Colourful Creations

Introduction

In this project you will create a dictionary of colours which maps hard to remember colour codes into friendly names.

Step 1: Using hex colour codes

✅ Activity Checklist

Python turtle has predefined colours such as 'red' and 'white' but you can also use hex colour codes (you may have seen these in the HTML & CSS course.)

- [ ] Open the blank Python template Trinket: **jumpto.cc/python-new**.
- [ ] Add the following set up code for using the turtle:

```
from turtle import *

screen = Screen()
screen.setup(400, 400)
screen.bgcolor('white')
```

Notice that you used a named colour: 'white'.

☐ Turtle has a list of colour names that you can use, but sometimes you want to choose your own colours. Turtle also allows you to use hex colour codes.

Open **jumpto.cc/colour-picker** and choose colour you like. Find it's hex code beginning with a '#', such as '#A7E30E'.

☐ Copy the hex code, including the hash, by highlighting it and then right-clicking and choosing Copy, or using Ctrl-C.

☐ Now change the line of code that sets the screen colour to use your colour. For example:

```
from turtle import *

screen = Screen()
screen.setup(400, 400)
screen.bgcolor('#A7E30E')
```

You can use right-click and Paste or Ctrl-V to paste your hex code into trinket.

☐ Choose another hex colour code and use it to create coloured text:

```
screen = Screen()
screen.setup(400, 400)
screen.bgcolor('#A7E30E')

color('#FA057F')
style = ('Arial', 40, 'bold')
write('HELLO', font=style, align='center')
hideturtle()
```

HELLO

You don't have to use the 'Arial' font, you could try 'Verdana', 'Times' or 'Courier'.

'40' is the font size, you can try changing that too.

☐ Try different colours until you get two that you really like that look good together.

Save Your Project

Step 2: A Colour Dictionary

✅ Activity Checklist

Using hex colour codes is really flexible but they are hard to remember.

As you probably already know, a dictionary allows you to look up a word, and see it's meaning. In Python, a dictionary is even more flexible that that - it allows you to look up a value for any 'key' in the dictionary.

Let's create a dictionary to map from human-friendly colour names (keys) to computer-friendly hex codes (values).

☐ A dictionary is contained in curly brackets.

Create an empty dictionary called `colours` :

```
screen = Screen()
screen.setup(400, 400)

colours = { }

screen.bgcolor('#A7E30E')
```

☐ Choose cool names for your colours and edit the `colours = {}` line to add entries to the dictionary for them.

Here's an example colour dictionary:

```
colours = {
    'verylime': '#A7E30E',
    'reallyraspberry': '#FA057F'
}
```

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A colon `:` separates the key (colour name) from the value (hex code.) You need a comma `,` between each key:value pair in the dictionary.

☐ Now you don't need to remember the hex codes, you can just look them up in the dictionary.

Adapt the following code to use your colour names:

```
colours = {
    'verylime': '#A7E30E',
    'reallyraspberry': '#FA057F'
}
print(colours['verylime'])
print(colours['reallyraspberry'])
```

```
Powered by 🔑trinket        ⊘
#A7E30E
#FA057F
```

The key goes inside square brackets '[]' after the name of the dictionary.

☐ Now you can update your code to look up colours in the dictionary:

```
screen.bgcolor(colours['verylime'])

color(colours['reallyraspberry'])
style = ('Arial', 40, 'bold')
write('HELLO', font=style, align='center')
hideturtle()
```

HELLO

☐ Test your code to make sure your text still displays correctly.

Save Your Project

Challenge: More colours!

Can you add more colours to your dictionary and try them out? Use **jumpto.cc/colour-picker** to find more colours.

Don't forget to give your colours awesome names.

Here's some example code to remind you how to use the turtle:

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```
penup()
goto(0, 100)
color(colours['reallyraspberry'])
style = ('Arial', 40, 'bold')
write('HELLO', font=style, align='center')
right(90)
forward(60)
color(colours['awesomeorange'])
write('WORLD', font=style, align='center')
hideturtle()
```

Save Your Project

Challenge: Create a poster

Designers often create a 'palette' of colours that work well together for a particular theme such as desert or space.

Can you create a new Python project that uses a dictionary for a themed colour palette. You could choose autumn, forest, sea, Christmas, ice cream, the colours of your favourite sports team or an idea of your own.

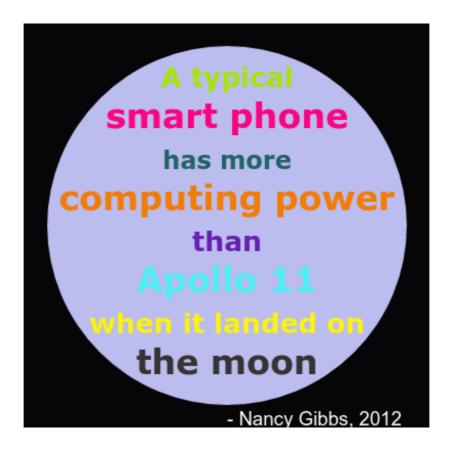Create a poster using your colour palette dictionary.

You can also use other turtle commands that you know such as `forward` , `right` , `left` , `penup` and `pendown` .

Maybe you could add a border to your poster?

Other useful turtle commands:

☐ `circle(50)` draws a circle outline with radius 50.
☐ `dot(100)` draws a filled in circle with diameter 100.

Here's an example:

A typical **smart phone** has more **computing power** than **Apollo 11** when it landed on **the moon**

- Nancy Gibbs, 2012

Save Your Project