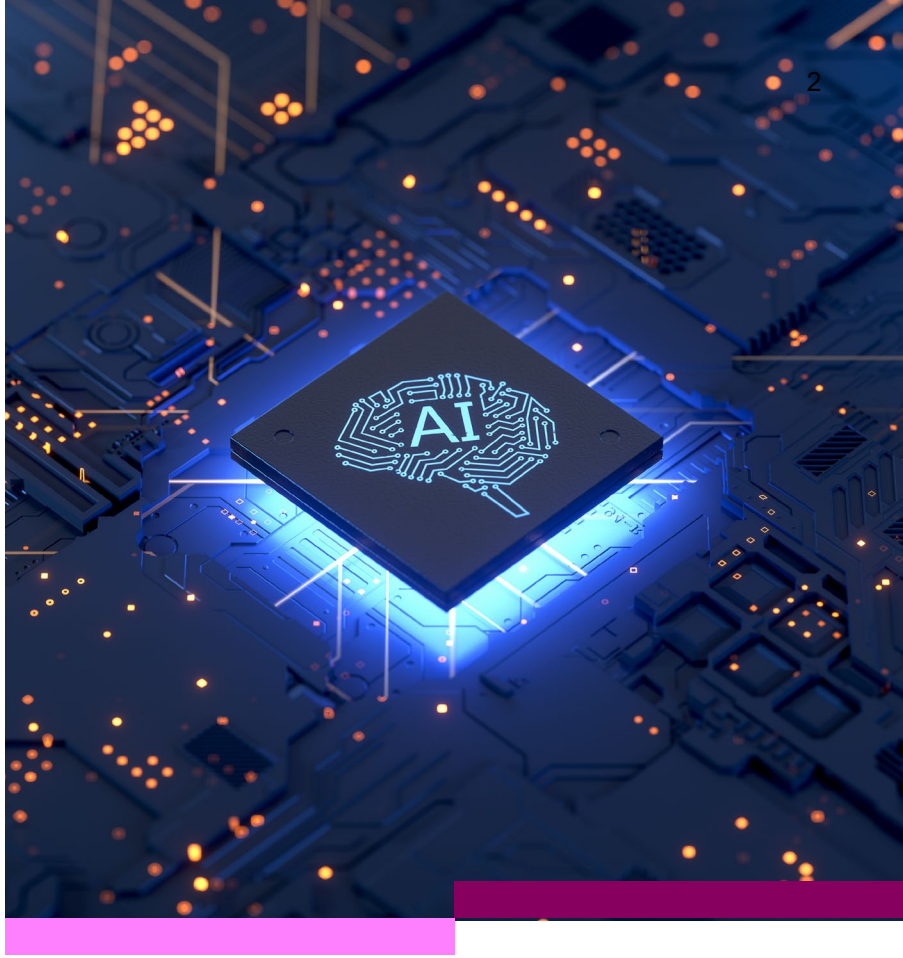
BT Group

Artificial Intelligence (AI)

AI vs humans in customer service

Across many different industries, businesses like BT Group are using AI in **innovative ways** to **help and connect with their customers.** For example, this can improve the quality of their **customer service** and help these companies to grow.



In this module, we will consider the **risks and benefits** of AI.

Big Thinking...

By the end of this module, you should be able to form an opinion on the ‘big thinking’ statement:

*How is AI **impacting human interaction** in the world of work?*

Module overview

01

The ‘what, how, and why’ of AI

Learn about AI and how it works through a series of fun interactive activities.

02

AI in customer service

Delve deeper into the world of chatbots, helpdesks and ticketing systems.

03

DIY Chatbot Challenge

Work in groups to build your own AI chatbot.

04

Presentations and reflections

Module objectives

Today's lesson is one part of a module of four lessons.

By the end of the module, you will be able to demonstrate different technical and human skills that will help you succeed in a future transformed by technology.

Module objectives

This module will focus on the following skills:

- Technical skills: using and managing digital devices, platforms and apps
- Human skills: critical-thinking and problem solving

Lesson objectives

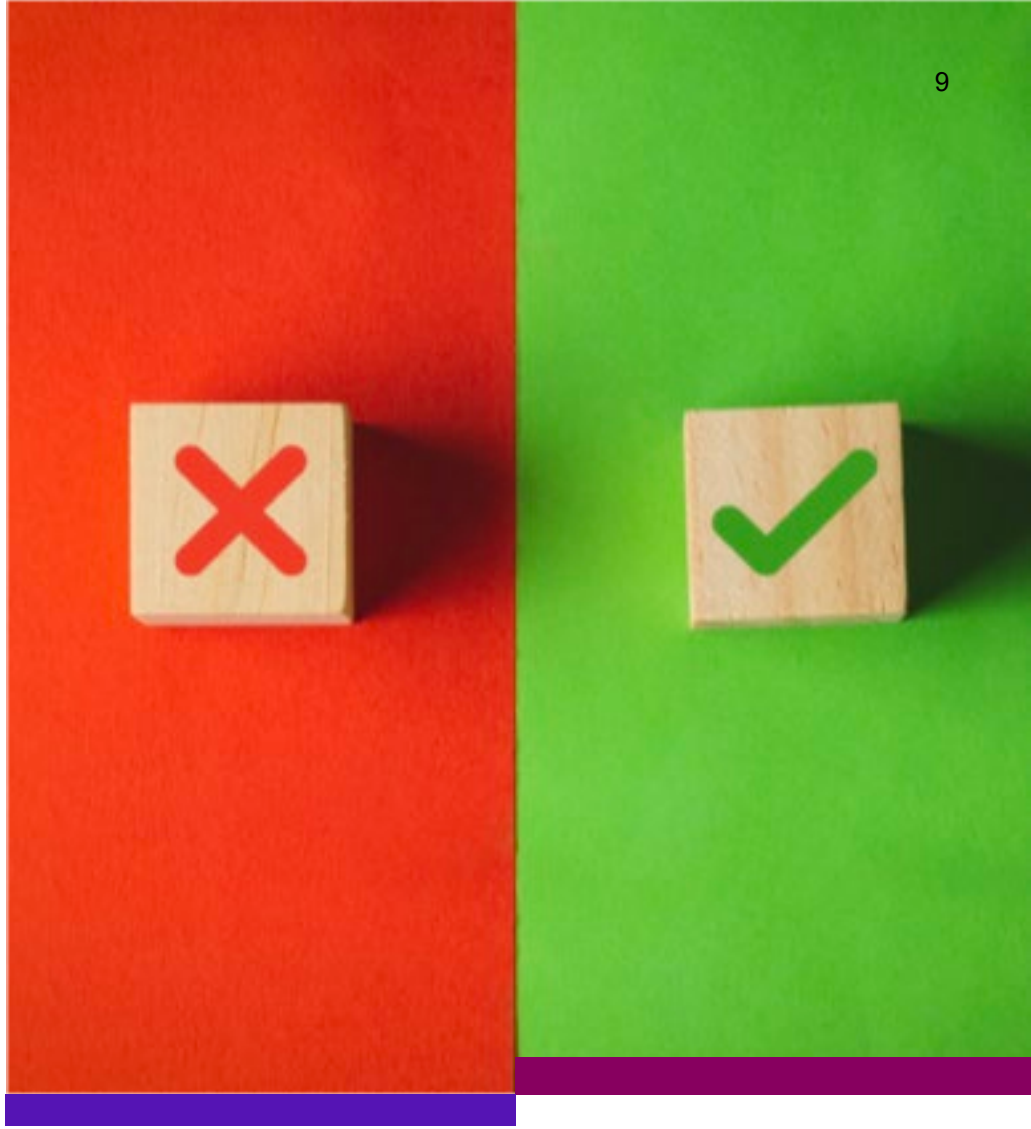
By the end of this lesson, you will be able to:

- Understand and apply Boolean logic and explain how it is used by chatbots.

Boolean logic

Boolean logic is a type of algebra often used in computer programming.

In computing, the term Boolean means a result that can only have one of two possible values: true or false.



Boolean logic takes two statements and applies a ‘logical operator’ to generate a ‘true’ or ‘false’ value.

The ‘logical operators’ are AND, OR and NOT.

AND
(both terms)

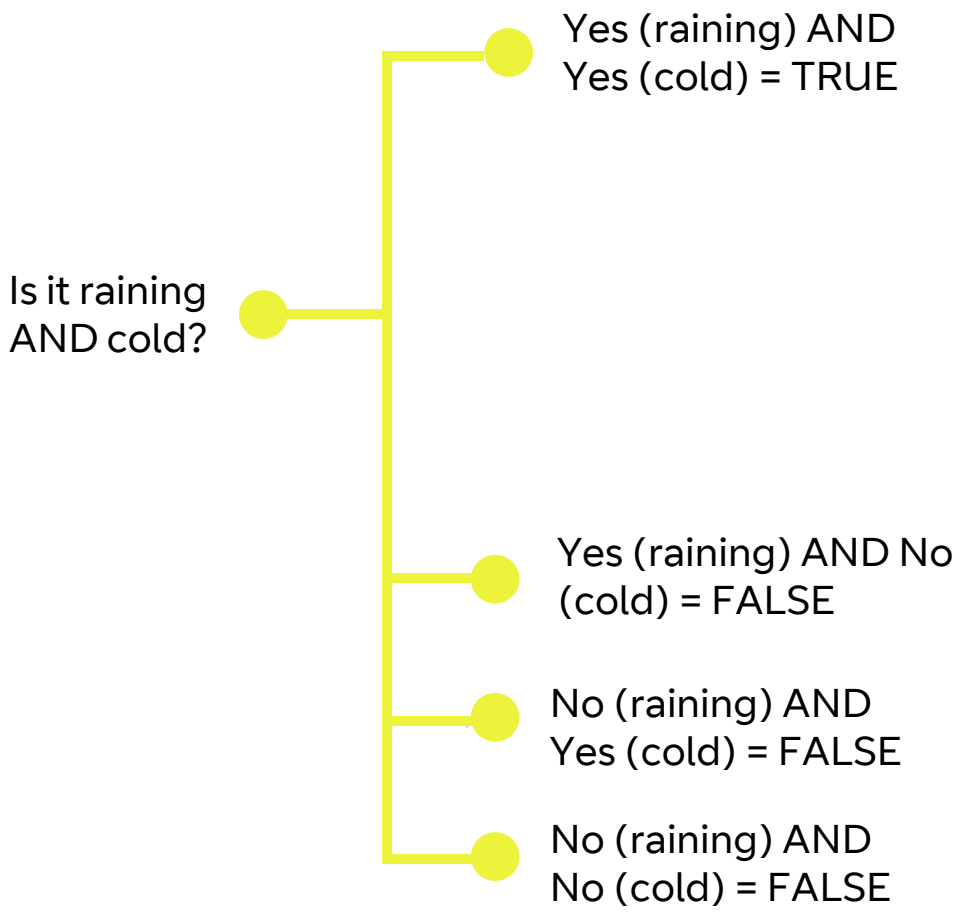
OR
(either terms)

NOT
(only one term)

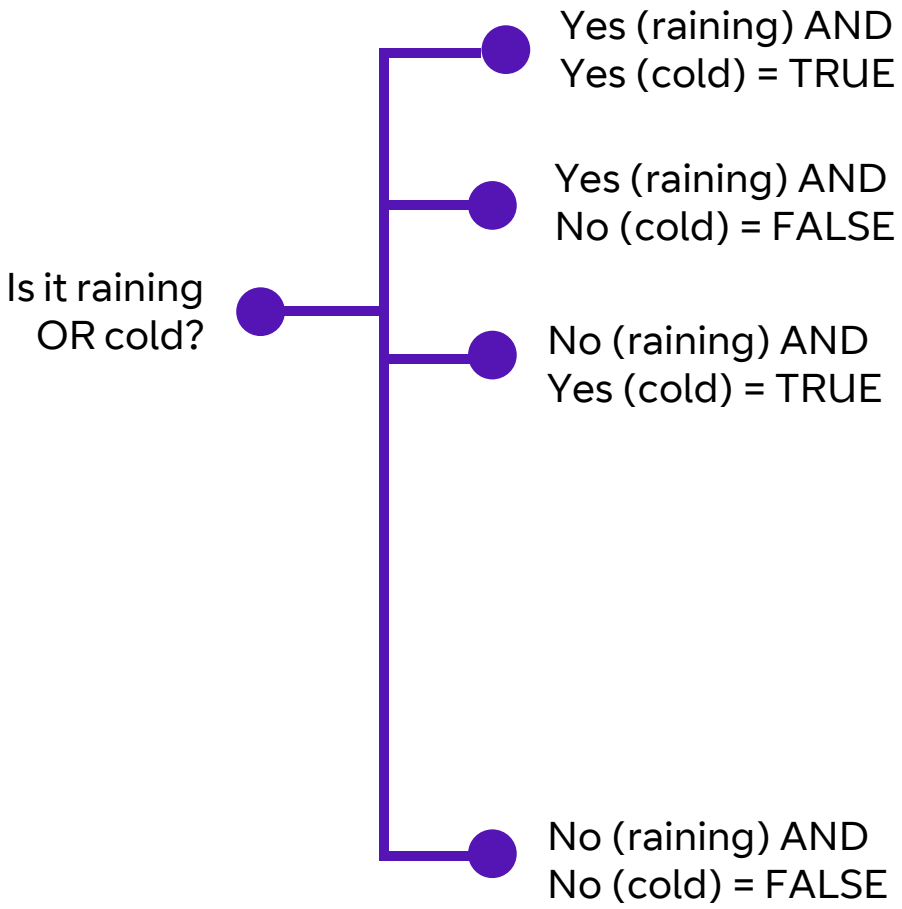
AND (both must be yes to be true)

Raining

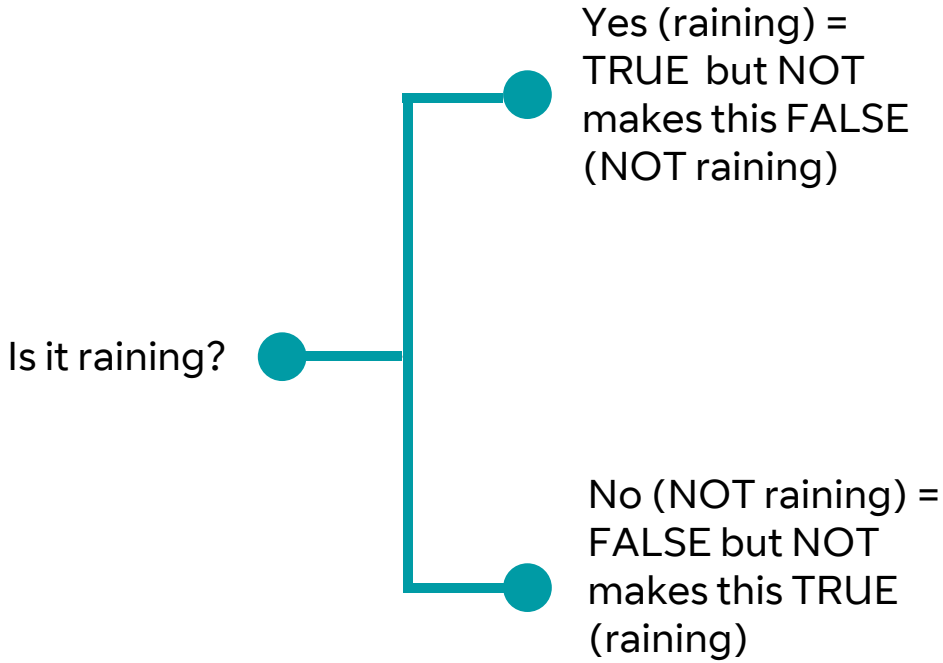
Cold



OR (one or both must be ‘yes’ to be true)



NOT (only one can be true)



A real-life example of the NOT Logic

Imagine you have a box of pens. Some are red and some are not. You don’t want to use a red pen. The logic would look at all the pens and ask: ‘Is the pen red?’. If the pen is red (true) it will ignore it, now making this false. If the pen is NOT red (false), the logic will consider it, now making this true.

Boolean logic in practice

Boolean logic is important in coding because it helps computers make decisions. This might look like:

- Deciding what happens when a user clicks a button on a website
- Determining if a player has won a game
- Figuring out which emails go to spam

Sorting customer enquiries

Boolean logic in chatbots

Chatbots use Boolean logic to make decisions based on what the customer writes. This allows the chatbot to:

- Choose the most appropriate responses
- Direct the flow of conversation with questions
- Ask for further information

Shopping website chatbot

User: "I want to return an item."

Boolean Logic: The chatbot checks if the input contains the word "return.”

- `if "return" in user_input = true

If the condition is true, the bot responds with: "Please provide your order number."

If the condition is false, the bot responds with: "Are you looking for help with something else?"

Flight booking chatbot

Bot: Do you want to book a one-way or round-trip flight?

Boolean Logic:

- Condition 1: `if user_input = "one-way":`

If the condition is true the bot will ask for the departure date.

- Condition 2:`if user_input = "round-trip":

If the condition is true the bot will ask for both departure and return dates.

If neither condition is met (false), the bot will respond, "Please choose either 'one-way' or 'round-trip'."

Email validation chatbot

Bot: please provide an email address

User: hello@myemail.co.m

Boolean Logic: The bot checks if the input contains "@" AND ".com" OR ".org“ OR “.co.uk”.

- `if "@" in email and (email.endswith(".com") OR (email.endswith(".co.uk") OR (email.endswith(".org")):`

If the condition is true, the bot adds the email address to the newsletter mailing list.

If the condition is false, the bot responds with, "Please enter a valid email address."

User profile chatbot

The user has previously indicated a preference for "sports gear."

Boolean Logic: The chatbot checks the user's profile or past interactions.

- `if user_preference = "sports gear":

If the condition is true the bot writes: "Check out our latest sports gear collection!”

If the condition is false the bot suggests other categories, like "Would you be interested in our new electronics?"

Optional activity: write Boolean conditions for a chatbot

Boolean conditions challenge:
Match the ‘tickets’ with the ‘responses’ and write a condition for the bot to follow that will lead them to an appropriate response.

There might be more than one condition and more than one response for a ticket.

Answers

Ticket	Response	Condition
“My order hasn’t arrived.”	“I’m sorry to hear that. Please can you provide the order number which would have been sent to you on email?”	*If “order” AND "hasn’t" AND “arrived” in user_input = true, bot replies to customer with request to send their order number.*
“I want to check the time of my appointment.”	"No problem at all. Please can I take your name and date of birth?	*If “time” AND “appointment in user_input = true, bot sends customer request for date of birth*
“I need help installing my new design software package.”	“Thanks for getting in touch. Sure, I’ll connect you to someone who can help with that.”	*If “support” OR “help” AND “install” in user_input = true, bot connects with a technician who can talk them through how to install the software.*

Discuss...

Discuss - what are the strengths and limitations of a chatbot compared to a human customer service agent?

Think about this quote:

"A study of three major artificial intelligence chatbots shows that they are more inclined to generate wrong answers than to admit ignorance. It also found that people posing questions to the AI aren't great at spotting the bad answers."

Strengths and limitations

Strengths

Efficiency and Availability: AI-powered chatbots and virtual assistants can reply immediately and 24/7, this is great for common, repetitive questions.

Consistency: AI can provide consistent responses and has mostly accurate technical responses ready based on facts.

Limitations

Complex Problem Solving: AI can struggle with issues that fall outside predefined scripts and that require critical thinking and emotional intelligence.

Can’t guarantee correct answers: AI might not always have the right answer as questions become more complex, so users need to use critical thinking to recognise when this might be the case.

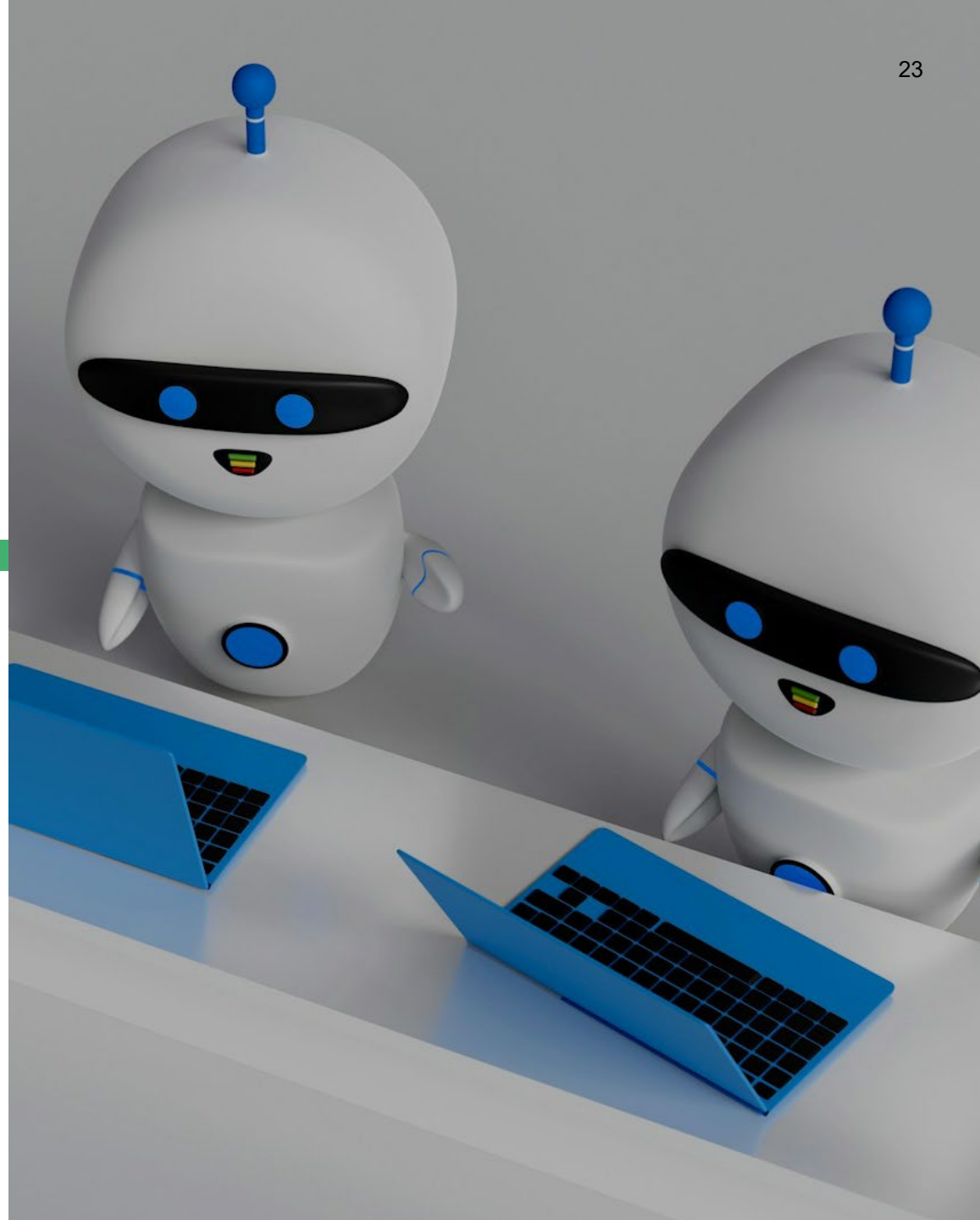
Reflect...

Is customer satisfaction based only on whether their problem is solved?

Activity: AI chatbot role play

In pairs, one person will act as a customer and one person will play an AI chatbot. The customer will grade responses.

In this activity we will explore the human angle and delve deeper into what leaves a customer feeling satisfied.



Building an AI chatbot

Imagine you run a popular online gaming community with thousands of members.

Every day, you get a flood of messages from players asking for help with different issues, like recovering lost passwords, fixing game bugs, or reporting bad behaviour in chat.

To keep everything running smoothly and make sure everyone gets the help they need, you decide to use an AI chatbot to help your company quickly find and fix issues, making sure your gaming community stays happy and enjoys their experience.

Tutorial


Introducing Landbot AI
Landbot AI
GPT-3 Integration
Build AI chatbots
NLU Component
Natural language understanding
Text to Bot
Let AI build your bots
Landbot

Recap

What have you learnt today?

- What is Boolean Logic?
- How do chatbots use Boolean Logic?
- What are some of the strengths and limitations of an AI chatbot?