

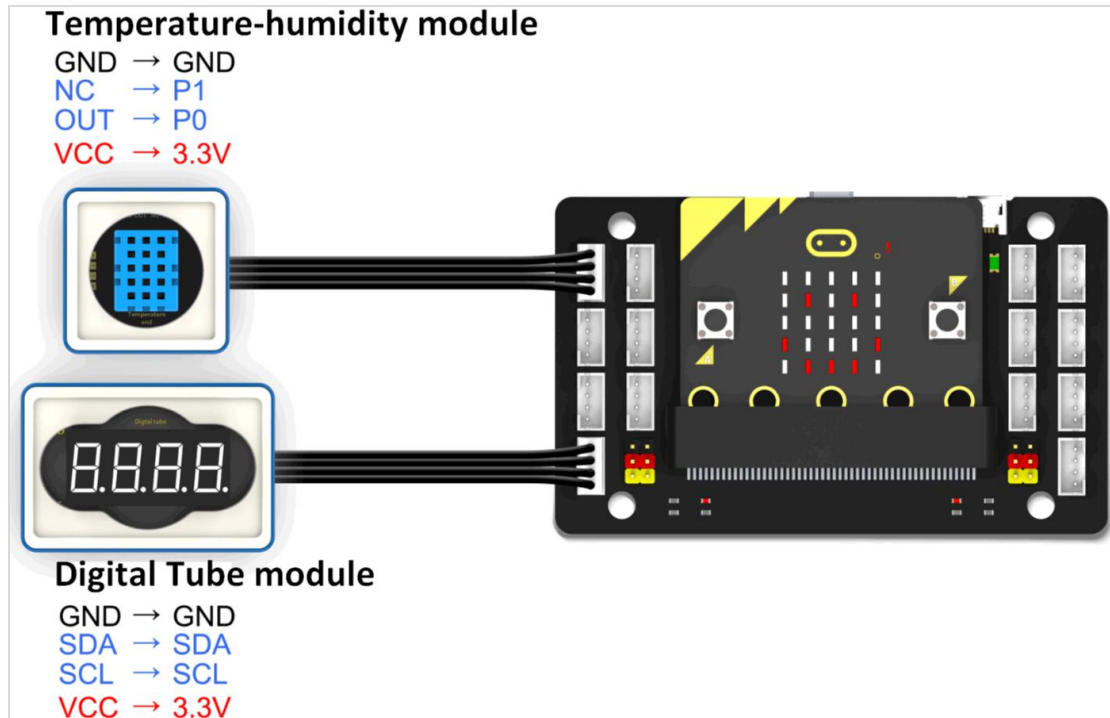
## Thermometer

### 1. Learning target

In this course, we will learn how to use Micro:bit, Temperature humidity module and digital tube module to read the current ambient temperature and humidity.

### 2. Preparation

Connect the module to Micro:bit board by expansion board, as shown below.



### 3. 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/Module-World> and <https://github.com/YahboomTechnology/tm1650> to program.

**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/Module-World>, and <https://github.com/YahboomTechnology/tm1650>, you can start programming.

### 4. Looking for blocks

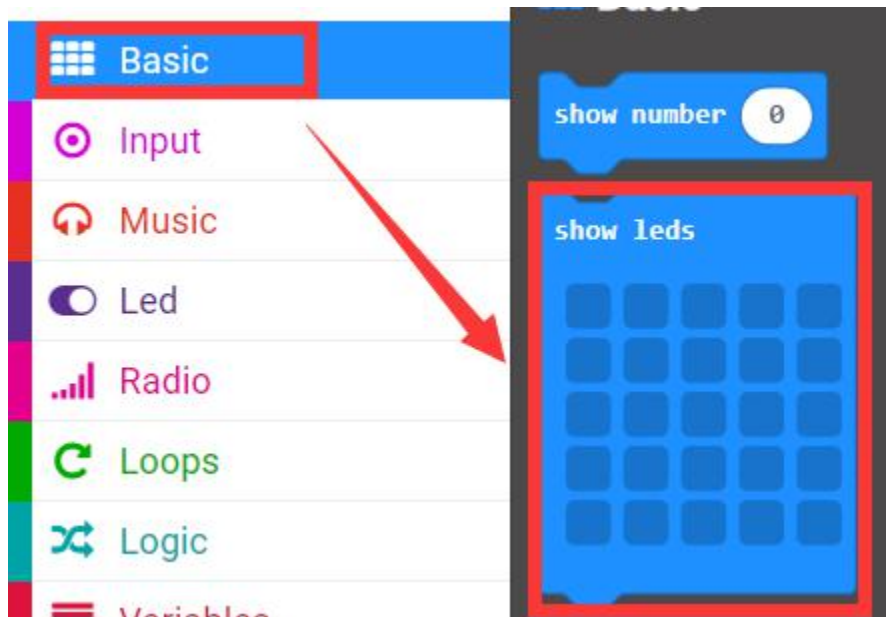
The following is the location of the building blocks required for this programming.

This screenshot shows the Scratch IDE interface. On the left, the 'ModuleWorld\_Digatal' library is selected and highlighted with a pink box. A pink arrow points from this library to a script of blocks on the right. The script consists of the following blocks:

- value of dht11 temperature(°C) at pin P0P1 (highlighted with a pink box)
- Ultrasonic pin P0P1
- PIR pin P0P1 value NoPIR
- IR pin P0P1 value Obstacle
- Button pin P0P1 value Press
- Collision pin P0P1 value NoCollision
- Vibration pin P0P1 get

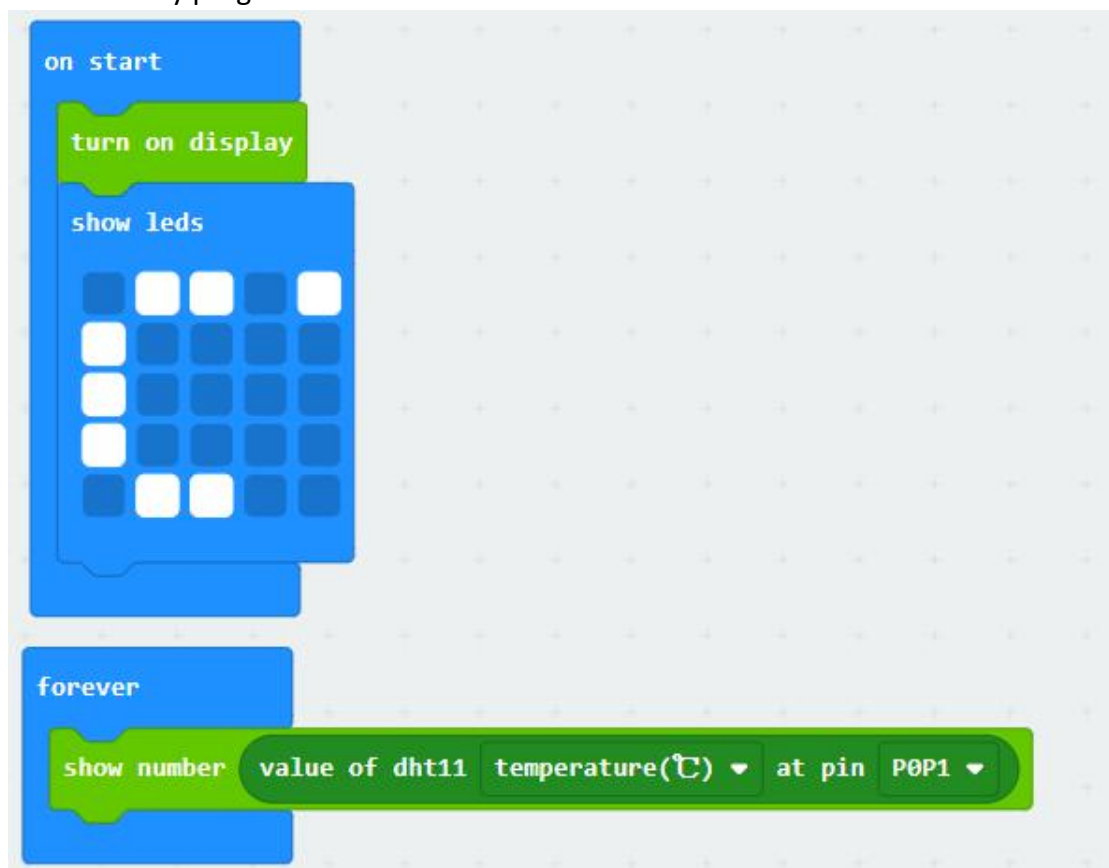
This screenshot shows the Scratch IDE interface. On the left, the '8 TM1650' library is selected and highlighted with a pink box. A pink arrow points from this library to a script of blocks on the right. The script consists of the following blocks:

- show number 100 (highlighted with a pink box)
- show hex number 123
- scroll display " " rollin
- show dot point 0 show
- show digit 0 at 0
- set intensity 3
- turn off display
- turn on display (highlighted with a pink box)



### 5.Combine block

The summary program is shown below.



### 5. Phenomenon

After the program is downloaded successfully. The temperature and humidity of the current environment will be displayed on the digital tube module.