Spooky Signals: micro:bit Ghost Throwing Challenge

Overview

The Teleporting Ghost project brings coding to life by creating an interactive ghost that can magically travel between two micro:bits! Using the micro:bit's built-in motion sensor and radio capabilities, you will learn how devices can communicate wirelessly while creating a fun and spooky experience.

What you will Learn

This hands-on project introduces important programming concepts like:

- [ ] Wireless communication between devices
- [ ] Using sensors (accelerometer) to detect motion
- [ ] Creating custom images using LED displays
- [ ] Understanding basic program flow and logic

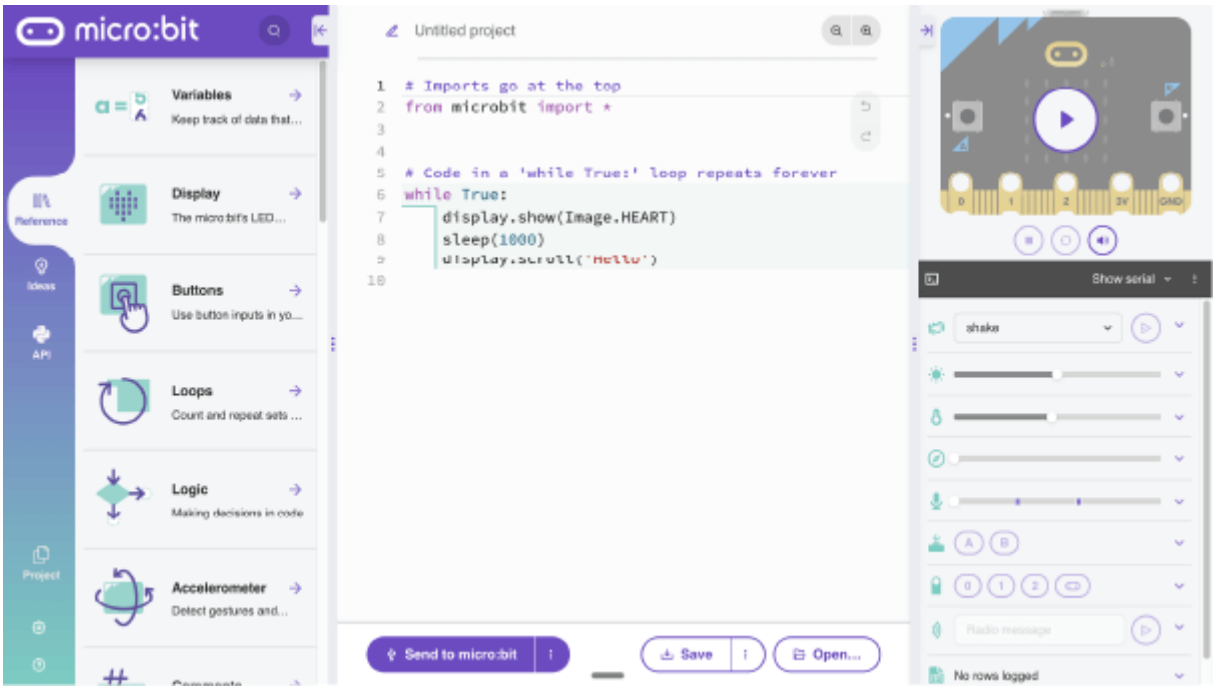
What you will Need

- 1 x micro:bit
- 1 x micro USB cable
- 1 x battery pack for the micro:bit (optional)

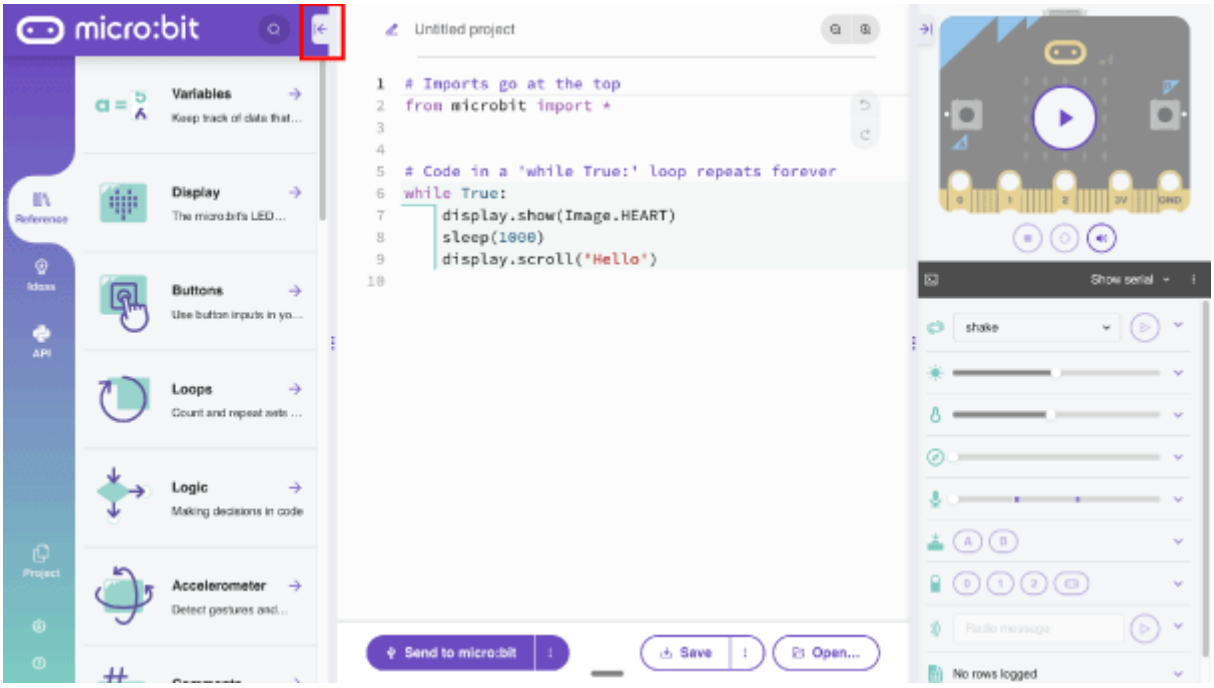
The project is not only entertaining but also demonstrates how modern devices can sense movement and share information wirelessly - the same technology used in everything from video game controllers to smart home devices.

Navigating to the Python Editor

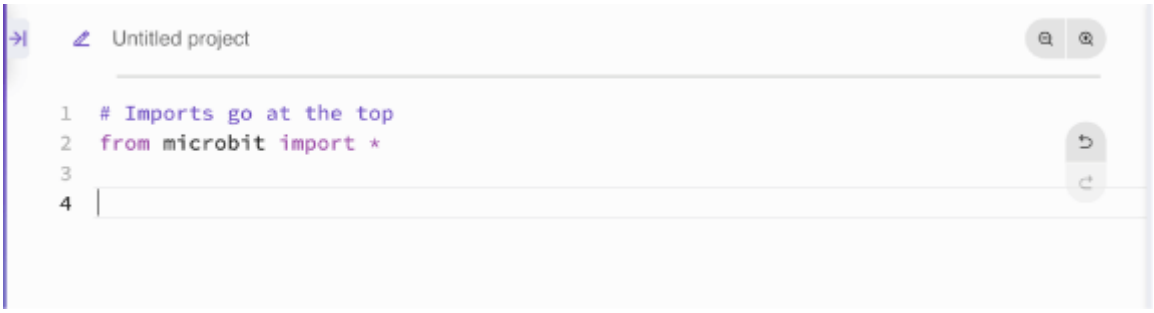
1. Open your favourite browser (we recommend Google Chrome).
2. Within the address bar of the browser type python.microbit.org or on a tablet or phone press create code.



3. Close the left hand panel by selecting the arrow pointing to the left. See the image below.



4. Delete the code from line 5 -9 on the main code area.



We are now ready to start coding!

Coding

Importing Python Libraries

Below `from microbit import *` type `import radio`. This will add the radio library so we can use it within our code.

Configure the Radio Module

Type the following code below `import radio`. This will turn the radio module on and set the radio group.

```
radio.on()
radio.config(group=30)
```

> USING MORE THAN TWO MICRO:BITS
> If you are using more than two micro:bits make sure each pair is set to a different radio group

Creating the while True Loop

Type the following line of code under `radio.config(group=30)`

```
while True:
```

Once you press enter your cursor will automatically indent. Start typing the rest of your code from here.

Creating 'Incoming' Variable

Within the `while loop` create the **incoming** variable and set it to `radio.receive()`. By typing the following code.

```
incoming = radio.receive()
```

Creating the Incoming Message

Show a ghost on the display if message is incoming.

```
if incoming:
    display.show(Image.GHOST)
```

Creating Outgoing Message

> NOTE
> Make sure the cursor is back in line with the `if` statement.

We are now going to clear the micro:bit display and send the message **GHOST** if the micro:bit detected a 'shake'.

```

```

```
if accelerometer.was_gesture('shake'):
    display.clear()
    radio.send("GHOST")
```

Completed Code

```
# Imports go at the top
from microbit import *
import radio

radio.on()
radio.config(group=30)

while True:
  incoming = radio.receive()
  if incoming:
    display.show(Image.GHOST)
  if accelerometer.was_gesture('shake'):
    display.clear()
    radio.send("GHOST")
```

Well done you have now completed the code for Spooky Signals. Let's move on to learn how to download it to the micro:bit.

Downloading the code

Pairing the micro:bit to your computer

1. Take the micro USB cable and connect the micro:bit to the computer.
2. Select the **3 little dots** next to **send to micro:bit**.

3. Select **Connect** and follow the on screen prompts.

Downloading code to the micro:bit

1. Select **Send to micro:bit** to download the code to your micro:bt.

Lets move on to see how to play.

How to Play

Using the micro:bit

When you shake one micro:bit, the ghost displayed on its LED screen will vanish and mysteriously appear on the other micro:bit's display. It's like playing a game of supernatural catch!

Grab a friend and have a go.