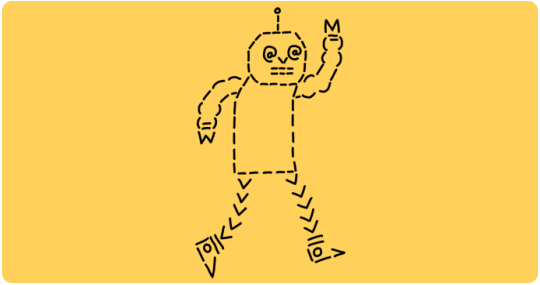
Projects

About me

Use the Python programming language to create pictures out of text

Python



Step 1 Introduction

In this project you will learn how to write a Python program telling people all about you.

What you will make

```
Hi, I can code in Python!

My favourite animals are sheep

 o-###-
   | |   #

I live in Glasgow

   _|_
  |   |
  |#  |____
  |       |
  |  #|  # |
 _|___|_#__|_

What year were you born? 2006
In the year 2025 you'll be 19 years old!
```

What you will learn

This project covers elements from the following strands of the **Raspberry Pi Digital Making Curriculum** (http://rpf.io/curriculum):

- **Use basic programming constructs to create simple programs** (https://www.raspberrypi.org/curriculum/programming/creator)

Additional information for educators

If you need to print this project, please use the **printer-friendly version** (https://projects.raspberrypi.org/en/projects/about-me/print).

Use the link in the footer to access the GitHub repository for this project, which contains all resources (including an example finished project) in the 'en/resources' folder.

Step 2 What you will need

Hardware

- A computer capable of accessing the **trinket.io** (https://trinket.io) website

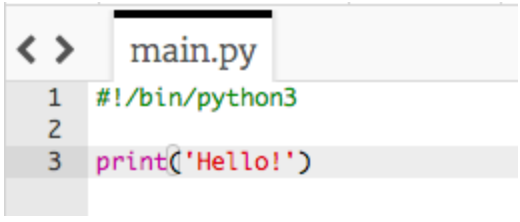
Software

This project can be completed in a web browser using **trinket.io** (https://trinket.io)

Step 3 Saying hello

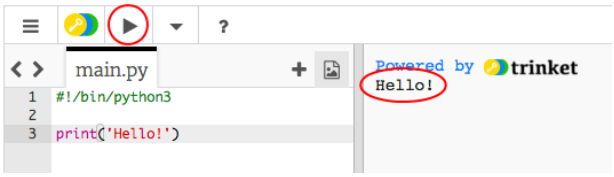
Let's start by writing some text.

- Open the blank Python template trinket: **jumpto.cc/python-new** (http://jumpto.cc/python-new).
- Type the following into the window that appears:



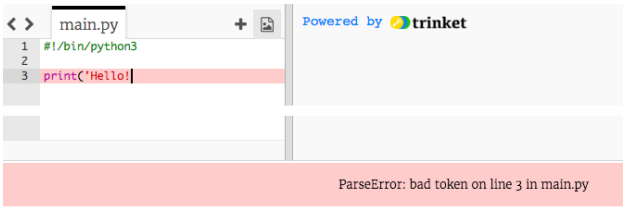
The line `#!/bin/python3` just tells Trinket that we're using Python 3 (the latest version).

- Click **Run**, and you should see that the `print()` command prints everything between the quote marks `''`.



If you've made a mistake, you'll get an error message telling you what went wrong instead!

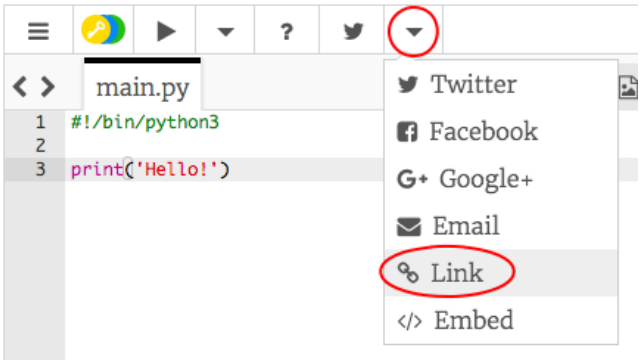
- Try it! Delete the end quote `'` or the closing bracket `)` (or both) and see what happens.



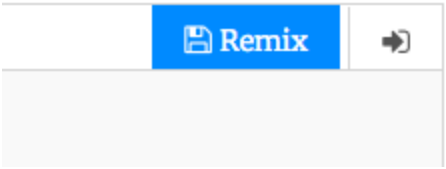
- Add the quote or bracket back in, and click **Run** to make sure your project works again.

You don't need a Trinket account to save your projects!

If you don't have a Trinket account, click the down arrow and then click **Link**. This will give you a link that you can save and come back to later. You'll need to do this every time you make changes, as the link will change!



If you have a Trinket account, you can click **Remix** to save your own copy of the trinket.



Step 4 Challenge: What's on your mind?

Change the code you just wrote to print something more interesting about you!

```
Hi, I can code in Python!
```

Step 5 ASCII art

Let's print something much more fun than text: ASCII art! ASCII art (pronounced '*ask-e*') is creating **pictures out of text**.

- Let's add some art to your program — a picture of a dog!

```
#!/bin/python3

print('Hello!')

print('Here's a picture of a dog:')
print(' o____ ')
print('  |||| ')
```

The dog's legs are made using the pipe character `|` which you can type by pressing `Shift + \` on most UK/US English keyboards.

- If you click **Run**, you'll see that there's a bug in your new code.

```
print('Here's a picture of a dog:')
print(' o____ ')
print('  |||| ')
```

That's because your text contains an apostrophe `'`, which Python thinks is the end of the text!

```
print('Here's a picture of a dog:')
```

- To fix this, just put a backslash `\` before the apostrophe in the word `here's`. This tells Python that the apostrophe is part of the text.

```
#!/bin/python3

print('Hello!')

print('Here\'s a picture of a dog:')
print(' o____ ')
print('  |||| ')
```

```
Hello!
Here's a picture of a dog:
 o____
  ||||
```

- If you prefer, you can use three apostrophes `'''` instead of one, which allows you to print multiple lines of text with one `print` statement:

```
#!/bin/python3

print('Hello!')

print('''
Here's a picture of a dog:
 o____
  ||||
''')
```

```
Hello!

Here's a picture of a dog:
 o____
  ||||
```

Step 6 Challenge: about yourself

Write a Python program to tell others about yourself using text and ASCII art. You can create images of your hobbies, friends, or anything you like!

Remember that the code you write in Trinket is public. Don't share any personal information like your full name or address!

Here's an example:

```
My favourite animals are sheep

 o-###-
   | |   #

I live in Glasgow

    _|_
   |   |
   |#  |____
   |   |    |
   |  #|  # |
 _|___|_#__|_
```

Step 7 The year 2025

You can also do calculations and print numbers. Let's find out how old you'll be in the year 2025!

- To calculate how old you'll be in the year 2025, you need to subtract the year you were born from 2025.

  Add this code to your program:

```
print('''
Here's a picture of a dog:
 o____
  ||||
''')

print(2025 - 2006)
```

  Notice that you don't need to put quotes around numbers. (You'll need to change the number `2006` if you were born in a different year.)

- Click **Run**, and your program should print your age in the year 2025.

```
#!/bin/python3

print('Hi, how are you?')

print('Hello!')
Here's a picture of a dog:
 o____
  ||||
''')

print(2025 - 2006)
```

```
Hello!

Here's a picture of a dog:
 o____
  ||||
19
```

- You could improve your program by using `input()` to ask the user their age and store it in a **variable** called `born`.

```
Here's a picture of a dog:
 o____
  ||||
''')

born = input('What year were you born?')
print(2025 - born)
```

- Run your program and then enter the year you were born. Did you get another error message?

  That's because anything typed into your program is **text**, and it needs to be converted to a **number**.

  You can use `int()` to convert the text to an **integer**. An integer is a whole number.

```
print('''
Here's a picture of a dog:
 o____
  ||||
''')

born = input('What year were you born?')
born = int(born)
print(2025 - born)
```

```
 o____
  ||||

What year were you born? 2004
21
```

- You can also create another variable to store your calculation, and print that instead.

```
print('''
Here's a picture of a dog:
 o____
  ||||
''')

born = input('What year were you born?')
born = int(born)
age = 2025 - born
print(age)
```

```
 o____
  ||||

What year were you born? 2005
20
```

- Finally, you can make your program easier to understand by adding a helpful message.

```
born = input('What year were you born?')
born = int(born)
age = 2025 - born
print('In the year 2025 you\'ll be', age, 'years old!')
```

```
What year were you born? 2006
In the year 2025 you will be 19 years old!
```

Step 8 Challenge: your age in dog years

Write a program to ask the user their age, and then tell them their age in dog years! You can calculate a person's age in dog years by multiplying their age by 7.

```
What is your age? 9
If you were a dog, you'd be 63 !!

 o____
  ||||
```

In programming, the symbol for **multiplication** is the `*` character, which you can usually type by pressing `Shift + 8` on the keyboard.

Step 9 Challenge: calculating text

Did you know that you can also calculate text?!

What will the following program print to the screen? See if you can guess it correctly before running the program.

```
print('ha ' *4)
print('ba' + 'na' *2)
print('Hello' + '!' * 10)
```

Can you make up any words of your own? You could even make your own patterns!

```
print('Here is a scarf:')
print('~#' * 10)
print('#-' * 10)
print('Here is a wave:')
print('/\  ' * 10)
print('  \/' * 10)
```

```
Here is a scarf:
~#~#~#~#~#~#~#~#~#~#
#-#-#-#-#-#-#-#-#-#-
Here is a wave:
/\  /\  /\  /\  /\  /\  /\  /\  /\  /\
  \/  \/  \/  \/  \/  \/  \/  \/  \/  \/
```