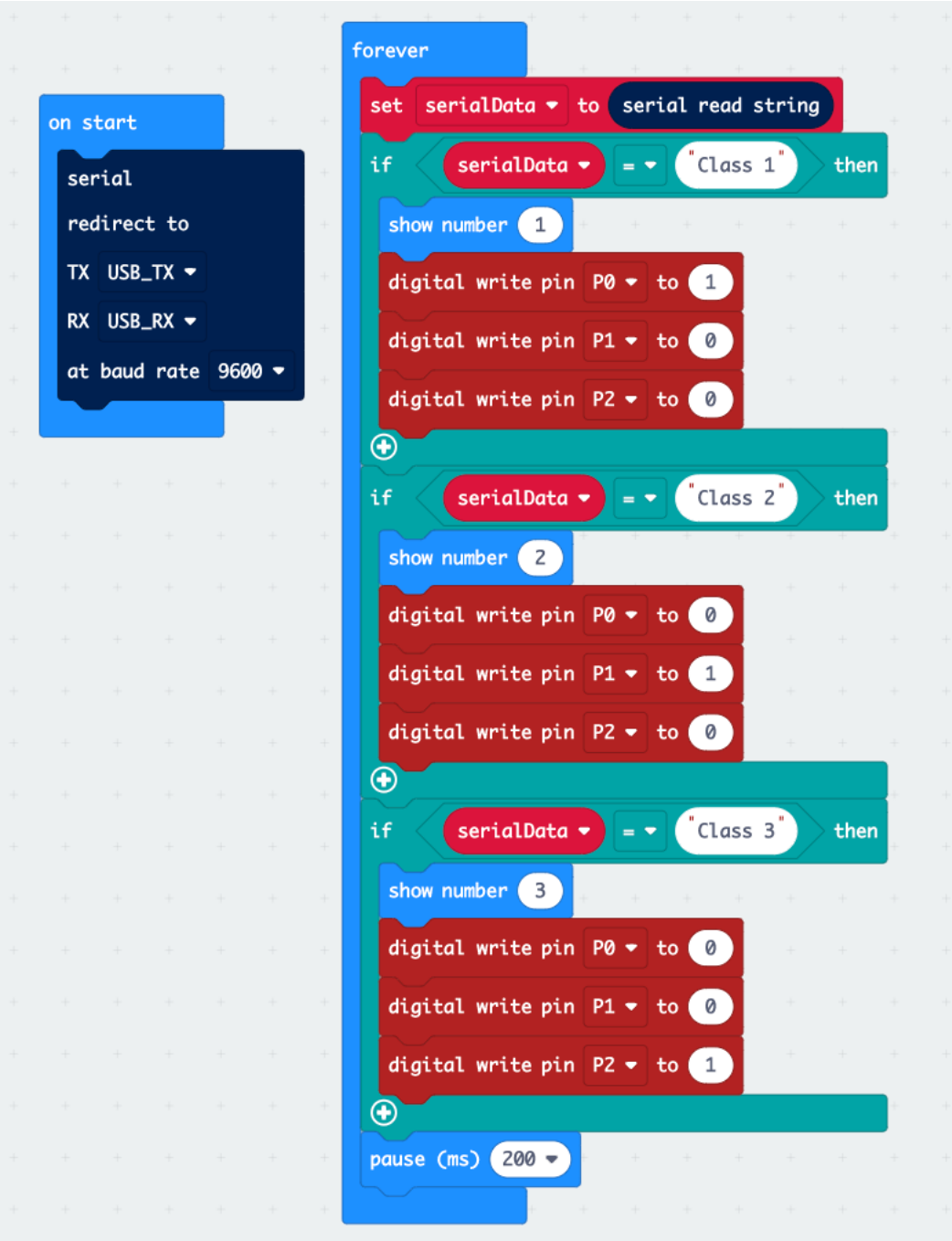
Instructions to set up and use the Teachable Machines image trainer, micro:bit, and Snap Circuits:

1. Set up the Teachable Machines image trainer: a. Visit the Teachable Machines website at https://teachablemachine.withgoogle.com/. b. Click on "Get Started." c. Select "Image Project." d. Train your three classes (Class 1, Class 2, and Class 3) with images. Remember to include a couple of inaccurate images in Class 1 and Class 2 to represent hacked machine training data. e. Once trained, click "Export Model" and select "Upload my model."
2. Connect the Snap Circuits to the micro:bit: a. Connect the white LED to the P0 pin on the micro:bit. b. Connect the yellow LED to the P1 pin on the micro:bit. c. Connect the motor to the P2 pin on the micro:bit.
3. Upload the provided Python code to the micro:bit:

```
serialData = ""
serial.redirect(SerialPin.USB_TX, SerialPin.USB_RX,
BaudRate.BAUD_RATE9600)

def on_forever():
    global serialData
    serialData = serial.read_string()
    if serialData == "Class 1":
        basic.show_number(1)
        pins.digital_write_pin(DigitalPin.P0, 1)
        pins.digital_write_pin(DigitalPin.P1, 0)
        pins.digital_write_pin(DigitalPin.P2, 0)
    if serialData == "Class 2":
        basic.show_number(2)
        pins.digital_write_pin(DigitalPin.P0, 0)
        pins.digital_write_pin(DigitalPin.P1, 1)
        pins.digital_write_pin(DigitalPin.P2, 0)
    if serialData == "Class 3":
        basic.show_number(3)
        pins.digital_write_pin(DigitalPin.P0, 0)
        pins.digital_write_pin(DigitalPin.P1, 0)
        pins.digital_write_pin(DigitalPin.P2, 1)
```

```
    basic.pause(200)
basic.forever(on_forever)
```



1. a. Go to the micro:bit Python Editor at https://python.microbit.org/. b. Copy the provided Python code and paste it into the editor or go to https://makecode.microbit.org and manually create the block logic

provided.. c. Click on "Download" to save the .hex file to your computer. d. Connect your micro:bit to your computer using a USB cable. e. Drag and drop the downloaded .hex file onto the micro:bit drive in your file explorer.
2. Connect the micro:bit to the AI Training website: a. Go to the website that supports connecting a micro:bit to a Teachable Machines model (https://ai-training.glitch.me) b. Follow the instructions on the website to connect your micro:bit via USB.
3. Test the setup: a. Show the trained images to the webcam or camera connected to the Teachable Machines model. b. Observe the micro:bit display and the activation of the corresponding Snap Circuits components (white LED, yellow LED, or motor) based on the detected class.

The students can now learn about machine learning, circuit design, and cybersecurity by observing how the Teachable Machines model classifies the images and how the micro:bit and Snap Circuits respond to the detected classes. Students should also discuss the implications of inaccurate or hacked training data on the performance of the AI model.