Lesson 2

Blank Spaces and Pauses

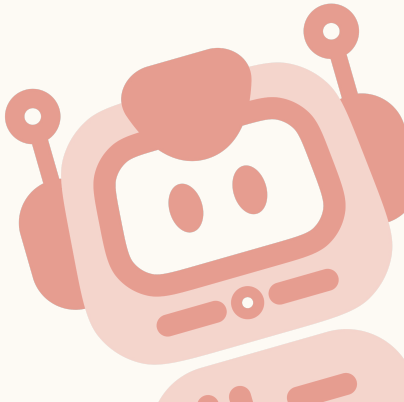
code for schools

Previously, on Code for Schools...

- What is the function you use to display text onto the screen?
- What would you type to display

  `Code for Schools`

  on the screen?

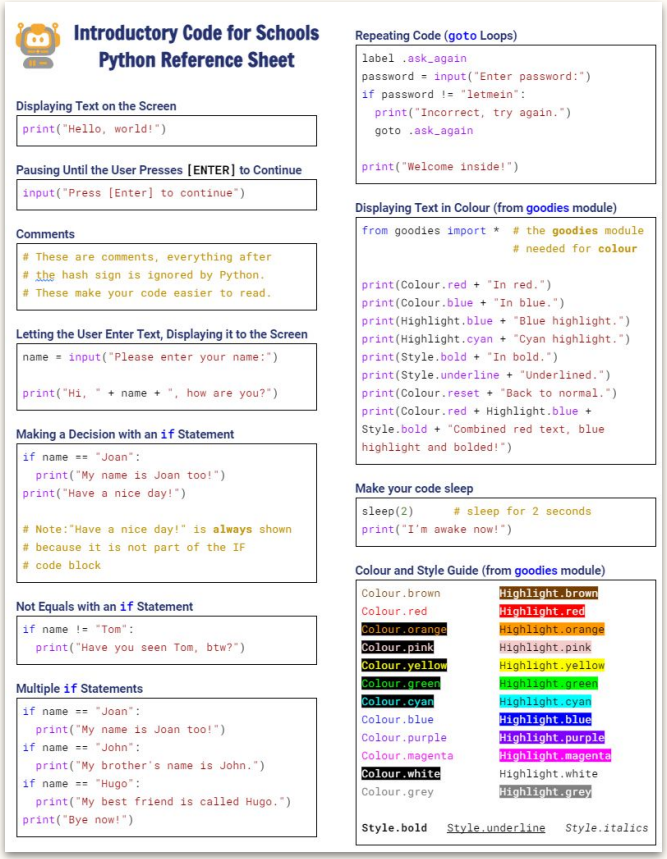


Learning objectives

By the end of this lesson:

- I can understand how spaces and lines are used in Python
- I can write Python programs with multiple lines of code
- I can use `input()` in my programs to pause, and wait for the **[ENTER]** key to be pressed before continuing

Python Reference Sheet



Introductory Code for Schools
Python Reference Sheet

Displaying Text on the Screen

```
print("Hello, world!")
```

Pausing Until the User Presses [ENTER] to Continue

```
input("Press [Enter] to continue")
```

Comments

```
# These are comments, everything after
# the hash sign is ignored by Python.
# These make your code easier to read.
```

Letting the User Enter Text, Displaying it to the Screen

```
name = input("Please enter your name:")

print("Hi, " + name + ", how are you?")
```

Making a Decision with an `if` Statement

```
if name == "Joan":
  print("My name is Joan too!")
print("Have a nice day!")

# Note:"Have a nice day!" is always shown
# because it is not part of the IF
# code block
```

Not Equals with an `if` Statement

```
if name != "Tom":
  print("Have you seen Tom, btw?")
```

Multiple `if` Statements

```
if name == "Joan":
  print("My name is Joan too!")
if name == "John":
  print("My brother's name is John.")
if name == "Hugo":
  print("My best friend is called Hugo.")
print("Bye now!")
```

Repeating Code (`goto` Loops)

```
label .ask_again
password = input("Enter password:")
if password != "letmein":
  print("Incorrect, try again.")
  goto .ask_again

print("Welcome inside!")
```

Displaying Text in Colour (from goodies module)

```
from goodies import *  # the goodies module
                       # needed for colour

print(Colour.red + "In red.")
print(Colour.blue + "In blue.")
print(Highlight.blue + "Blue highlight.")
print(Highlight.cyan + "Cyan highlight.")
print(Style.bold + "In bold.")
print(Style.underline + "Underlined.")
print(Colour.reset + "Back to normal.")
print(Colour.red + Highlight.blue +
Style.bold + "Combined red text, blue
highlight and bolded!")
```

Make your code sleep

```
sleep(2)      # sleep for 2 seconds
print("I'm awake now!")
```

Colour and Style Guide (from goodies module)

Colour.brown	Highlight.brown
Colour.red	Highlight.red
Colour.orange	Highlight.orange
Colour.pink	Highlight.pink
Colour.yellow	Highlight.yellow
Colour.green	Highlight.green
Colour.cyan	Highlight.cyan
Colour.blue	Highlight.blue
Colour.purple	Highlight.purple
Colour.magenta	Highlight.magenta
Colour.white	Highlight.white
Colour.grey	Highlight.grey

Style.bold Style.underline *Style.italics*

Python Reference Sheet

- Print it out, keep it handy and use it!
- Get it here

Demo 02.01: Would you like to see a magic trick?

Click here and run the program

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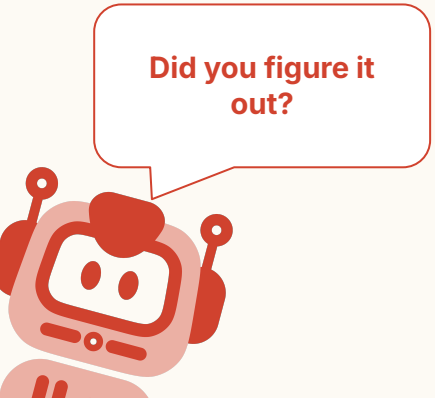
Click here and run the program



Take a look at the code...

```
print("I am going to do a magic trick")

input("[Press enter to continue]")

print("Secretly pick one of the cards below..")
print("K\u2664 J\u2667 Q\u2661 J\u2662")
print("\nYou got it? Don't tell anyone!")

input("[Press enter to continue]")

print("\nNow... Your card will disappear!")
print("Continue focusing on your card!")
input("[Press enter to continue]")

print("Can you now find your card below?")
print("J\u2664 K\u2667 Q\u2662 J\u2661 ")
input("[Press enter to continue]")

print("\nIt's magic.....!")
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Notice all the blank lines?

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How important do you think they are?

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If we took them all out...

Would the program still work??

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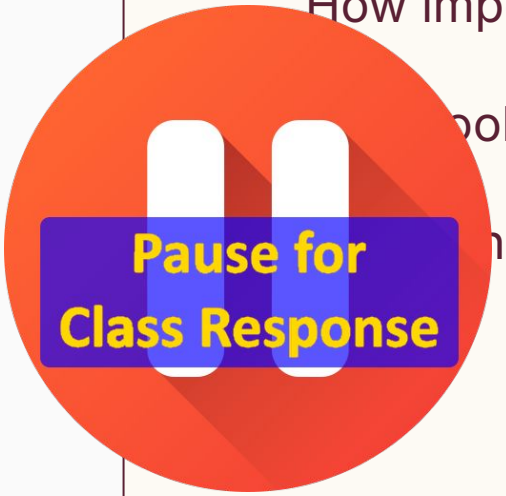

Notice all the blank lines?

How important do you think they are?

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e program still work??

Spaces in Python code

- In some cases, Python **ignores** spaces and blank lines in your code
- In code, we refer to spaces and blank lines as **whitespace**
- Why would you add **whitespace** to your code?

Spaces in Python code

- Why would you add **whitespace** to your code?
  - It makes it **easier for you to read** your own code
  - You **may forget** what your own program does over time, and good layout helps you figure it out again
  - It also helps **other people read** your code. Companies such as Amazon, Google and Microsoft have rules about how their code should look
  - **Your teacher** will appreciate you making your code readable!

These programs are the same

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```
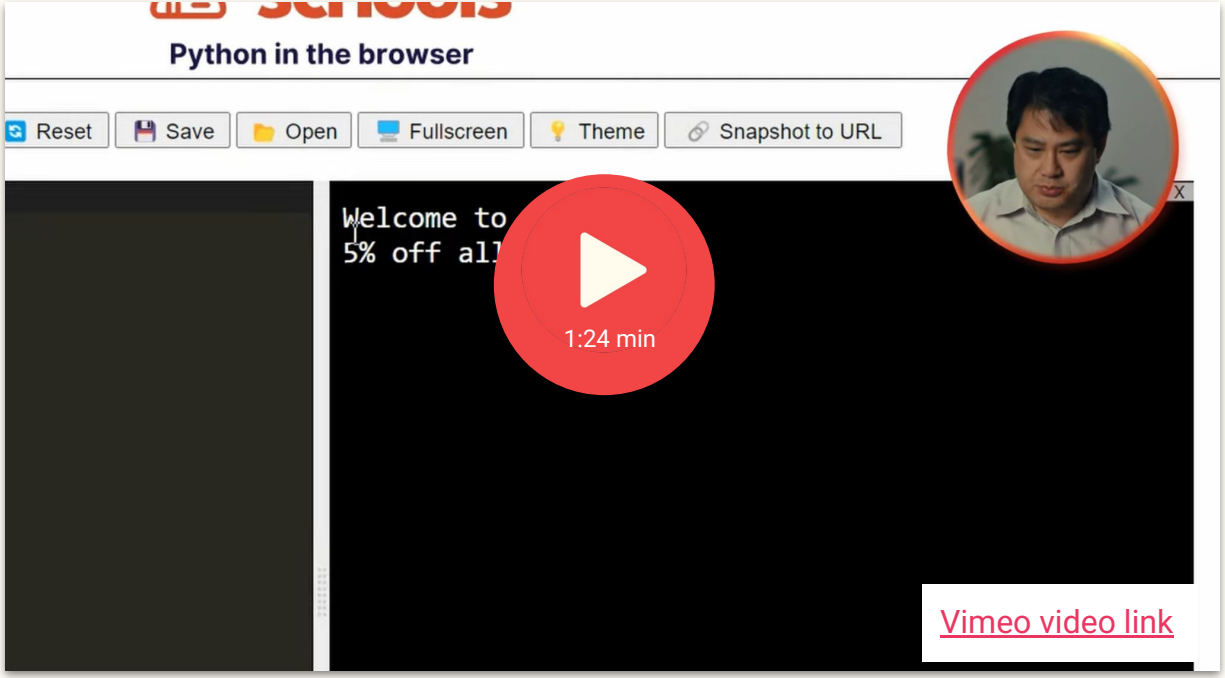

When Spaces in Python Code Matter!



Link to Accompanying Slides
(PDF, powerpoint)

Activity: Error messages

- Believe it or not, your programs usually won't work when you write them!
  - It doesn't matter how experienced you are, this always happens
- A **bug** is something that goes wrong in your program
- Sometimes, when something goes wrong, Python can detect it and tell you about it through **error messages**
- In this exercise, we are going to get used to reading Python **error messages** by deliberately making mistakes!

Activity: Buggy Code!

Copy this code line into the editor	What error message did you see displayed on the screen when you ran it? (Some of the code may actually work!)	What did you type in to fix the code? (If the code works, you won't need to type anything)
`prit("Hello, world!")`	`NameError: name 'prit' is not defined`	`print("Hello, world!")`

Complete the coding task: [02.01 - Buggy Code!]

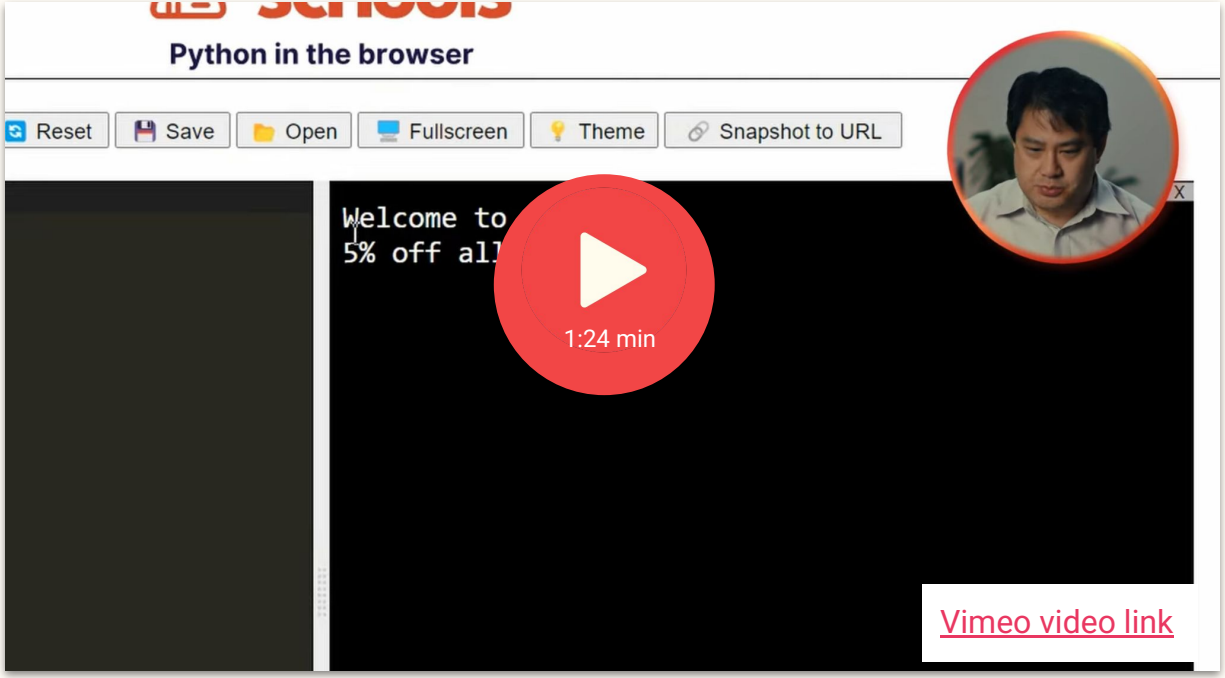
You will also need to make a copy of [this] worksheet ([Microsoft Version])

Worksheet Activity

Complete Question 1 & 2

(PDF, MS Word)

Displaying Blank Lines



Link to Accompanying Slides
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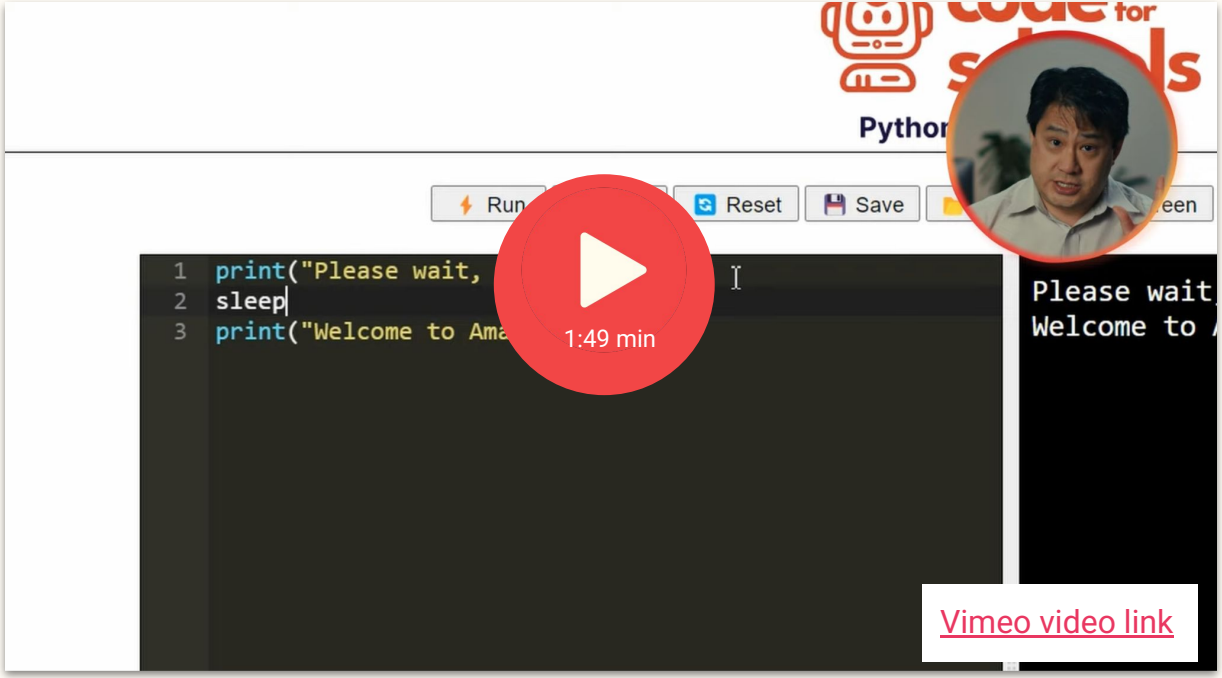
Pausing Between Lines of Code



Link to Accompanying Slides
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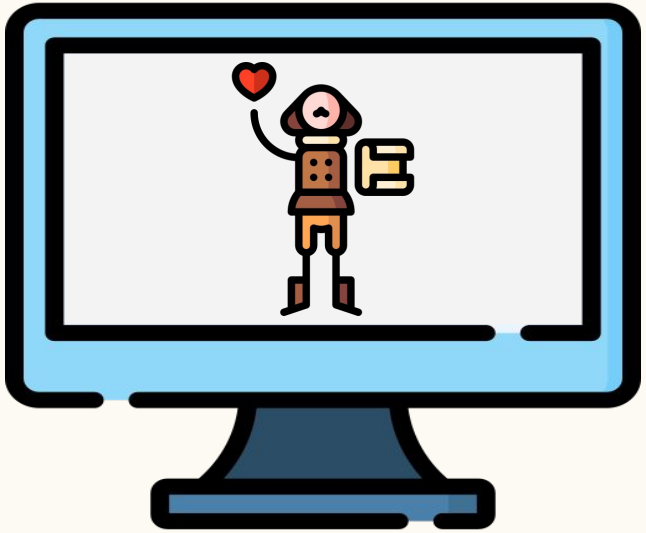
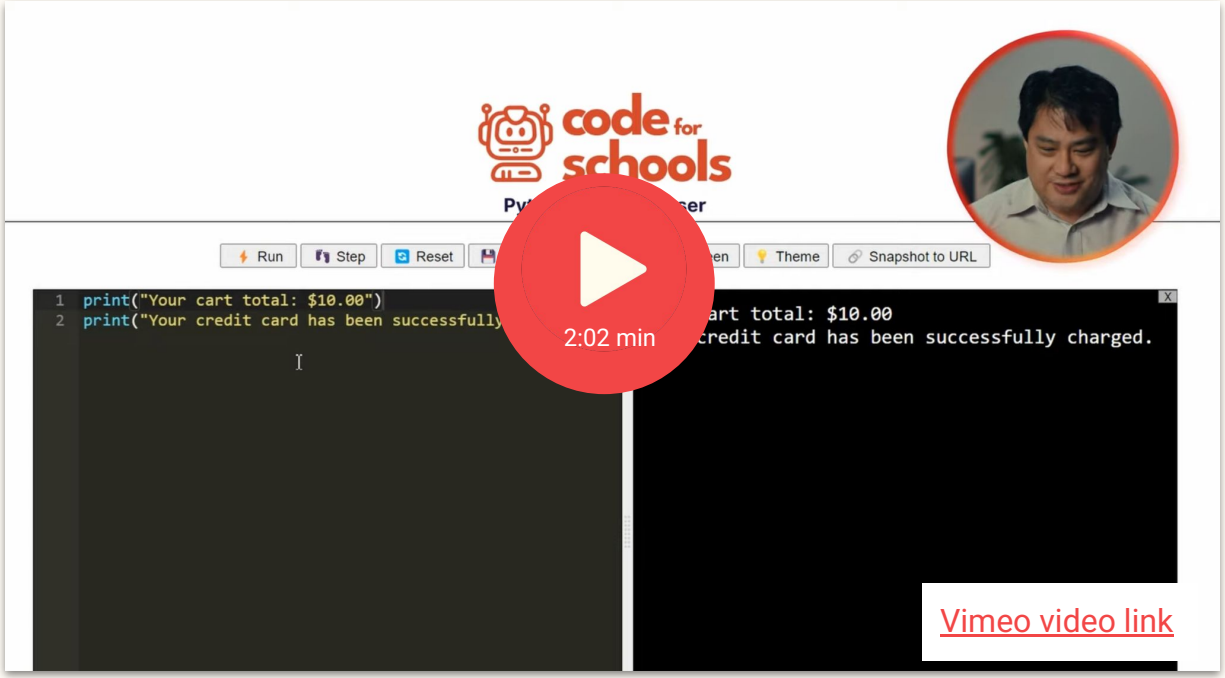
Coding Activity: A Dramatic Poem Display



Activity 02.02

A Dramatic Poem Display

Using input() to Pause Until Enter is Pressed



Vimeo video link

Link to Accompanying Slides

(PDF, powerpoint)

Worksheet Activity

Complete Question 3 & 4

(PDF, MS Word)

Coding Activity: Shopping Cart Confirmation

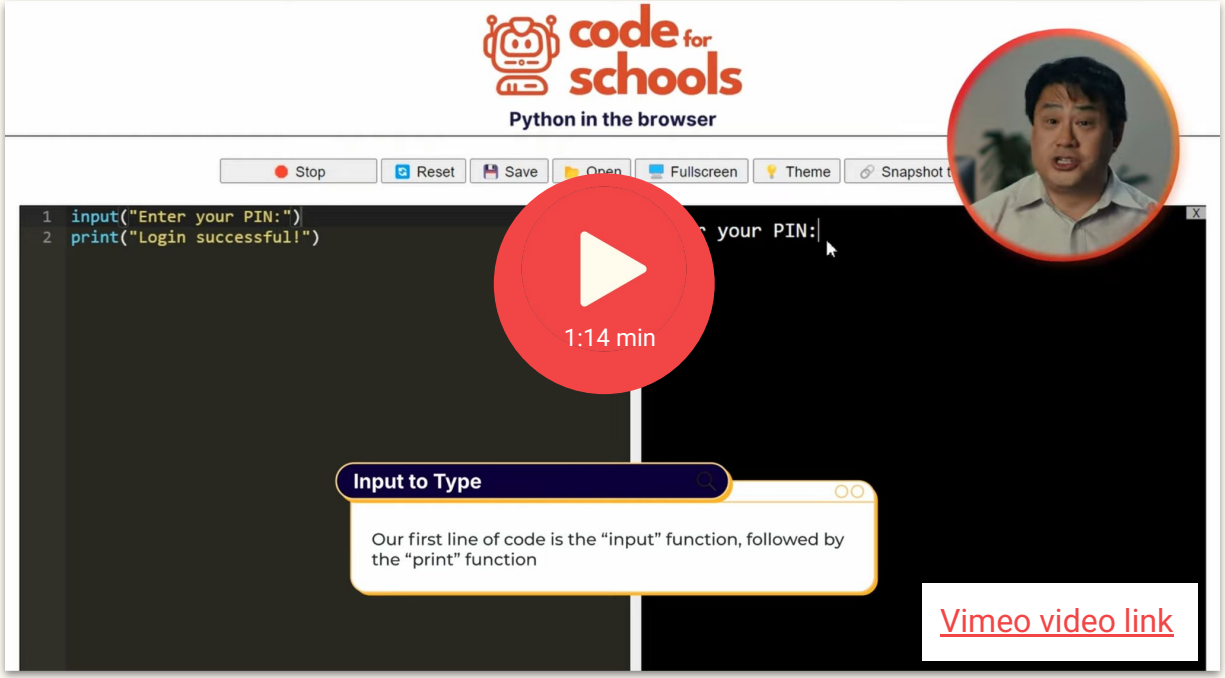
Complete Question 5

(PDF, MS Word)

Activity 02.01

Shopping Cart Confirmation

Using input() Let Users Type in Information

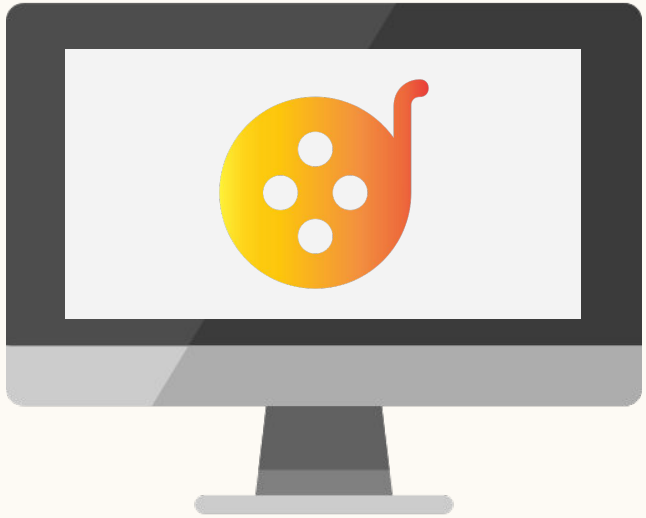


Link to Accompanying Slides
(PDF, powerpoint)

Coding Activity: TokTik Login

Complete Question 6

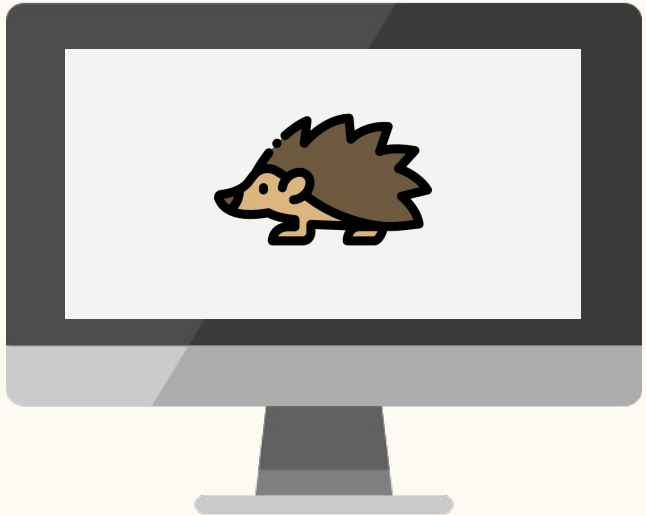
(PDF, MS Word)



Activity 02.02

TokTik Login

Coding Activity: Fuzzy Hedgehog



[Complete Question 7](#)
(PDF, MS Word)

Activity 02.03
[Fuzzy Hedgehog](#)

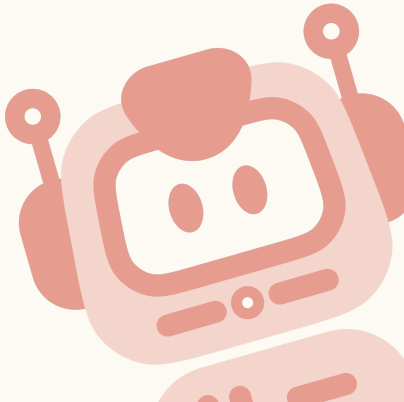
Coding Activity: Ribbit! (Extension)

Activity 02.04

Ribbit!

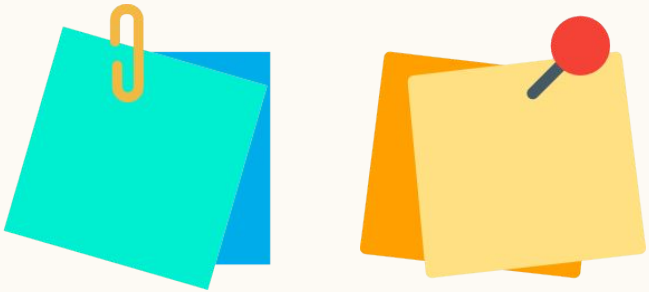
Review of Learning Objectives

- I can understand how spaces and lines are used in Python
- I can write Python programs with multiple lines of code
- I can use `input()` in my programs to pause, and wait for the **[ENTER]** key to be pressed before continuing



Reflection: Exit pass

- What is the name of a **function** that you've learnt about or seen on a worksheet?
- Write it on a sticky note and stick it on the board before you leave the classroom



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