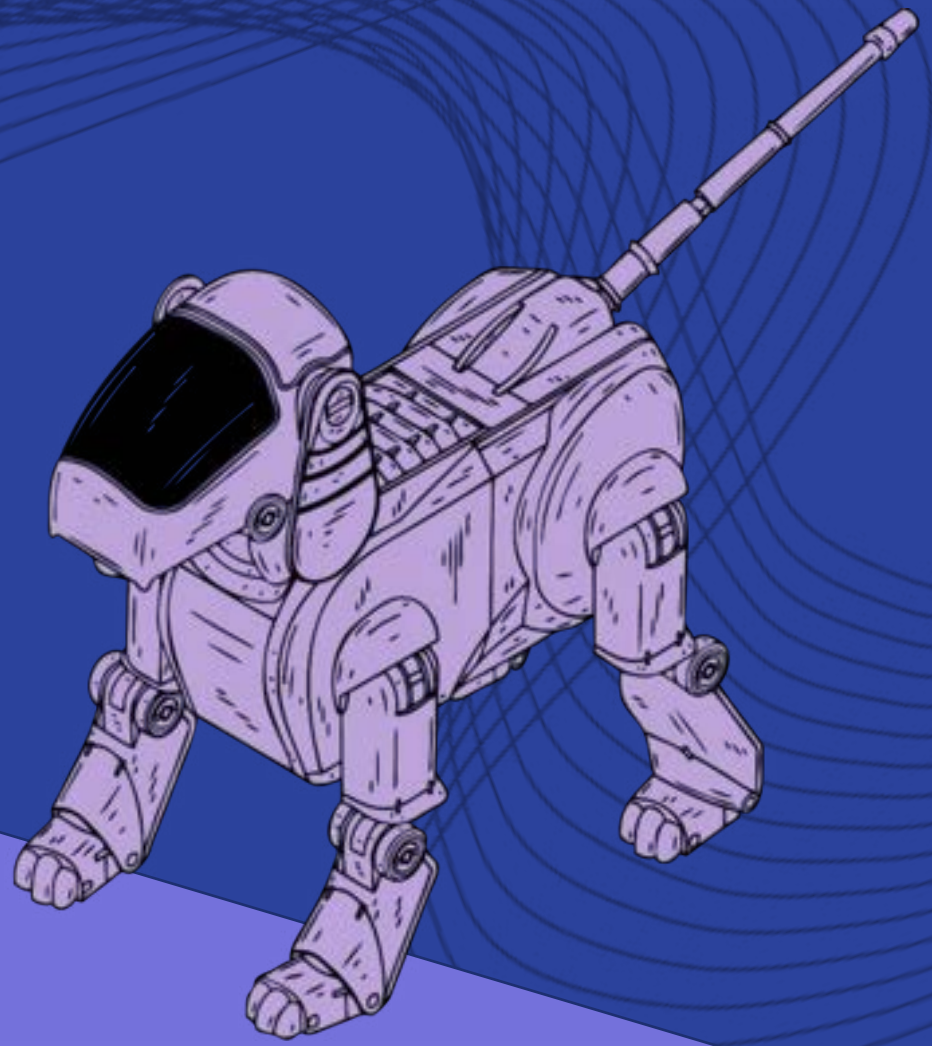
ChatBot

Level 2 – Scratch

At Home



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Introduction

What is Artificial Intelligence?

Less than a decade after breaking the Nazi encryption machine Enigma, Alan Turing, often renowned as the father of modern computer science, changed history a second time with a simple question:

‘Can machines think?’

Turing’s paper on ‘Computing Machinery and Intelligence’ established the fundamental goal and vision of AI

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Task

Scratch-Bot

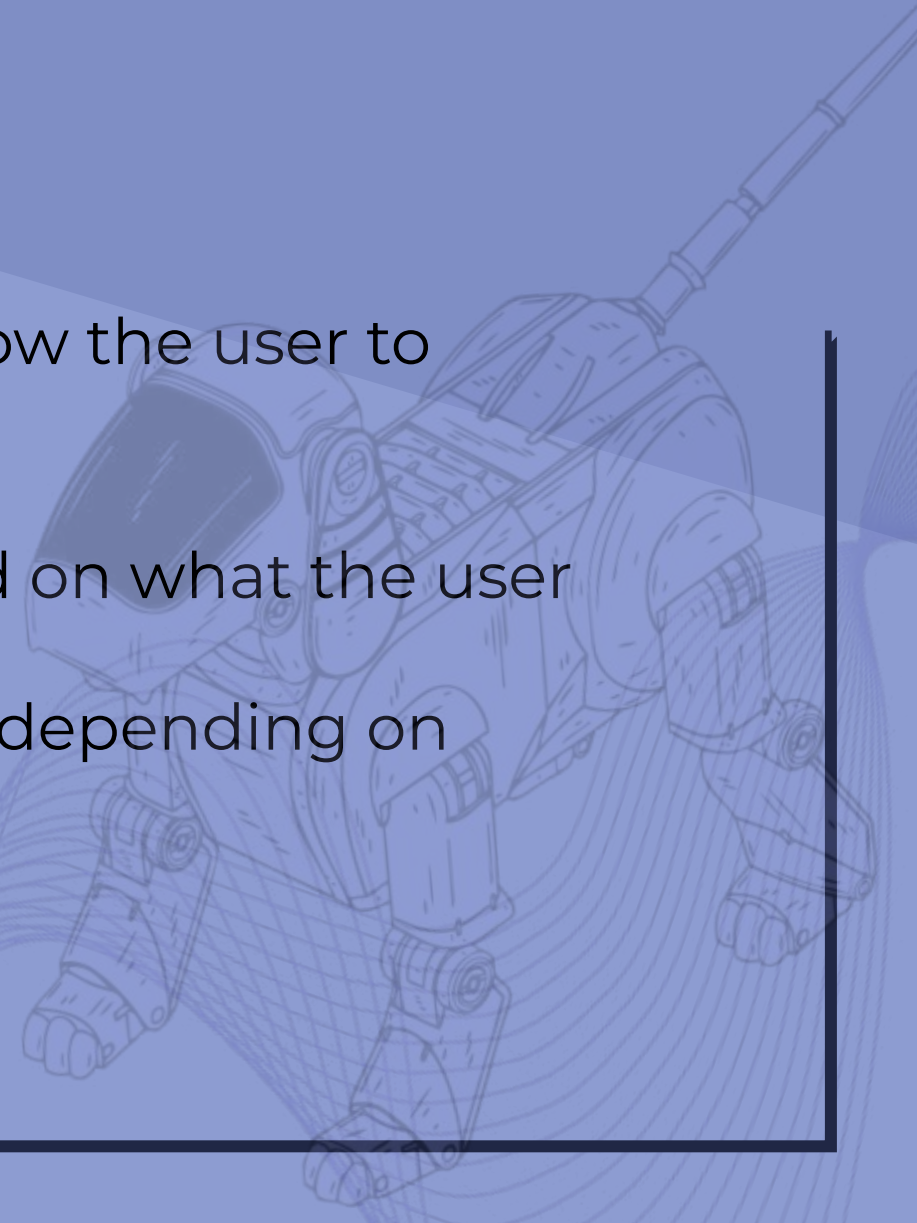
It is the goal of Artificial Intelligence to replicate or simulate human intelligence in machines.

- You have been tasked with designing an intelligent program that can have a conversation with the user
- These types of programs are often called **ChatBots**

Process

Scratch-Bot

- Have your chatbot ask questions and allow the user to answer
- Store the user's answers in variables
- Have your chatbot make decisions based on what the user enters into the program
- Change the appearance of your chatbot depending on their mood



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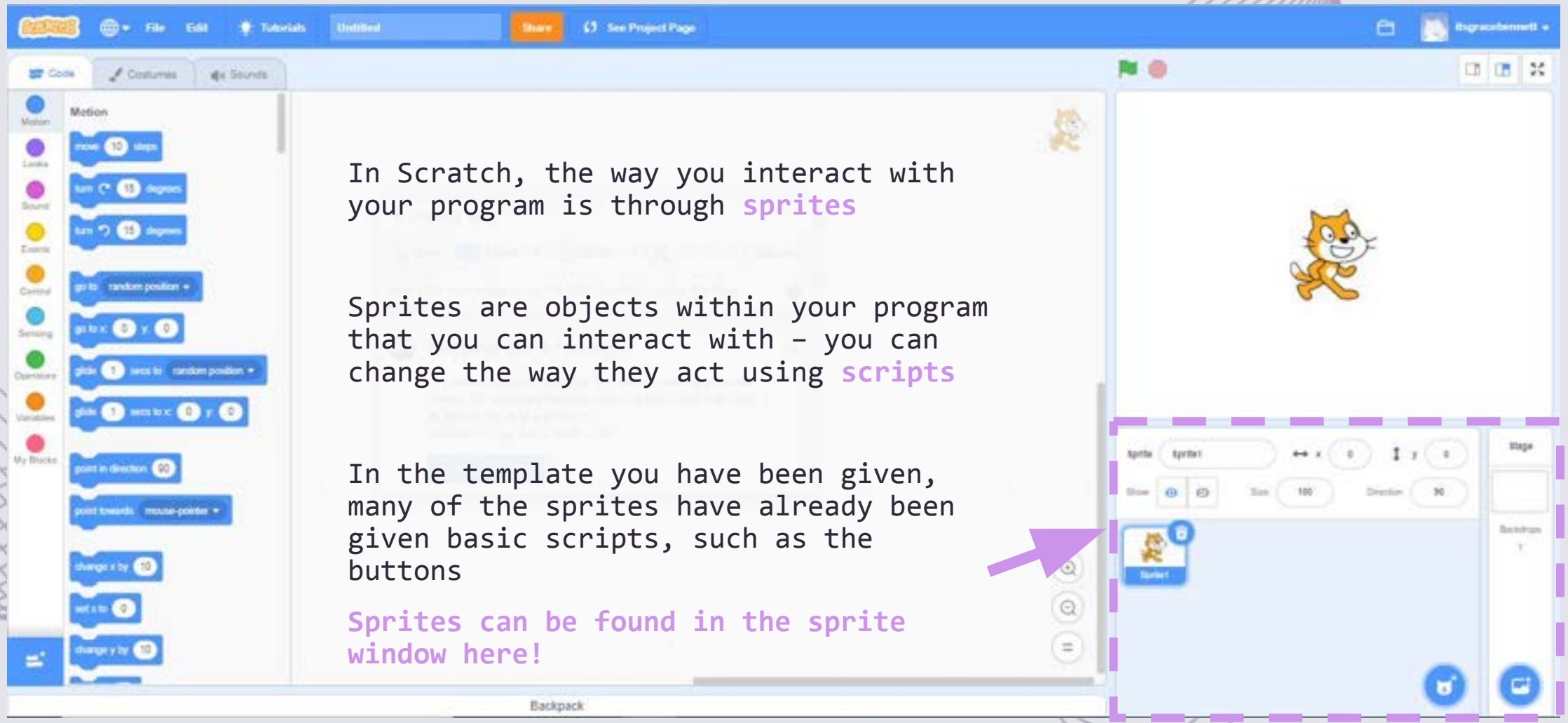
How does SCRATCH work?



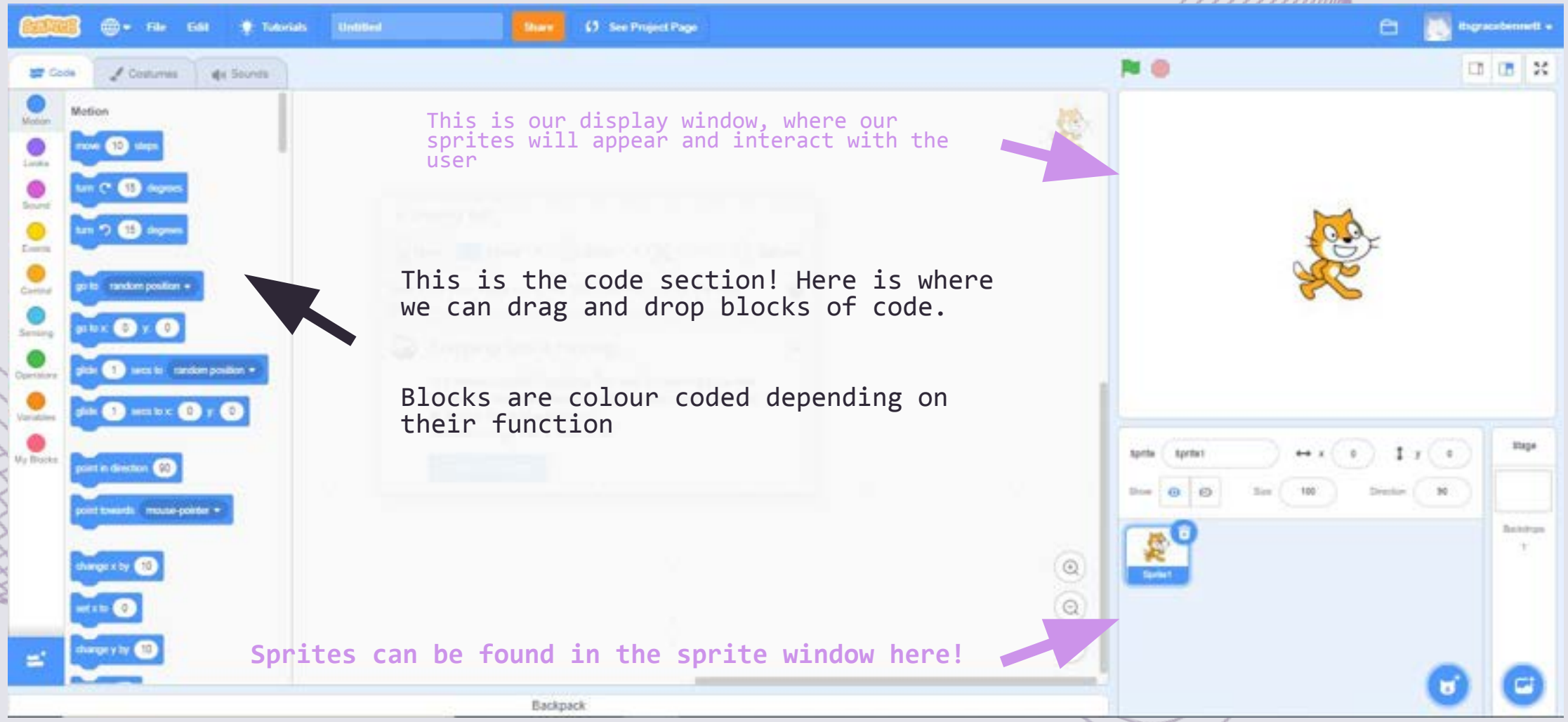
In Scratch, the way you interact with your program is through sprites

Sprites are objects within your program that you can interact with – you can change the way they act using scripts

In the template you have been given, many of the sprites have already been given basic scripts, such as the buttons

Sprites can be found in the sprite window here!

How does SCRATCH work?



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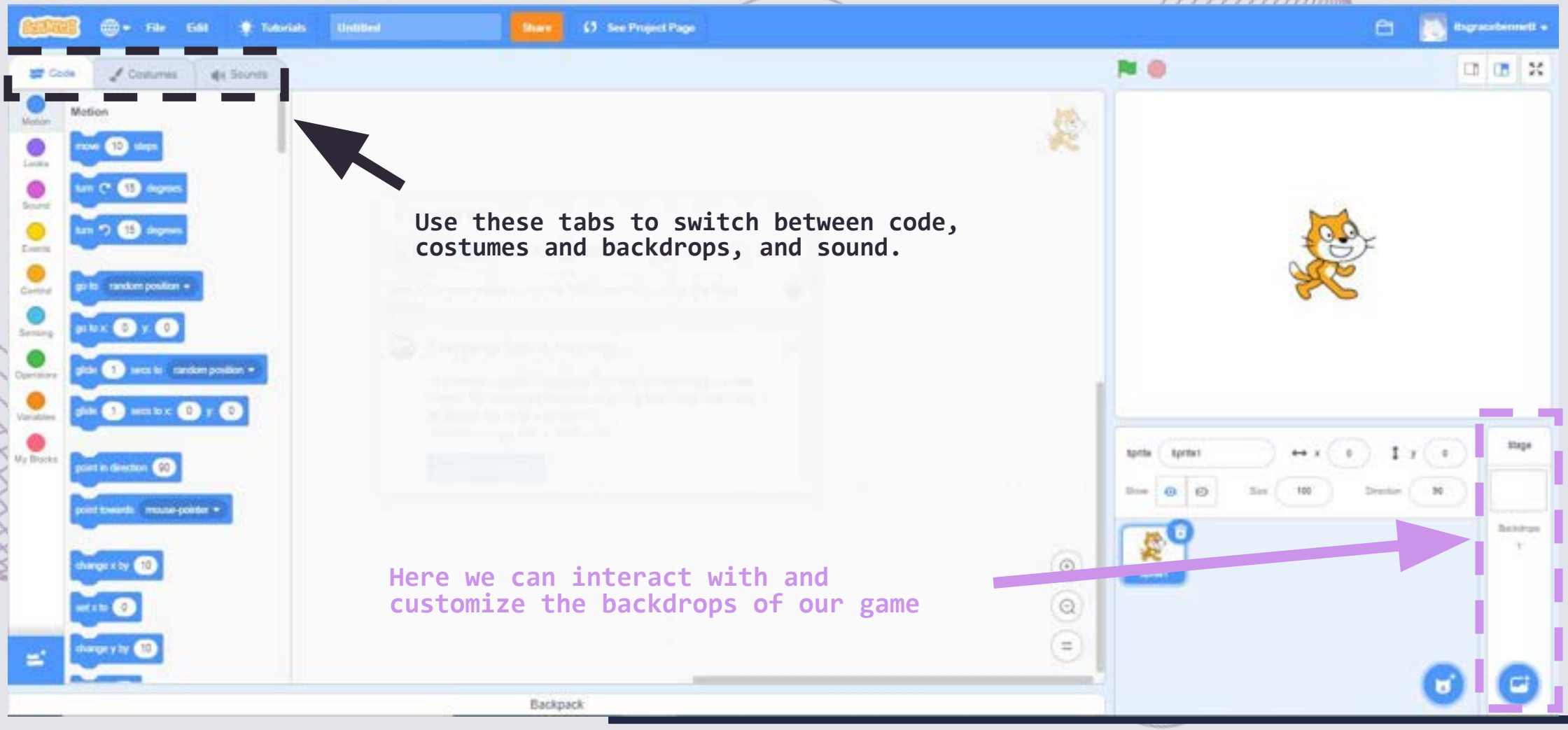
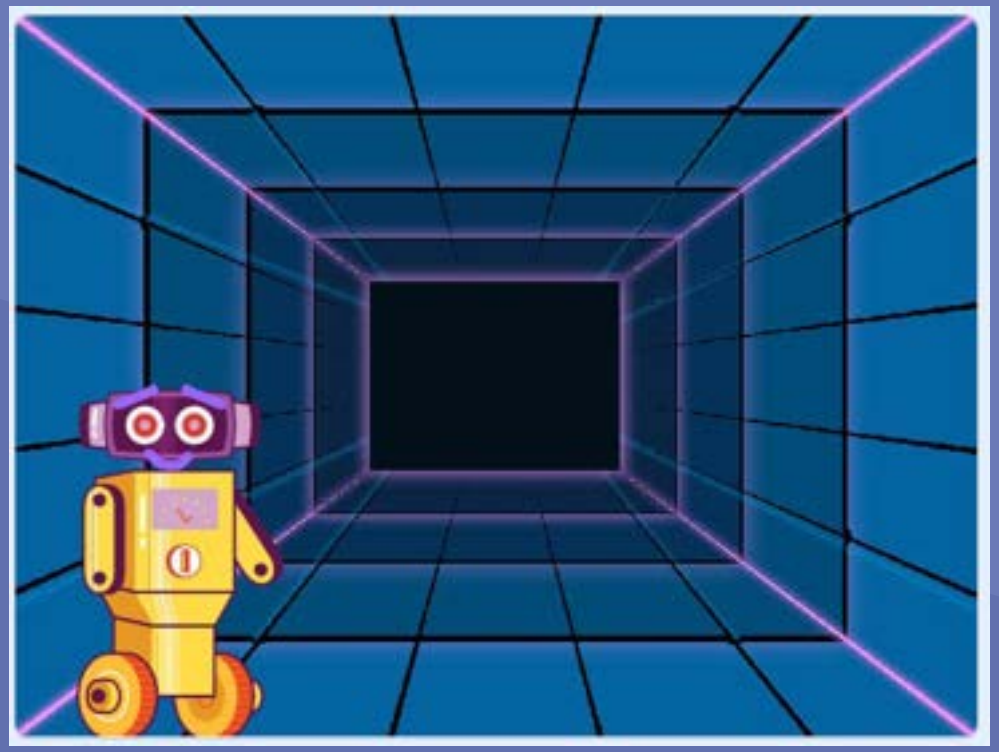
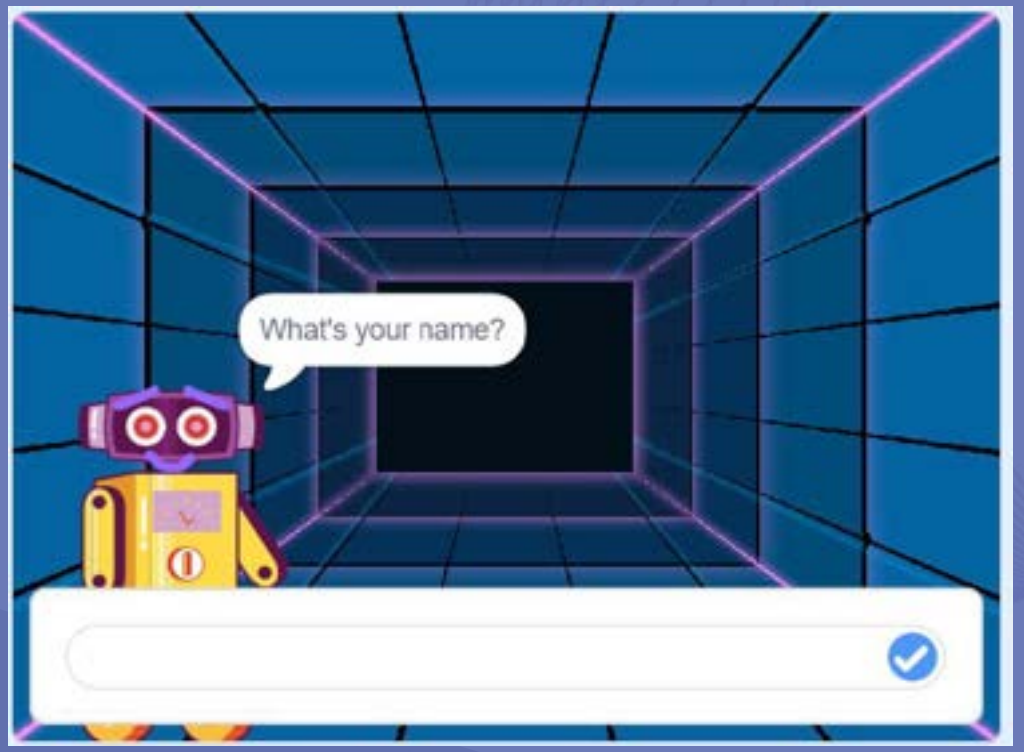
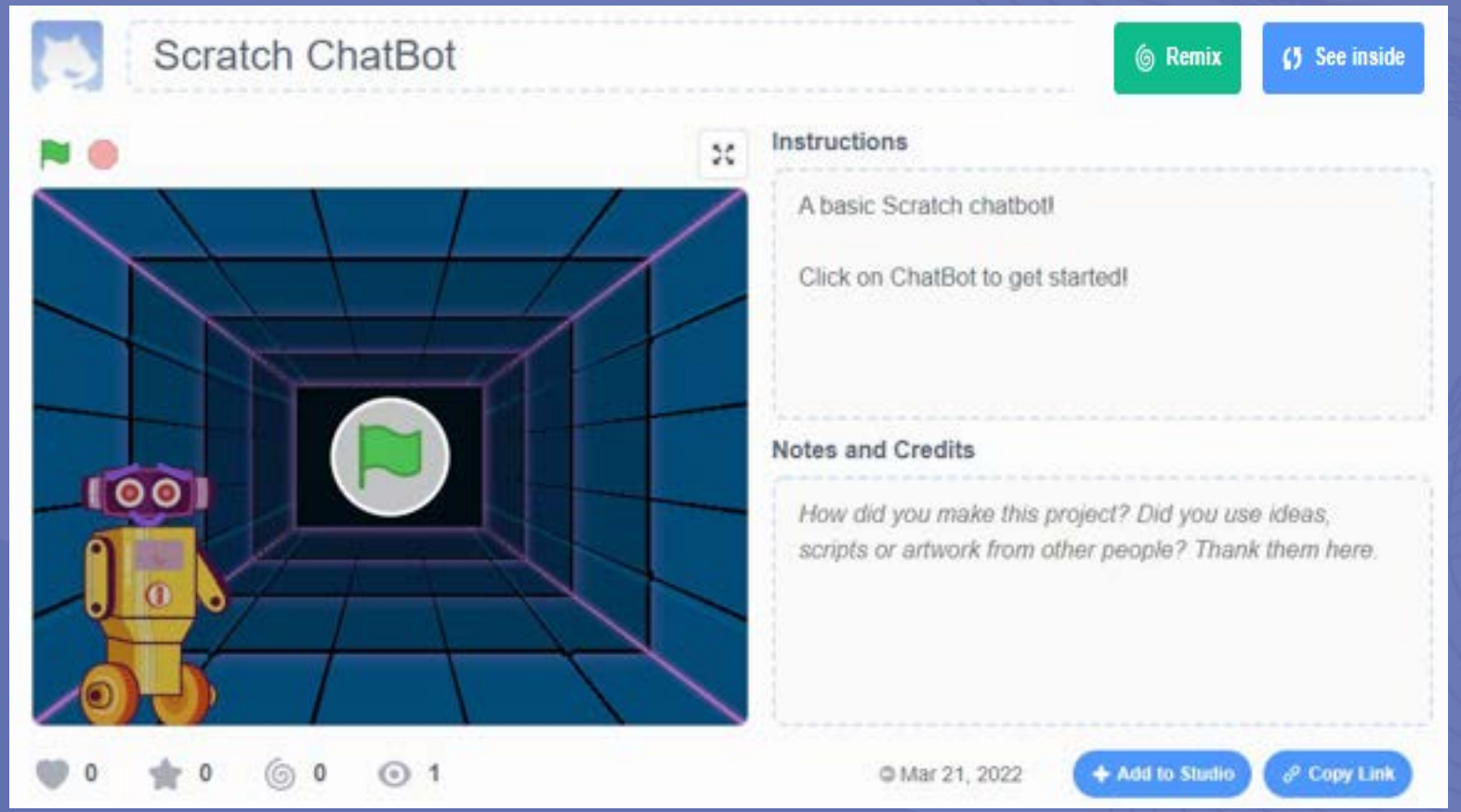


Example

What our ChatBot will look like...







Once you have logged into Scratch...

Click here to access the template to our project!

*Click **Remix** to get started with your project*

By the end of this resource, your project should look like this! (Use this if you get stuck)

Step 1

Having the Chatbot get user input

Drag this block into your program – we want to run our code when the user clicks the chatbot.

To get information from the user, use an ask block. We ask a question and the user's answer is temporarily stored in the 'answer' variable.

However, the user's name is something we might want to use later, so set the name variable equal to answer.

Step 2

Having the Chatbot respond

Use ‘say’ blocks to have your ChatBot talk to the user!

This is your ChatBot so get creative and experiment with different things the robot might say!

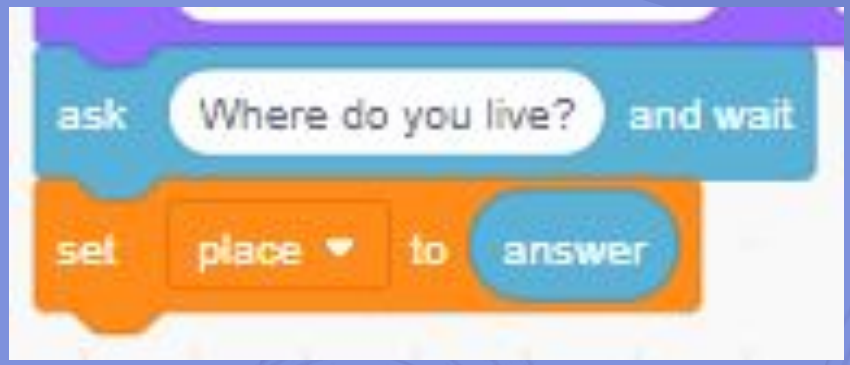
Note that you can use ‘join’ blocks to print out both text and variables simultaneously.

Step 3

Learning more information about the user

You can repeat this ask and answer process as many times as you like!

If you want to make your own variables, go to the ‘Variables’ window on the left hand side.



Some examples of what your Chatbot might ask:

- How old are you?
- How tall are you?
- What’s your favourite colour?

Example

This is what your code might look like so far...

Step 4

Have your Chatbot make decisions

To make decisions, we can use IF blocks to run different code depending on what the user enters. Add this code directly under the code we have already done.

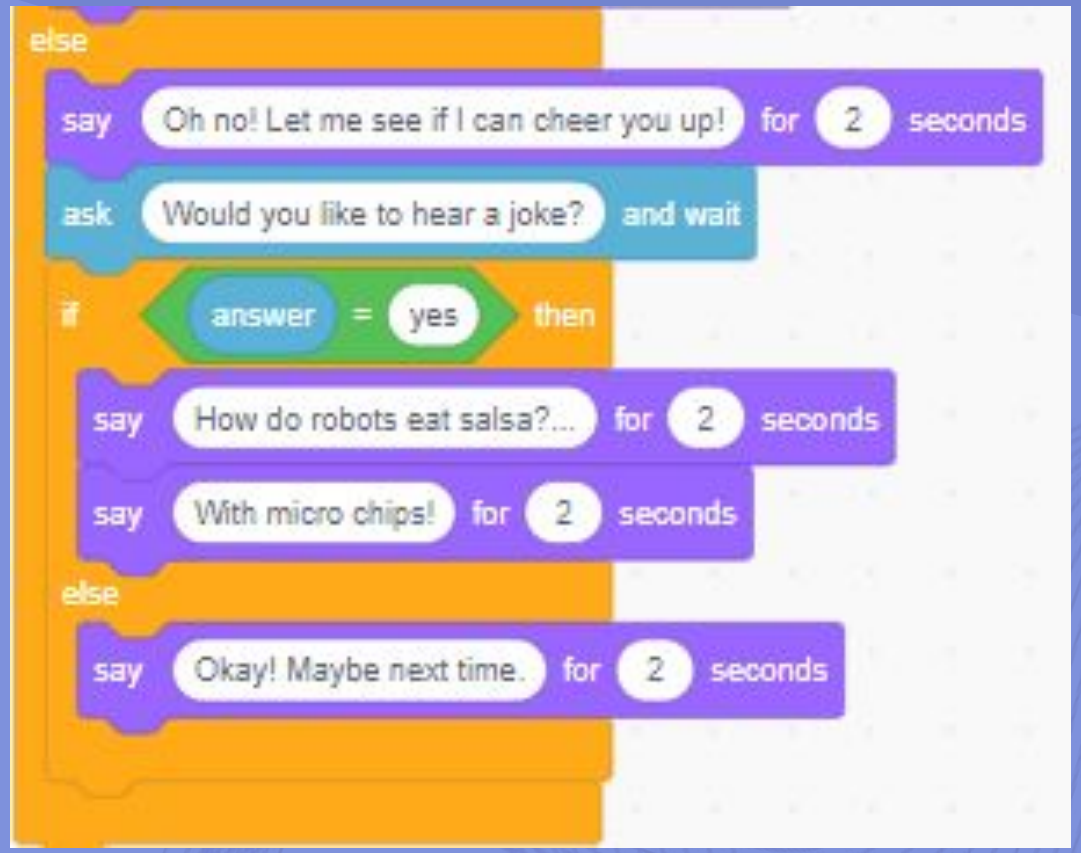
In this example, if the user enters ‘good’, the Chatbot will say ‘I am happy to hear that!’. Otherwise, the ChatBot will say ‘Oh no!

Step 5

Have your Chatbot make decisions

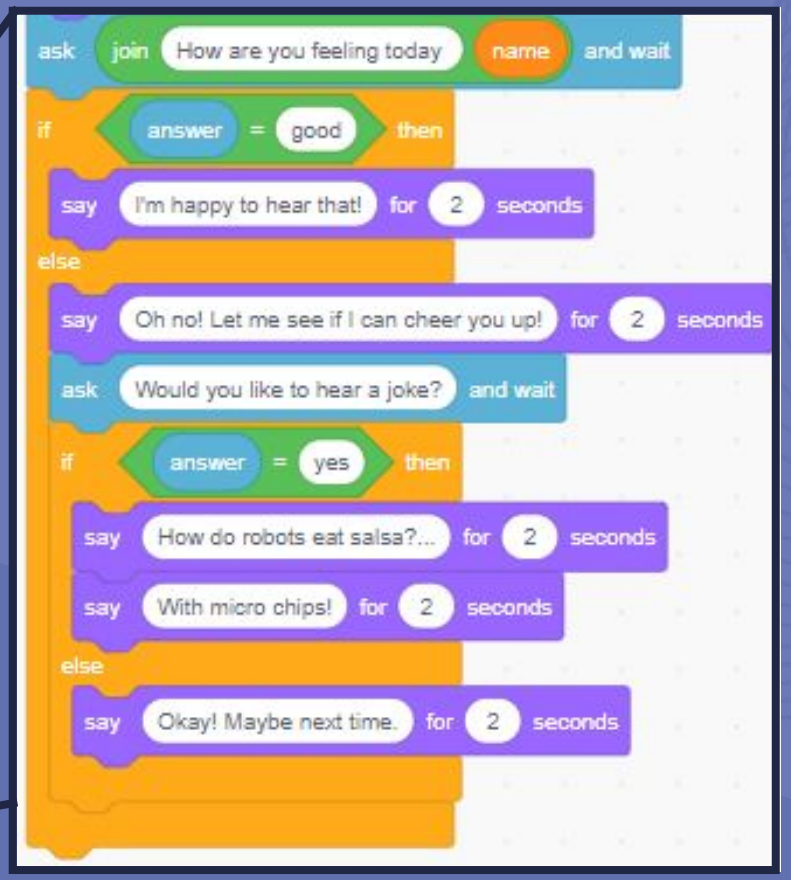
Get creative with your IF statements! You can put IF blocks inside other IF blocks.

In this example, if the user didn't enter 'good', the ChatBot will ask them if they would like to hear a joke. If the user responds 'yes', the ChatBot tells a joke.



Example

This is what your code might look like so far...



Step 6

Customising your ChatBot

We can add some personality to our ChatBot by animating their reactions.

In this example, we use a ‘repeat’ block to have the ChatBot jump up and down.

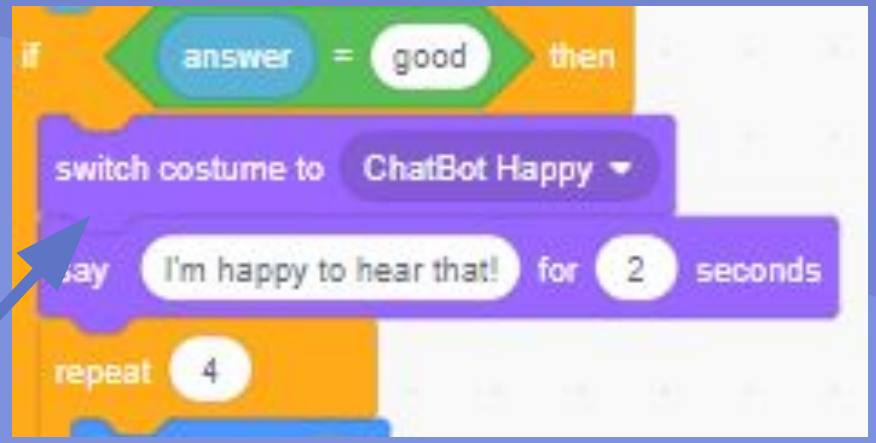
Step 6

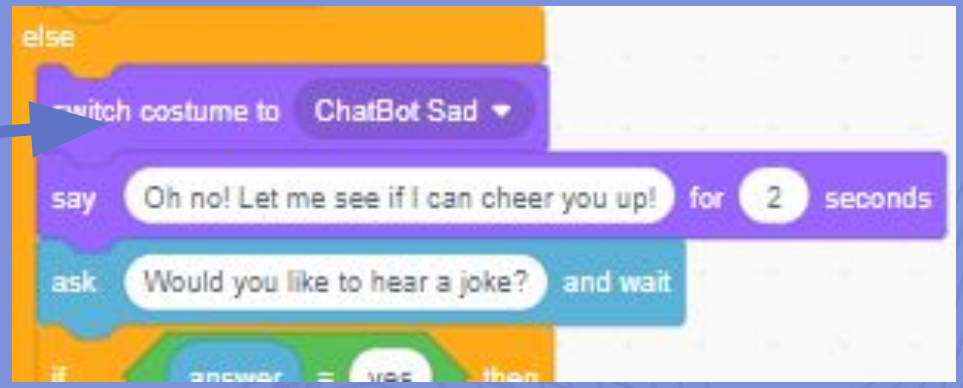
Customising your ChatBot

Additionally, we can change their costume to show different emotions.

You can customize their different possible emotions in the ‘Costumes’ tab. Could you make them:

- Angry?
- Confused?
- Scared





Step 6

Customising your ChatBot

Could you add some sound affects?

You can customize their different possible sound affects in the ‘Sounds’ tab.

Extension

Further ways you can customise your ChatBot

Could you change the background? You can add different backdrops to your game using the ‘Stage’ tab in the bottom right corner.

Links to everyday life

Robotics

Artificial Intelligence and Robotics often come hand in hand. Boston Dynamics have created robots that can perform gymnastics!

Helping Others

AI has been used in brain scanning, helping to identify and learn about varying types of cancer

Creativity

Ai-Da is an example of where robotics is becoming more of an important part of the artistic world. She is a life-size android artist powered by AI, capable of creating her own paintings and sculptures.

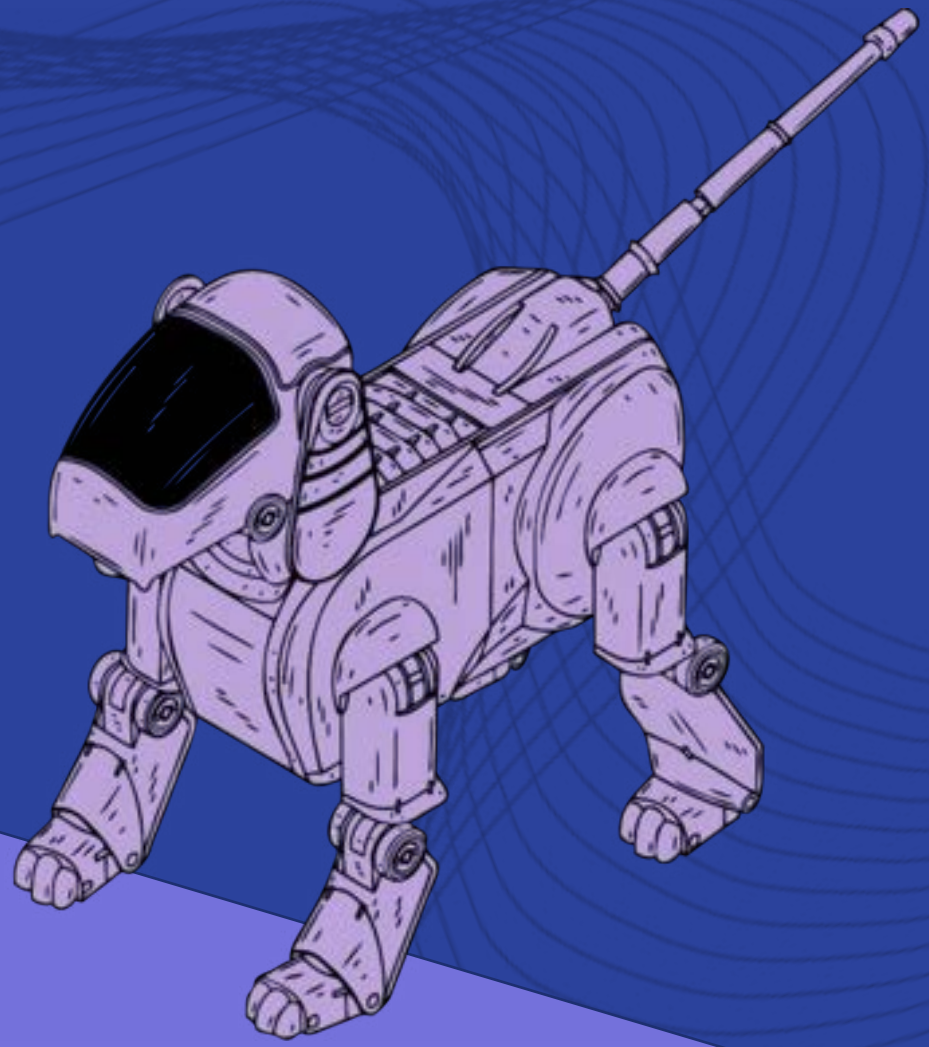
Conclusion

Learning outcomes

- ✔ *Write code that gets information from the user and stores the answer in a variable*
- ✔ *Have your ChatBot respond to user input and make decisions*
- ✔ *Customise your ChatBot and experiment with costumes, sounds and backdrops*

Congratulations!

You have completed the project



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