Python and Pytch

What is Python

- One of the most widely used programming languages in the world (Google, Facebook, Netflix, Instagram, NASA, …)
- Good for all sorts of tasks (automating computing tasks, data analysis, AI/Machine Learning, etc.)

What is Pytch

- Python + Animation and sound
- Designed to make it easy to come to from Scratch
- Two ways of editing the Python code: all as one scroll of text or **script by script**. These lessons use script by script.

Getting started

We are going to work with **Pytch** — this is a web site that lets us write a Python program that makes animations and games. If you have seen Scratch, it uses some of the same ideas but adds Python.

You write your program here

Press this button to run it, Pytch calls it "green flag"

This is the Stage, where the running project appears

Here you can see messages from Pytch (e.g. if things go wrong)
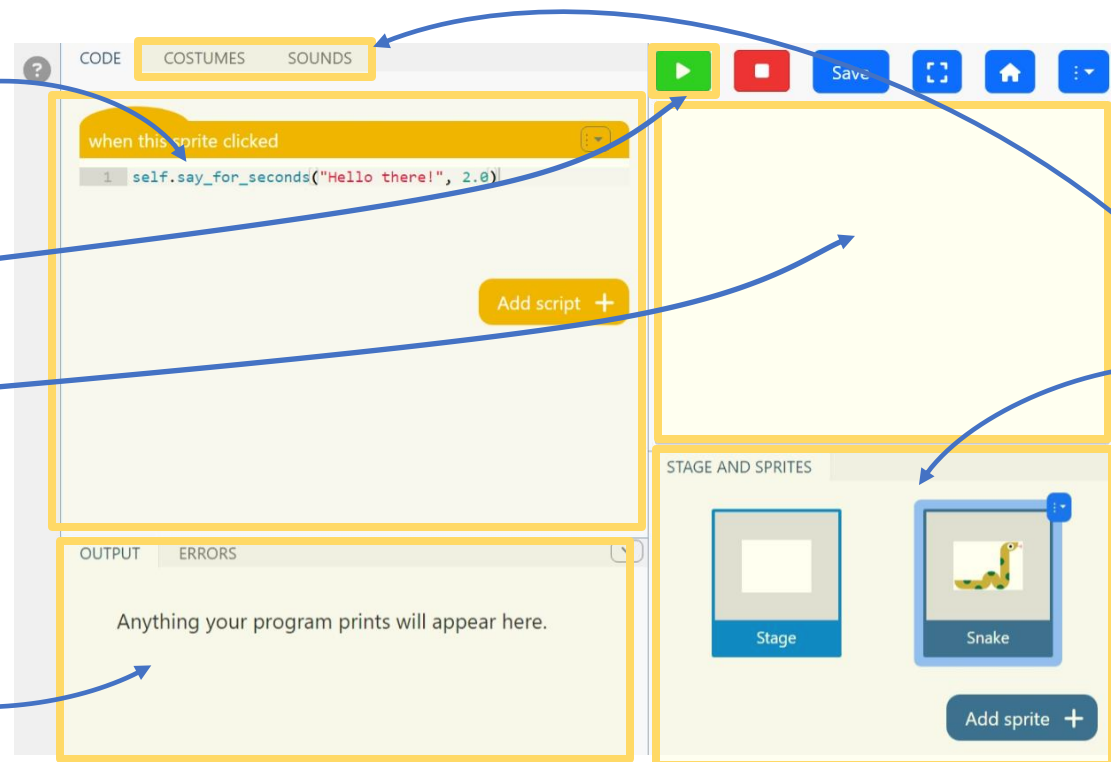
Here you can see:

- Stage and sprites of your Pytch program

- Their costumes (how they look) and sounds

CODE   COSTUMES   SOUNDS

when this sprite clicked

1   self.say_for_seconds("Hello there!", 2.0)

Add script +

OUTPUT   ERRORS

Anything your program prints will appear here.

STAGE AND SPRITES

Stage

Snake

Add sprite +

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Pytch Sprites

- **What are Pytch Sprites?**
  - Like in Scratch, Pytch Sprites are images that you can animate by writing scripts.
  - They will appear on the Pytch Stage when you press the green flag button.

- **Example** — to create a snake Sprite in Pytch you:
  - Add a new sprite
  - Go to the *Costumes* tab and add an image
  - Press the green flag button to see the new Sprite on your Stage
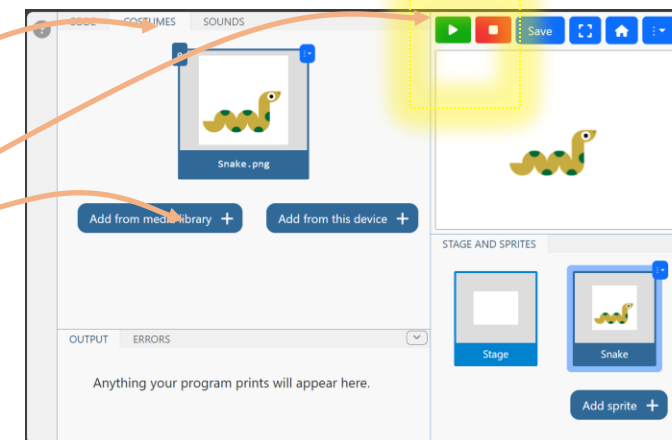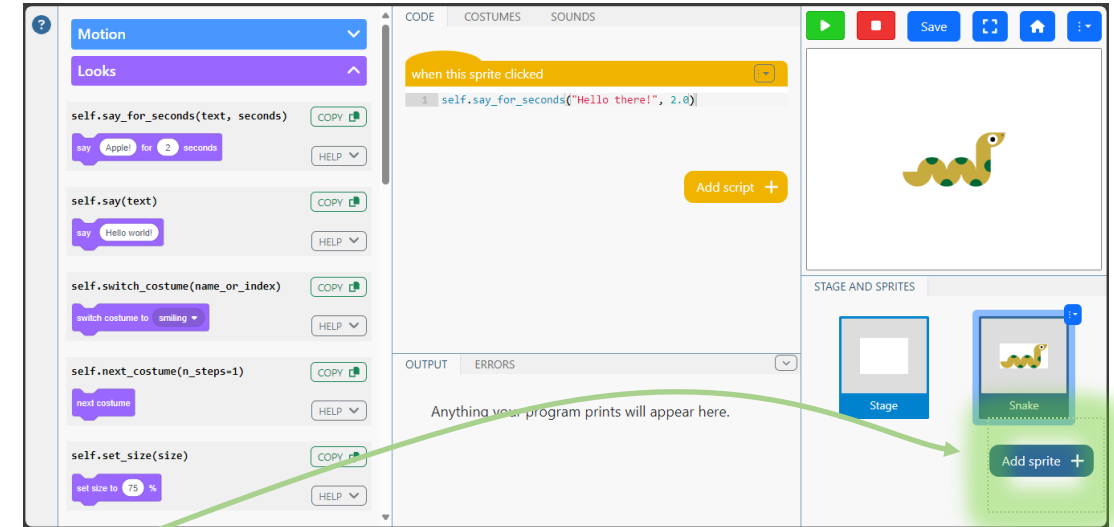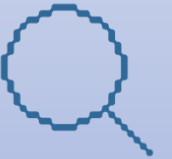
Now work in pairs – Worksheet 1

- What do you think this code will do?

- Write your answers on worksheet 1

Think about **what** will happen, and **when** it will happen…

when this sprite clicked

```
self.say_for_seconds("Hello there!", 2.0)
self.say_for_seconds("OK bye!", 2.0)
```

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Try it out

- Follow this link to get a Pytch project that you can run

- Run the program (press the green "play" button)

- Does it do *exactly* what you thought it would do?

- If not:
  - Look at the differences
  - Correct your answer on worksheet 1

https://pytch.org/app/lesson/sbys/1

Questions to do in pairs – Worksheet 2

1. How does varying the numbers that are in the program affect what happens?

2. How can you change the words the Snake says?

3. What happens if we change the order of the two `self.say_for_seconds` lines?

4. What happens if we write `Self` (with a capital "S") instead of `self` (with a small "s")? Does it matter? Why do you think this is?

5. Why are there quote marks around some of the words in the program? Does it still work if you remove them*? Does it matter if they are double-quotes versus single-quotes?*

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Tasks – Worksheet 3

Work in pairs on these two activities:

1. Change the Python code so that the project will say the day of the week and then greet you both by name.

2. Another command you can use in Pytch is: `self.set_size(0.5)`

Judging by the name of the command what do you think it does?

Try it out by adding it to your project. Try to change the Snake's appearance as the project runs.

Want to save your program?
You can download it as a zipfile or export it to your Google Drive.
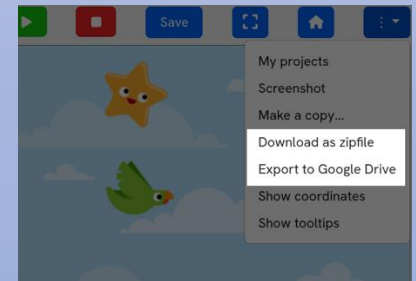
Extension

Finished early? Challenge: can you change the snake so that it looks like something totally different?

💡   - You will need to make **two** changes, both on the costumes tab

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Recap

Today we have:

1. Learned about Python and Pytch

2. Learned how to make a Pytch project that shows a talking and moving snake

3. Learned how to modify a Pytch project to make it our own

In the coming weeks we will learn more about Python with Pytch and create our own projects.