

EVE

tutorials



MicroPython

Displaying Text and Graphics

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BEGINNER PROGRAMMING LESSON

LESSON OBJECTIVES

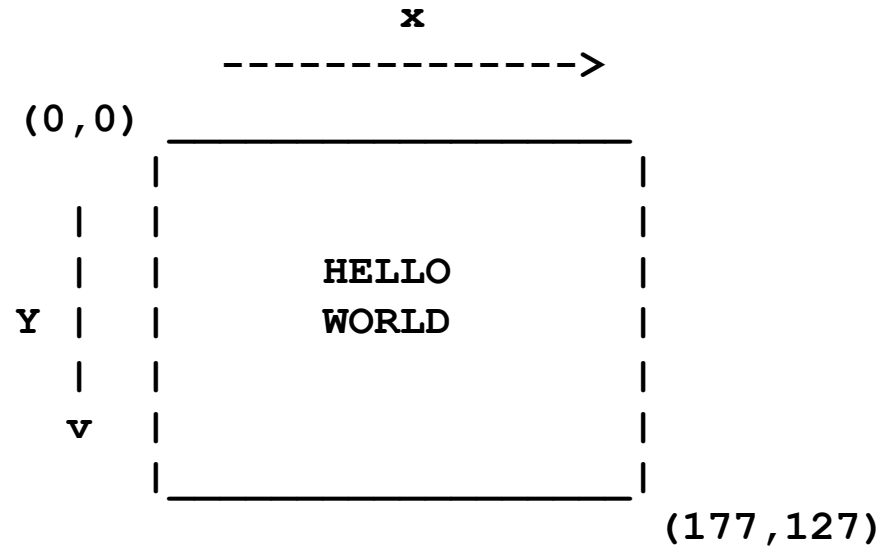
1. **Learn to use the display class to display text and graphics**
2. **Understand why the display class can be useful in programming**

DISPLAY.TEXT METHOD

```
# This displays "Hello world" on the screen  
# at the coordinate of (10, 50).  
brick.display.text("Hello world", (10, 50))
```

- The `display.text` method is to show information on the screen.
- You can control the coordinate of the text.
- **NOTE:** The method uses only one font available and its size.

THE COORDINATE OF THE SCREEN



THE SYNTAX OF DISPLAY.TEXT METHOD

classmethod display.**text**(text, coordinate=None)

Display text.

Parameters

- **text** (str) – The text to display.
- **coordinate** (tuple) – (x, y) coordinate tuple.

It is the top-left corner of the first character. If no coordinate is specified, it is printed on the next line.

CHALLENGE 1: USING DISPLAY.TEXT METHOD

Can you write a program to display text in the middle of the screen?

Make the display method run for 3 seconds.

Can you also move while doing this?

SOLUTION OF CHALLENGE 1

```
7  
8 # This displays "Hello world" on the screen  
9 # at the coordinate of (45, 70).  
10 brick.display.text("Hello World", (45, 70))  
11  
12 # This moves straight for 3 seconds  
13 robot.drive_time(500, 0, 3000)  
14  
15 # This stops the motor.  
16 robot.stop() # Stop.COAST is a default  
17
```

CHALLENGE 2: TWO LINES OF TEXT

Now what if you want “Hello” to appear on one line and “World” to appear on the next line?

SOLUTION OF CHALLENGE 2

```
# Display two lines of text  
brick.display.text("Hello", (20, 30))  
brick.display.text("World") # just the next line
```

The line with “World” has no coordinate specified. Hence, it is on the next line.

DISPLAY.IMAGE METHOD

```
# Show a built-in image of two eyes looking upward.  
brick.display.image(ImageFile.UP)
```

- The `display.image` method is to show an image on the screen.
- The coordinate of the image is located at (0, 0) of the screen.
- **NOTE:** It is possible to show a custom image from your project folder.

THE SYNTAX OF DISPLAY.IMAGE METHOD

classmethod display.image(file_name)

Show an image file.

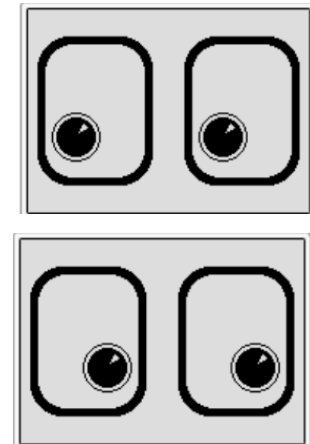
Parameters

- **file_name** (str) – An image

CHALLENGE 3: USING `DISPLAY.IMAGE` METHOD

Can you display eyes on the screen while moving? Alternate eyeballs that look left and right.

1. Turn the motor on.
2. Use the `display.image` method.
3. Wait for 2 seconds.
4. Repeat steps 2 – 3 three times with alternating images.
5. Stop the motor.



Feel free to have fun with the challenge and make it yours!

SOLUTION OF CHALLENGE 3

```
# This moves straight indefinitely.
robot.drive(200, 0)

# Display images of moving eyes from left to right.
brick.display.image(ImageFile.BOTTOM_LEFT); wait(2000)
brick.display.image(ImageFile.BOTTOM_RIGHT); wait(2000)
brick.display.image(ImageFile.BOTTOM_LEFT); wait(2000)
brick.display.image(ImageFile.BOTTOM_RIGHT); wait(2000)

# This stops the motor.
robot.stop() # Stop.COAST is a default
```

DISCUSSION GUIDE

Why might you want to know how to use the `display.text` method?

- You might want to know the sensor value your robot is seeing.
- You might have to program a robot to stop when the robot reaches a red line but it stops before.
- Does the robot see the same thing you see?
- You can display the value on the screen and check.

It's a great debugging tool. You can learn more about debugging code in one of our intermediate lessons.

CREDITS

- This tutorial was created by Sanjay Seshan and Arvind Seshan
- More lessons are available at www.ev3tutorials.com



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