

## Voice broadcast temperature and humidity

### 1. Purpose

In this course, we mainly learn to use microbit, voice broadcast module, temperature and humidity sensor realize voice broadcast temperature and humidity data.

### 2. Programming method

Mode 1 online programming:

First, we need to connect the micro:bit to the computer by USB cable. The computer will pop up a USB flash drive and click on the URL in the USB flash drive:

<http://microbit.org/> to enter the programming interface. Add the Yahboom package:

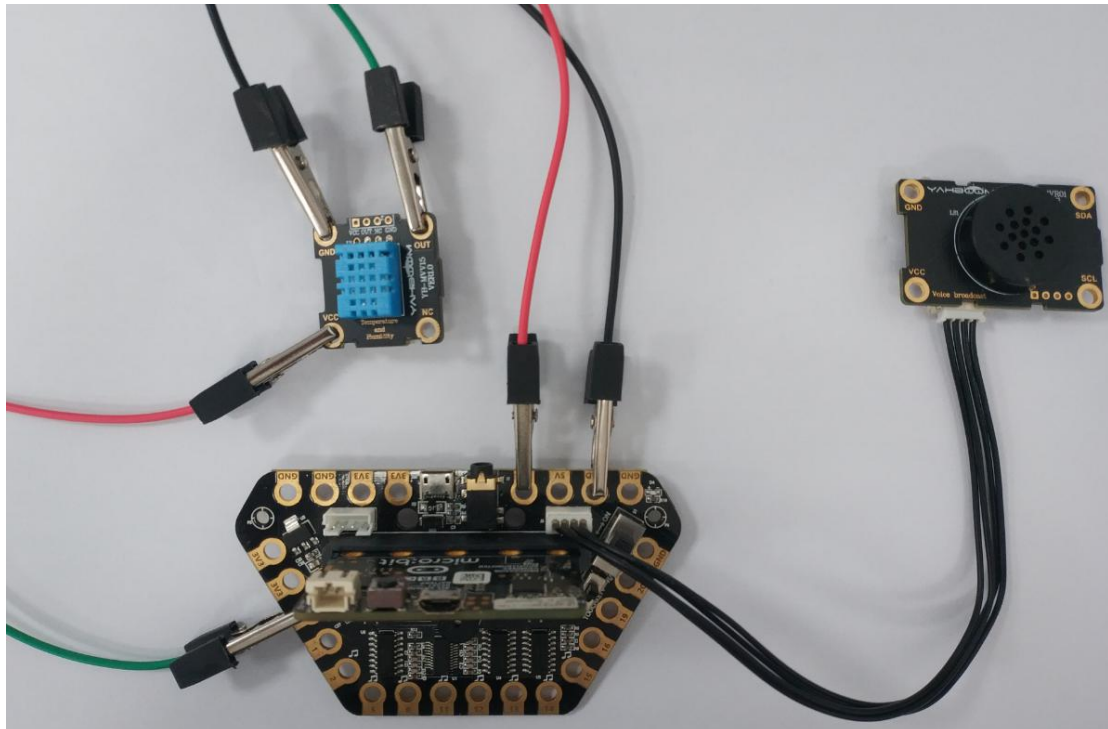
<https://github.com/YahboomTechnology/dht11> and

<https://github.com/YahboomTechnology/Speech> to start programming.

Mode 2 offline programming:

We need to open the offline programming software. After the installation is complete, enter the programming interface, click[New Project]. Add Yahboom package: <https://github.com/YahboomTechnology/dht11> and <https://github.com/YahboomTechnology/Speech>, you can start programming.

### 3. About wiring

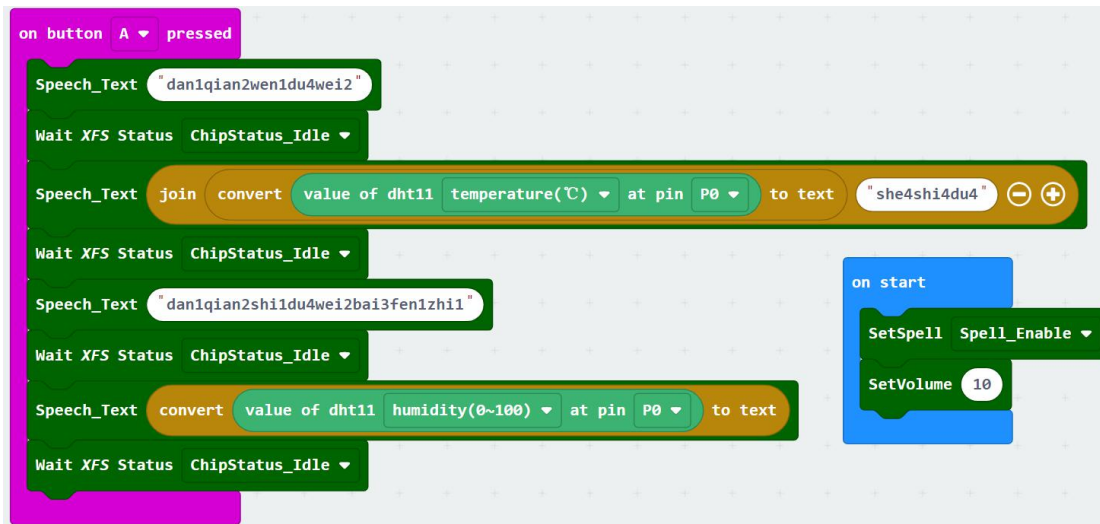


### 4. Combine building blocks

We need to use the following programming building blocks.

The image displays five sequential screenshots of the Scratch workspace, illustrating the assembly of an Arduino IDE script:

- First Screenshot:** The 'Input' block is highlighted in the left menu. In the workspace, the 'on button A pressed' block is highlighted with a red box.
- Second Screenshot:** The 'Speech' block is highlighted in the left menu. In the workspace, the 'Wait XFS Status ChipStatus\_InitSuccessful' block and the 'Speech\_Text' block are highlighted with red boxes.
- Third Screenshot:** The 'Text' block is highlighted in the left menu. In the workspace, the 'join "Hello" "World"' block and the 'parse to number "123"' block are highlighted with red boxes.
- Fourth Screenshot:** The 'Text' block is highlighted in the left menu. In the workspace, the 'compare "this" to ""' block, the 'char from "this" at 0' block, and the 'convert 0 to text' block are highlighted with red boxes.
- Fifth Screenshot:** The 'dht11' block is highlighted in the left menu. In the workspace, the 'value of dht11 temperature(°C) at pin P0' block is highlighted with a red box.



## 5. Experimental phenomenon

After the program is downloaded successfully, when we press the button A of the micro:bit board, the voice broadcasts the percentage of the currently detected temperature and humidity.