5.Pedometer

1. Learning goals

In this lesson, we will learn to use micro:bit and Wrist:bit make a pedometer.

2.Code and analysis

Pedometer.py

```
from microbit import *
import microbit
display.show(Image.HAPPY)
step = 0
x1 = accelerometer.get_y()

while True:
    x2 = accelerometer.get_y()
    if x2 - x1 > 150:
        step = step + 1
    x1 = x2
    microbit.sleep(500)
    if button_a.is_pressed():
        display.scroll(str(step))

```

from microbit import *

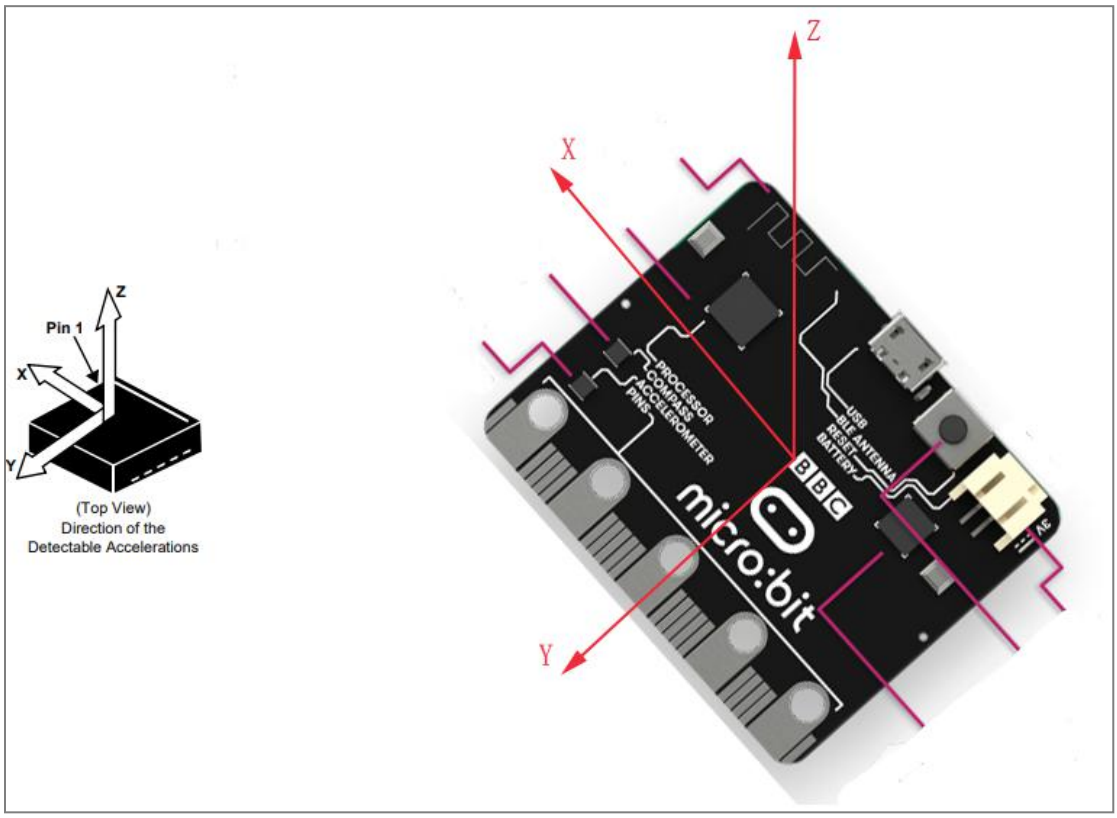
This code is to import everything from the microbit library, and any program need to uses import this library.

import music: Import music library.

acceleromete.get_y(): Measures the acceleration of the y axis. It will generates a corresponding positive or negative integer according to the direction be changed.

button_a.is_pressed(): When button A on the micro:bit is pressed, it returns True, otherwise it returns False. **button_b.is_pressed()** is the same.

display.scroll(): Scrolls horizontally on the dot matrix. If the value is an integer or a floating-point number, the integer need to be converted to a string.



According to the wear of the watch, the direction of the Y axis is mainly affected by the movement of the arm, so the number of steps is calculated by testing the acceleration change of the Y axis.

Note:

1 - The capital letter/lowercase letters must be distinguished !

2 - Correct spelling!

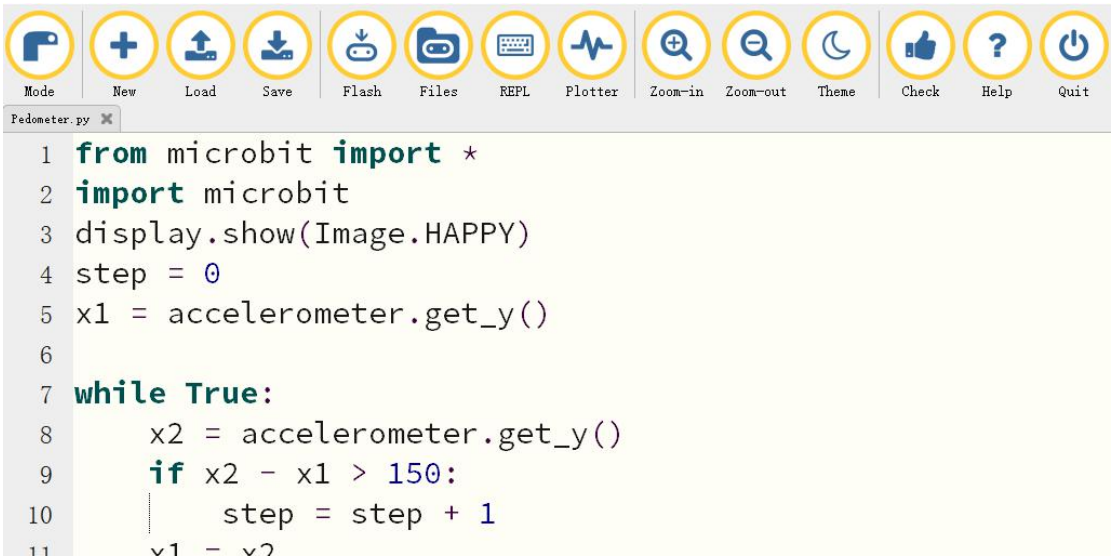
3 - Keywords such as # need a space between the content.

4 - You can only use the Tab key (tabulation key) for indentation.

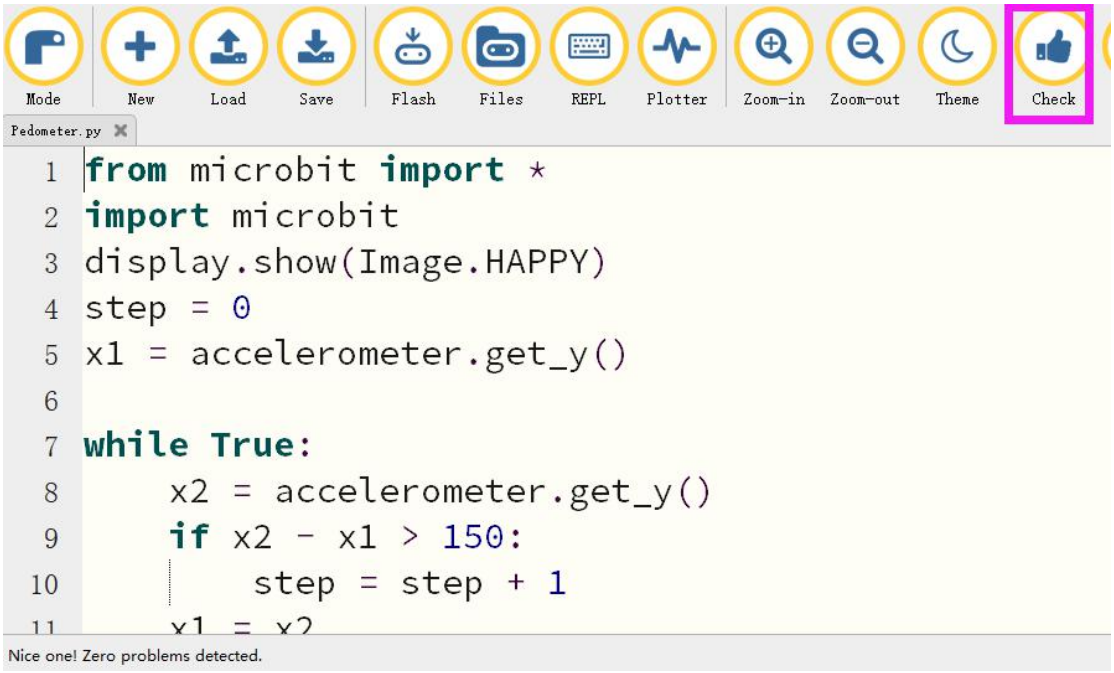
3. Programming and downloading

3.1 You should open the Mu software, and enter the code in the edit window, , as shown in figure .

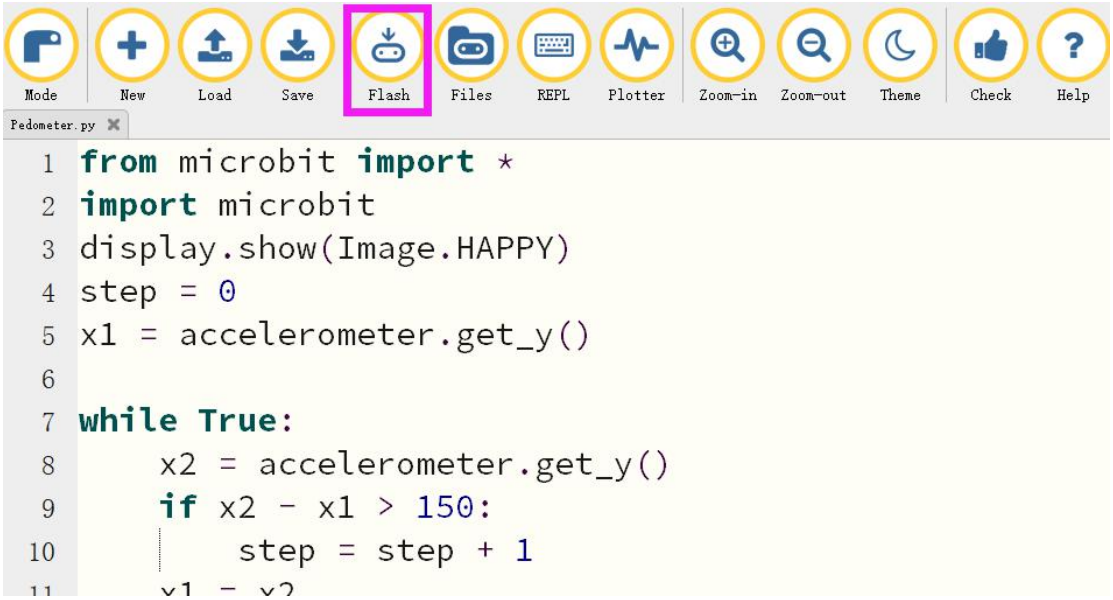
Note! All English and symbols should be entered in English, and the last line must be a space.



3.2 As shown in Figure, you need to click the Check button to check if our code has an error. If a line appears with a cursor or an underscore, the program indicating this line is wrong.



3.3 You need to connect the micro data cable to micro:bit and the computer, then click the Flash button to download the program to micro:bit.



4. Experimental phenomena

After the program is successfully downloaded.

Micro:bit dot matrix will display smile pattern, wear it while walking or swinging the arm, press the button A will display the current latest steps.