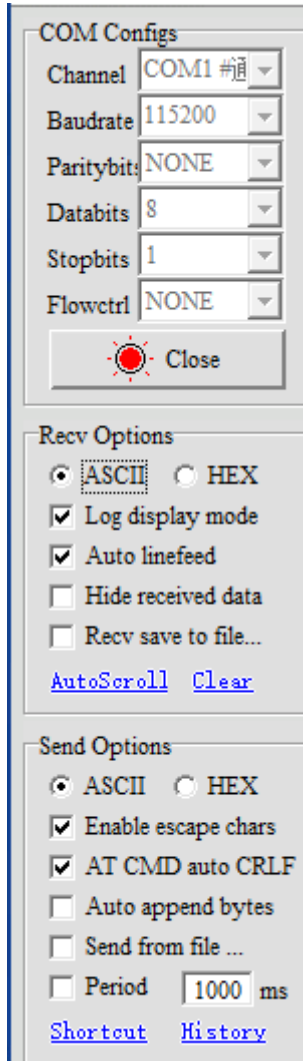
0. Aircraft, 1. Bicycle, 2. Bird, 3. Boat, 4. Bottle, 5. Bus, 6. Car, 7. Cat, 8. Chair, 9. Cow, 10. Dining Table, 11. Dog, 12. Horse, 13. Motorcycle, 14. Person, 15. Potting, 16. Sheep, 17. Sofa, 18. Train, 19. Monitor

1.4 experimental phenomena

1. After connecting the cable, the K210 perspective module can be run offline

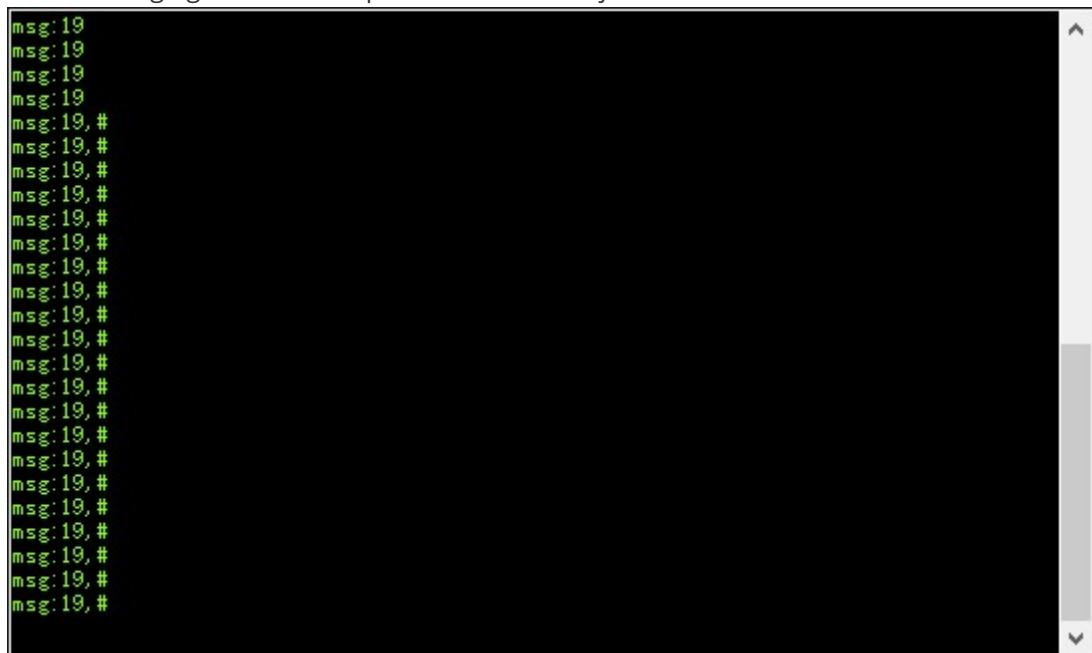
[K210 offline operation method](#)

2. Set the serial port assistant to the interface shown in the figure



The image shows two overlapping dialog boxes from a serial communication software. The top dialog, titled 'COM Configs', has fields for Channel (COM1), Baudrate (115200), Paritybits (NONE), Databits (8), Stopbits (1), and Flowctrl (NONE), along with a 'Close' button. The bottom dialog, titled 'Recv Options', has radio buttons for ASCII (selected) and HEX, and checkboxes for Log display mode, Auto linefeed, Hide received data, and Recv save to file... It also includes 'AutoScroll' and 'Clear' links. Below it, the 'Send Options' section has radio buttons for ASCII (selected) and HEX, and checkboxes for Enable escape chars, AT CMD auto CRLF, Auto append bytes, Send from file ..., and Period (1000 ms), along with 'Shortcut' and 'History' links.

3. Download the hex program of this tutorial into microbit
4. After starting recognition, you can see that the serial assistant prints something and the microbit screen also scrolls to display the received information. The experimental results in the following figure show the phenomenon of object detection



The image shows a serial terminal window with a black background and green text. The text consists of a series of messages: 'msg: 19' followed by 'msg: 19, #' on subsequent lines. The messages are repeated multiple times, and the text is scrolled upwards, indicating continuous data reception. A vertical scrollbar is visible on the right side of the window.

This experiment displays the results of object detection

1.5 Microbit calls the building blocks to parse the results of K210, and the roles of each block

Website of K210 library: <https://github.com/YahboomTechnology/K210-Module>

