Lesson 5

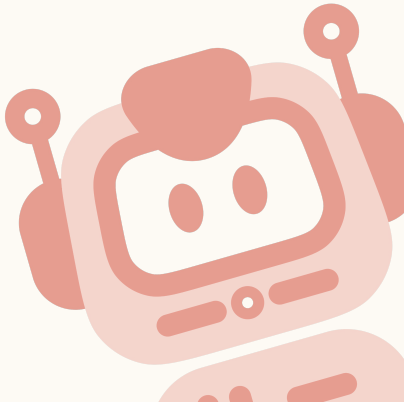
Programs That Make Decisions

code for schools

Previously, on Code For Schools...

- What are the variables in the following code?

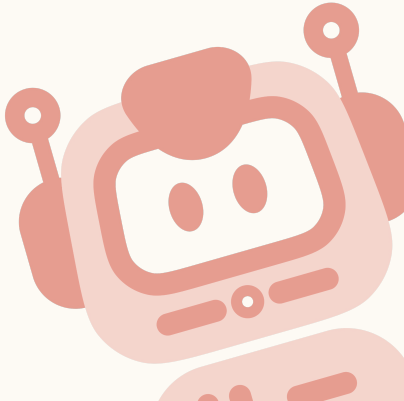
```
a_number = input("Enter a value for y:")
height = input("How tall are you?")
```



Previously, on Code For Schools...

- If the user types in **Alex** when asked for their name, what will be displayed on the screen after the following code is run:

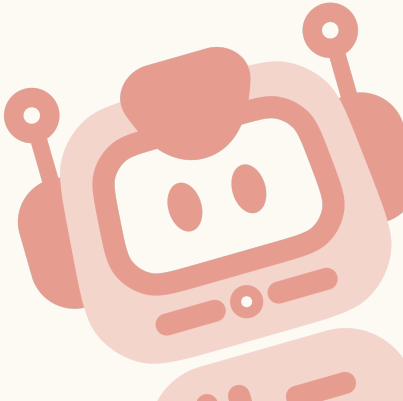
```
user = input("Enter your username:")
print(user + "'s bonus points: 1000")
```



Previously, on Code For Schools...

- If the user types in **Jane** when asked for their name, and **21** when asked for their age, what will be displayed on the screen after the following code is run:

```
name = input("Enter your first name:")
age = input("Enter your age:")
print("Hello, " + name + ", " + age)
```

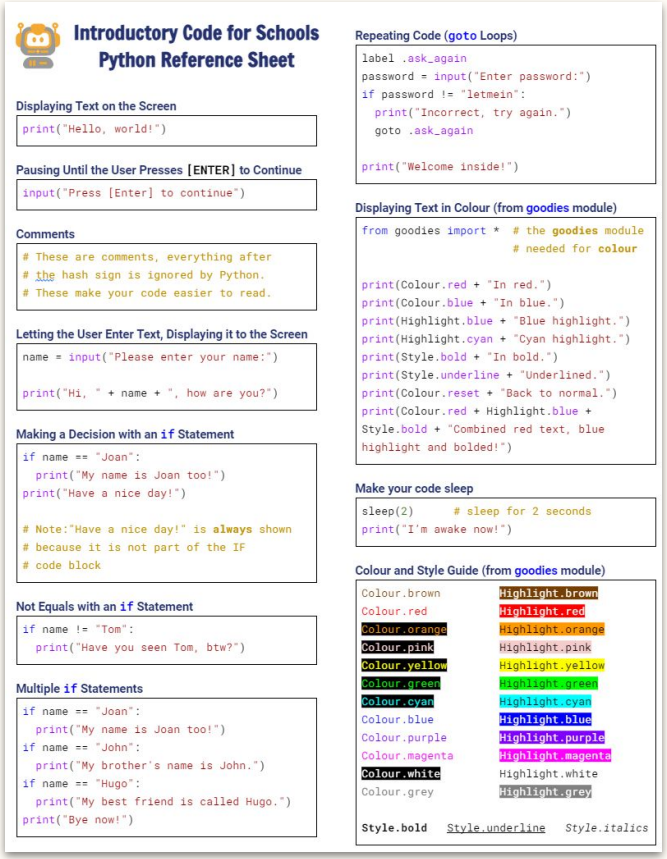


Learning objectives

By the end of this lesson:

- I can understand **control flow** and how I can use it in my programs to make decisions
- I can draw a flowchart to represent program flow
- I can understand `boolean` expressions and how they are either `True` or `False`
- I can use `if` statements to make choices in a program so that it can behave differently depending on what a user types

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

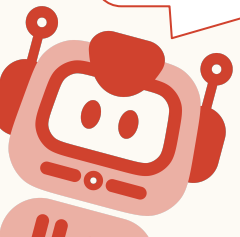
Style.bold Style.underline *Style.italics*

Python Reference Sheet

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

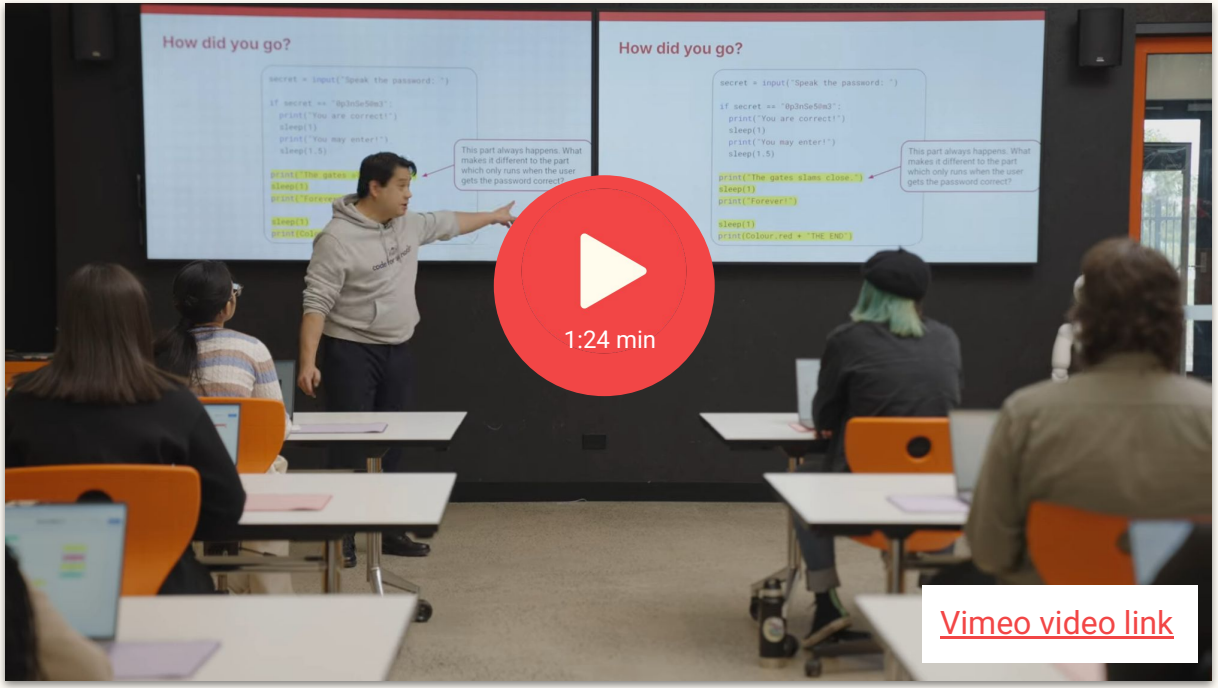
Demo 05.01 - Can you pass through the Gates of Doom?

Look through the code and see if you can figure out what's going on



[Click here and see if you can "guess" the password]

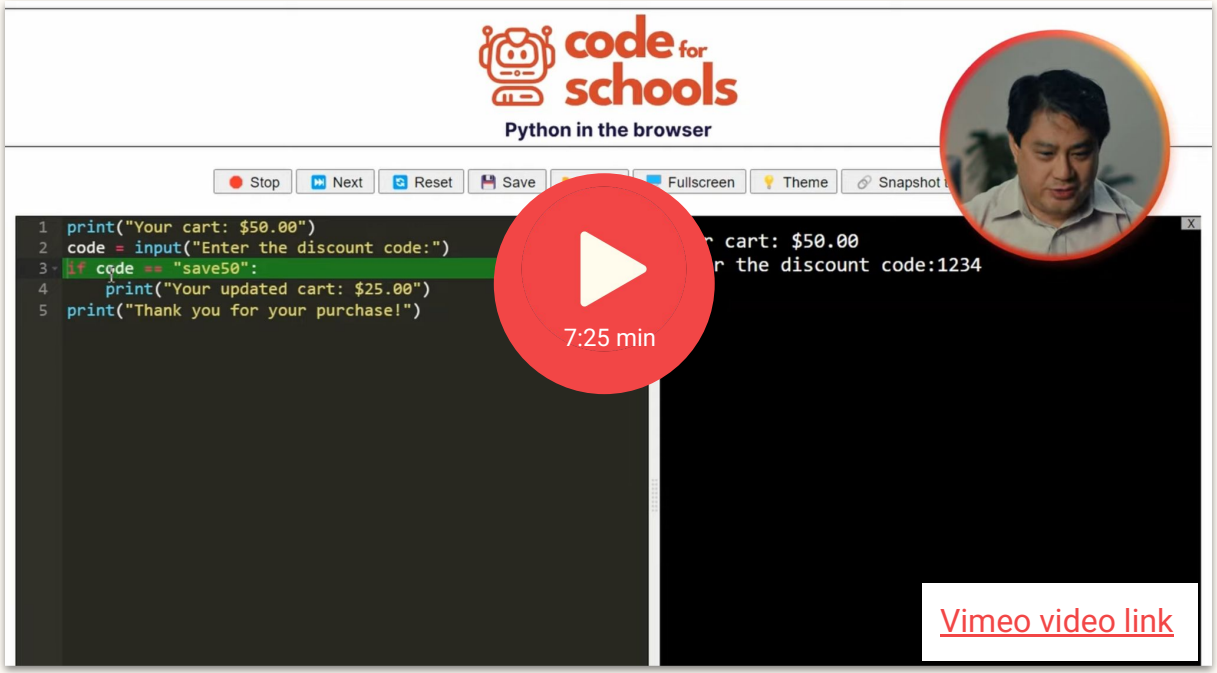
IF Statements and Flowcharts



Vimeo video link

Link to Accompanying Slides
(PDF, powerpoint)

IF Statements and Flowcharts



Link to Accompanying Slides
(PDF, powerpoint)

Coding Activity: Colours in the Flag Quiz

[Complete Question 1](#)
([PDF](#), [MS Word](#))

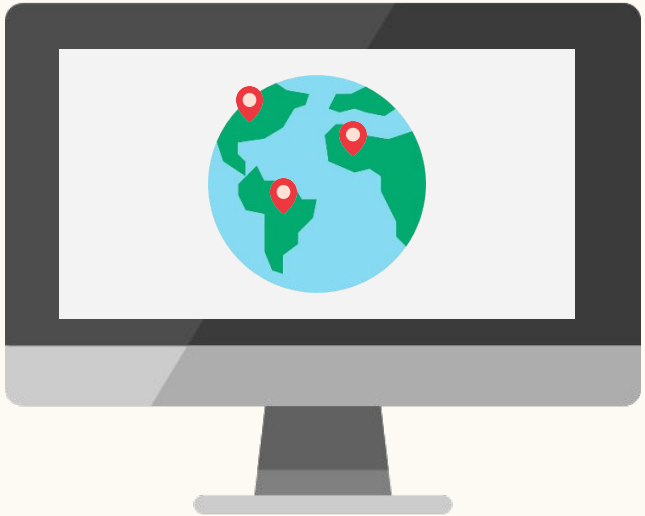
Activity 05.01
[Colours in the Flag Quiz](#)

Coding Activity: World War Quiz

[Complete Question 2](#)
([PDF](#), [MS Word](#))

Activity 05.02
[World War Quiz](#)

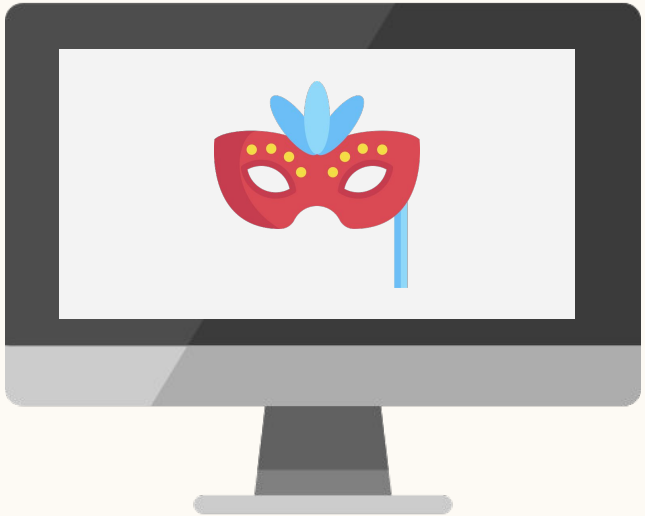
Coding Activity: Your Own Quiz



Activity 05.03

Your Own Quiz

Coding Activity: Playing Dress Up! (Extension)



Activity 05.04

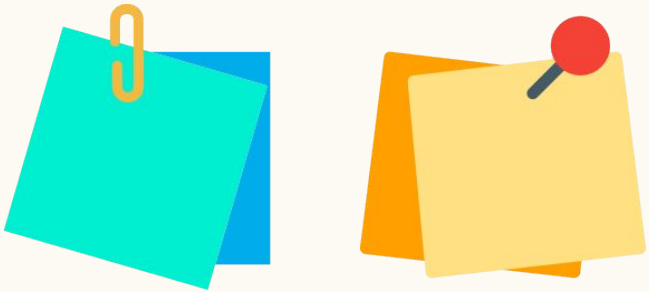
Playing Dress Up!

Review of Learning Objectives

- I can understand **control flow** and how I can use it in my programs to make decisions
- I can draw a flowchart to represent program flow
- I can understand **`boolean`** expressions and how they are either `True` or `False`
- I can use `if` statements to make choices in a program so that it can behave differently depending on what a user types

Reflection: Exit pass

- What is one new thing you learnt today?
- Write it on a sticky note and stick it on the board before you leave the classroom



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