

2.7 Mask warning

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1. Learning Objective

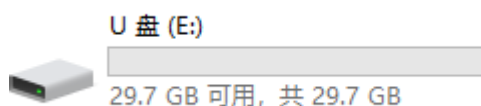
In this course. We will realize that K210 vision module performs mask recognition, and when no mask is recognized, a buzzer sounds a warning. When the mask is recognized as being worn, a cheerful sound is emitted.

2. Preparation for class

1. Remove the TF card from the k210 vision module and insert it into the card reader.






















2. Plug the card reader into the computer, and wait for the computer to recognize the USB disk.



3. Then, enter the TF card. You will see following content.




 K210	2023/6/28 9:30
 KPU	2023/3/15 20:05
 main.py	2023/5/29 17:22

4. Go to the k210 folder, find the **2.7_3.6_face_mask_detect.py** file from the folder and copy it to the root directory.

 2.1_color_recognition.py	6/7/2023 12:23
 2.2_3.2_find_barcodes.py	6/15/2023 5:40
 2.3_3.3_find_qrcodes.py	6/26/2023 9:16
 2.4_find_apriltags.py	6/2/2023 10:15
 2.5_3.4_object_detect.py	6/26/2023 2:14
 2.6_3.5_self_learning.py	6/28/2023 10:00
 2.7_3.6_face_mask_detect.py	6/28/2023 9:20
 2.8_face_recog.py	6/28/2023 9:21
 2.9_3.8_mnist.py	6/15/2023 4:42
 3.1_color_rgb.py	6/28/2023 4:50
 3.7_face_detect.py	6/15/2023 11:23
 3.9_color_follow_line.py	7/14/2023 5:06
 3.10_follow_apriltag.py	7/13/2023 10:58
 3.11_follow_color.py	7/13/2023 12:11
 3.12_Autopilot..py	7/25/2023 9:29
 K210	8/24/2023
 KPU	8/24/2023
 2.7_3.6_face_mask_detect.py	7/25/2023
 main.py	8/24/2023

5. Delete the original **main.py** file.

Then, re-name the **2.7_3.6_face_mask_detect.py** file as the **main.py** file.

 K210	8/24/2023 3:31
 KPU	8/24/2023 3:31
 2.7_3.6_face_mask_detect.py	7/25/2023 9:21

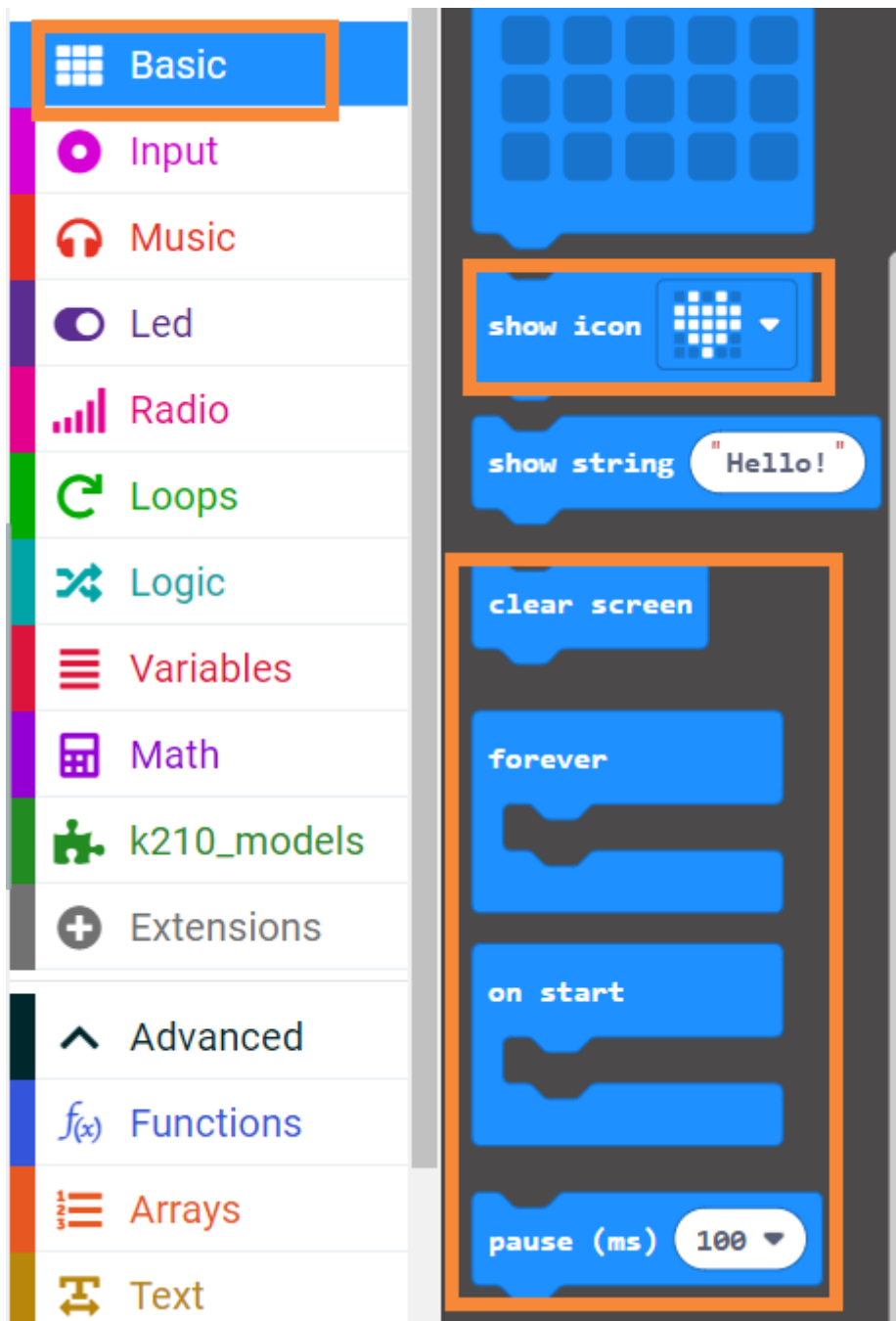
6. After re-name, pull out the card reader, remove the TF card and insert it back into the k210 vision module.

3. Programming Methods

Online programming: first copy this URL <https://makecode.microbit>. and enter the online programming interface.

Copy the package URL: <https://github.com/YahboomTechnology/K210-Module.git> to the input field, click confirm to add the package, after that you can use the blocks of K210 vision module package.

4. Blocks



Music

- Led
- Radio
- Loops
- Logic
- Variables
- Math
- k210_models
- Extensions

Advanced

$f(x)$ Functions

Arrays

Text

Tone

play tone Middle C for 1 ▾ beat until done ▾

ring tone (Hz) Middle C

rest for 1 ▾ beat

Middle C

Volume

set volume 127

volume

stop all sounds

Music

- Led
- Radio
- Loops
- Logic
- Variables
- Math
- k210_models
- Extensions

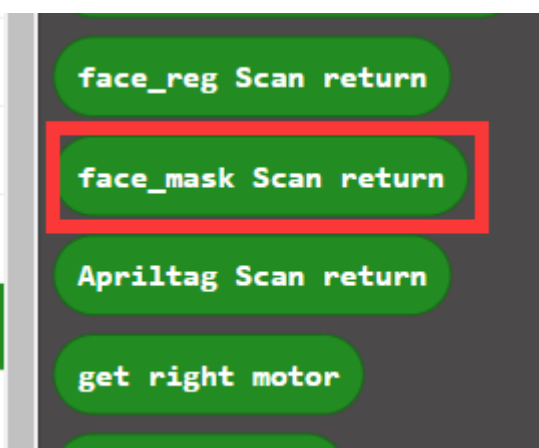
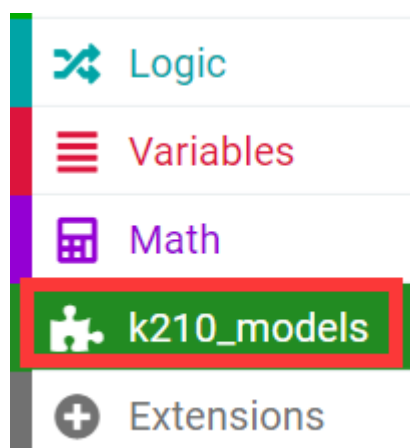
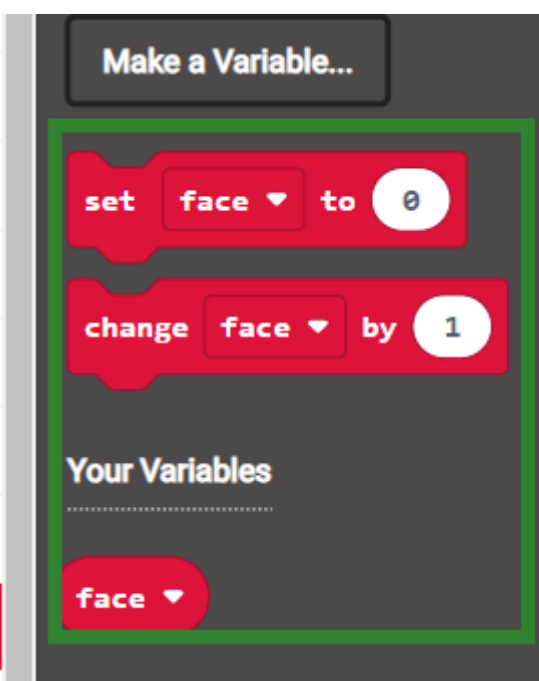
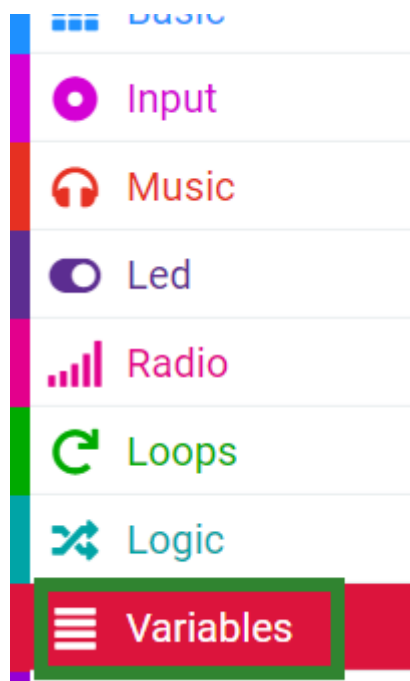
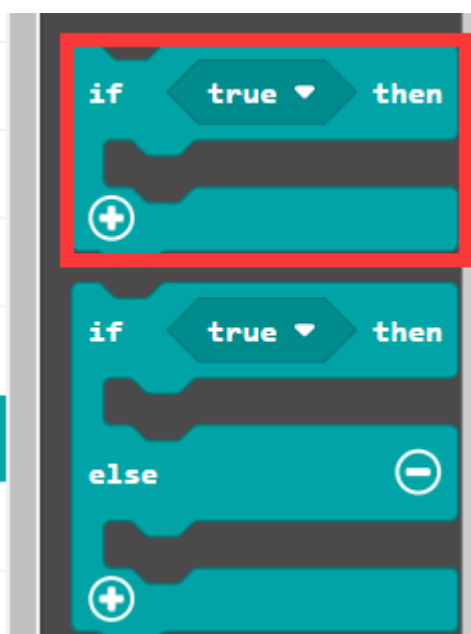
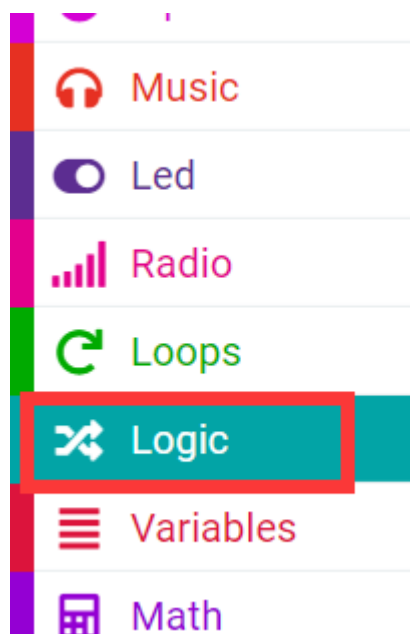
play melody [Musical Notation] a

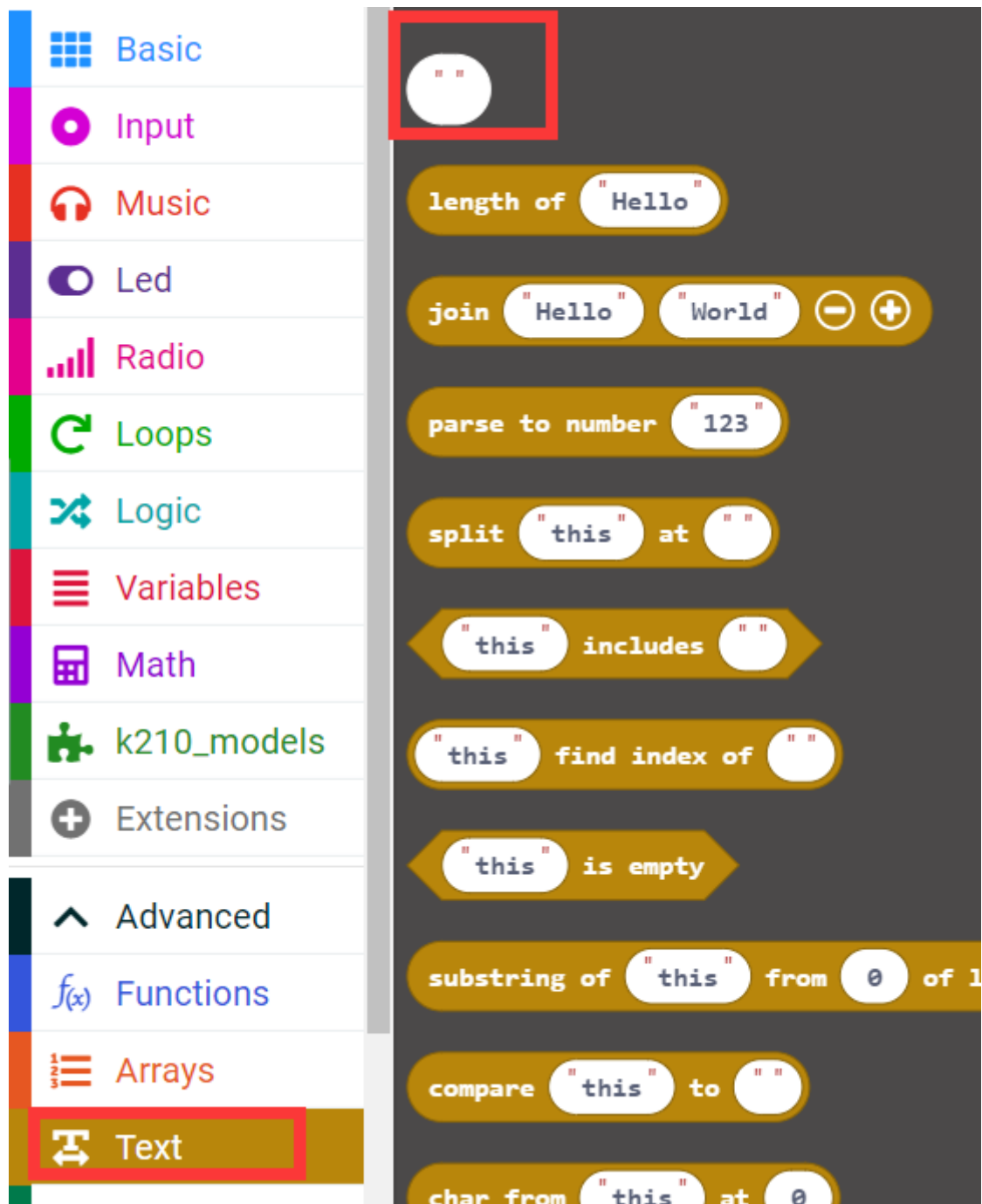
Tone

play tone Middle C for 1 ▾

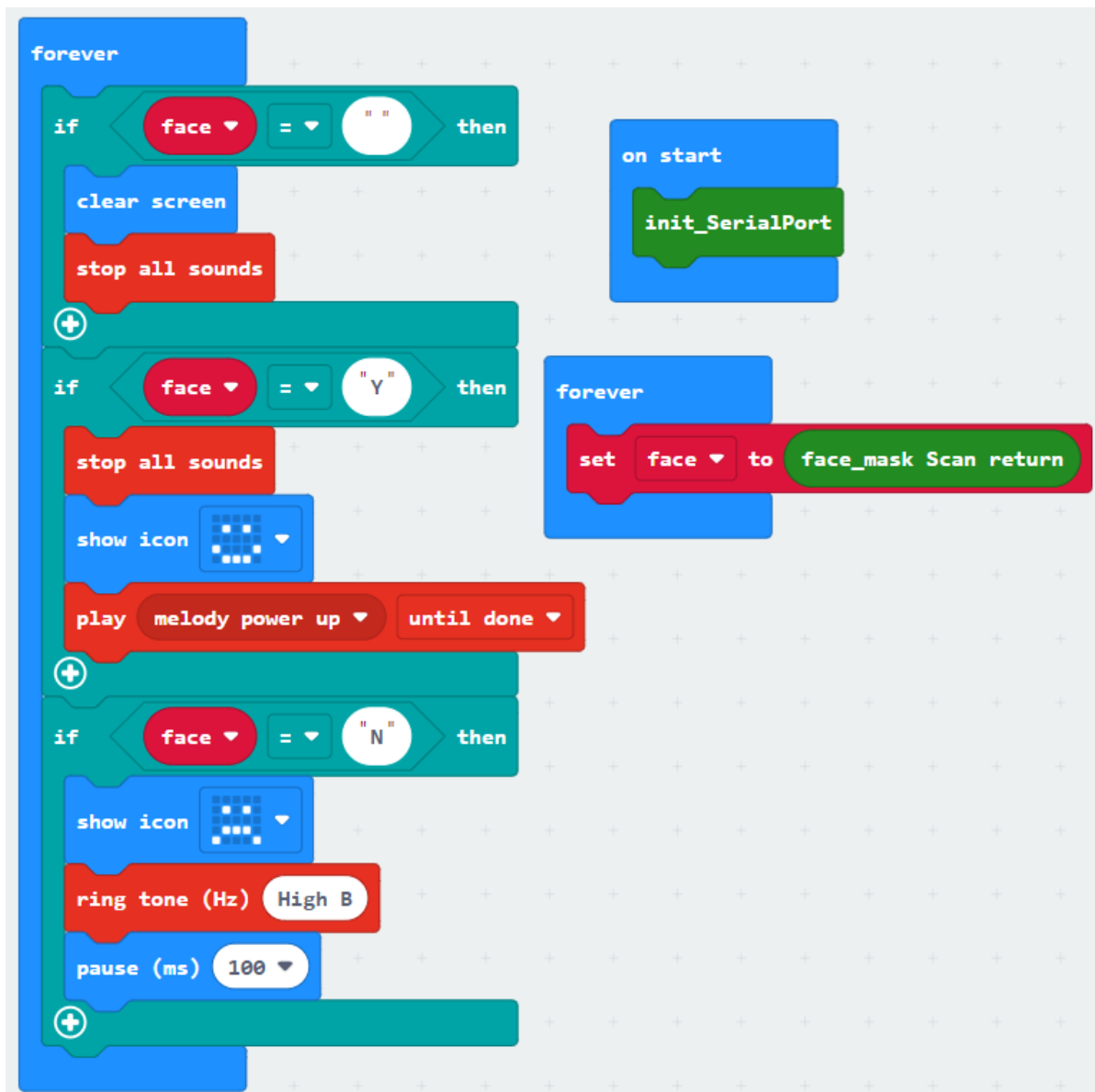
ring tone (Hz) Middle C

rest for 1 ▾ beat





5. Code



6. Download code

Connect the Micro:bit board to the computer via Micro USB cable, the computer will pop up a USB stick.

Then, select the **microbit-mask.hex** file and right click to send it to the Micro:bit U disk.

Wait until sending is complete and unplug the Micro:bit USB cable. Plug the Micro:bit board into the car.

7. Experimental phenomena

After starting the car, wait for the screen to display the camera image.

After the screen displays the picture, take a picture of the face with the camera, when there is wearing a mask, it displays a green frame and "with mask", the Micro:bit led array shows a smiling face and the trolley emits cheerful music; when there is no mask, it displays a red frame and "without mask", the Micro:bit led array shows a crying face and the trolley alarms with a buzzer.

