Random Dice

```
from microbit import *
import random

# A list of all dice images
dice = [Image("00000:"
              "00000:"
              "00900:"
              "00000:"
              "00000"),

        Image("90000:"
              "00000:"
              "00000:"
              "00000:"
              "00009"),

        Image("90000:"
              "00000:"
              "00900:"
              "00000:"
              "00009"),

        Image("90009:"
              "00000:"
              "00000:"
              "00000:"
              "90009"),

        Image("90009:"
              "00000:"
              "00900:"
              "00000:"
              "90009"),

        Image("90009:"
              "00000:"
              "90009:"
              "00000:"
              "90009")]

display.show(Image.HAPPY)
```

```
while True:
    if accelerometer.was_gesture('shake'):
        display.show(dice, loop=True, wait=False, delay=100)
        sleep(4000)
        display.show(random.choice(dice))
    sleep(10)
```

This is similar to the 8-Ball example also on the website.

A list of images is given to the microbit. When it is shaken, the microbit uses `random.choice` to pick an item from the list.

Code Explained

There are two main elements to this script: representing images as strings and picking a random item from a list.

Using Images

`Image` class

The microbit has the `Image` class which contains many images, such as `Image.HAPPY` and `Image.SAD`. These are simply string representations of the images. We can connect to the microbit over `REPL` and see these strings:

```
>>> print(Image.HAPPY)
Image(
    '00000:'
    '09090:'
    '00000:'
    '90009:'
    '09990:'
)
>>>
```

`0` is off whereas `9` is the LED lit at full intensity.

Making Custom Images

It is possible for use to then draw our own images on the display. Here `add_sign` variable is a representation of an addition sign.

```
add_sign = Image("00900:"
                 "00900:"
                 "99999:"
                 "00900:"
                 "00900")
```

Formatting Image Strings

There are many ways of representing this string. With a colon (as above) or with a new line (\n):

```
add_sign = Image("00900\n"
                 "00900\n"
                 "99999\n"
                 "00900\n"
                 "00900")
```

It is also possible to keep the image representation all on one line:

```
Image("00900:00900:99999:00900:00900")
```

Lists of Images

In this program, all six dice faces are in a list called `dice`. There are six items in the list in total.

The list begins and ends with a `[ ]` square brackets. Each item in the list is separated with a comma.

```
dice = [
        Image("00000:00000:00900:00000:00000"), # 1
        Image("90000:00000:00000:00000:00009"), # 2
        Image("90000:00000:00900:00000:00009"), # 3
        Image("90009:00000:00000:00000:90009"), # 4
        Image("90009:00000:00900:00000:90009"), # 5
        Image("90009:00000:90009:00000:90009")  # 6
        ]
```

This is exactly the same as the main example above except the image strings are all on one line.

Logic

Was it Shaken?

```
if accelerometer.was_gesture("shake") is True:
```

`.was_gesture(gesture_name)` returns `True` or `False` if `gesture_name` was the most recently detected gesture. `.was_gesture("shake")` returns True if it was shaken.

Pick Random Item

The `dice` list has 6 items. `random.choice` is used on the list to return a random item:

```
display.show(random.choice(dice))
```

Using `random` requires the `random` module to be imported. This is done at the beginning of the program:

```
from microbit import *
import random
```

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Random Dice

Make a dice to display a random image each time the microbit is shaken.

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