An introduction to generative AI

1. Introduction

This activity will give a brief overview of what Generative AI is and how it is being used.

Using this tutorial

Use the back and next buttons at the bottom right of the screen to navigate through the tutorial. Alternatively, use the contents button to jump to a specific page.
You will need to allow approximately **5 minutes** to complete the tutorial.

Learning outcomes

After completing this tutorial you will be able to:

1. **Recognise generative AI in daily life**: Identify common generative AI applications like chatbots, facial recognition, streaming services, and digital assistants.
2. **Understand generative AI**: Explain generative AI and its ability to create diverse content such as text, images, music, video, and code.
3. **Describe LLMs**: Understand how Large Language Models (LLMs) work.

2. Examples of AI in everyday life

Lots of us have been interacting with AI in various ways for years (sometimes without realising it).

Examples of AI in everyday life

- Chatbots – used in customer service. (shopping, banking, booking a holiday), tech support.
- Facial recognition – unlocking your phone, and in camera apps.
- Music and media streaming services, e.g. Netflix and Spotify use AI algorithms to recommend shows and music based on your viewing and listening history.
- Online shopping – personalised recommendations and adverts.
- Digital assistants, e.g. Amazon Alexa, Google Assistant, Siri.
- Sending an email – spell check and spam filters.

- Travel and navigation, e.g. Google Maps.
- Writing assistants, e.g. Grammarly.
- Health and fitness apps, e.g. Fitbit.
- Social media feeds – AI controls the feeds that you get to see while browsing through social media platforms (e.g., Facebook, X, Instagram) or the notifications you receive.

3. What is generative AI?

Even though AI is not new, you have probably been hearing a lot about easy-to-use, publicly available Generative AI tools like ChatGPT and Google Gemini.

But what is generative AI?

It is a type of AI technology that automatically generates (or creates) content in response to prompts given to it by users.

These tools can generate text, images, music, video, code and other formats.

ChatGPT and Google Gemini are examples of text Generative AI tools, while DALL-E2 is an AI tool that generates images and art. There are more tools being developed all the time, as the technology is rapidly developing and evolving.

4. How does it work?

- Generative AI tools that deal with text are called Large Language Models or LLMs.

- They have been trained on vast amounts of data from webpages, social media conversations and other online content to generate human-like responses to our prompts. These tools can continuously update with new data by collecting our previous questions and prompts.

- LLMs (such as Chat GPT) work like predictive text, except the algorithms are more sophisticated. They create content based on recognised patterns, e.g., what word or phrase is most likely to come next, rather than knowing what the words or phrases mean.

- You can provide these tools with a prompt about almost any topic and they will respond in fluent English as well as many other languages, often sounding

surprisingly knowledgeable, or with an image / computing code. Although outputs produced by Generative AI tools look plausible, they are often misleading, made up, or may be entirely wrong.

- Each response is unique, you will probably never get the exact same reply twice.

- Responses are conversational. Once you have asked a question you can just carry on the conversation by adding new questions or prompts, rather than having to redo your search, as you would in a search engine like Google.

5. Quiz

Question 1 of 5

What is generative AI?

1. AI that only processes data
2. AI that creates content based on user prompts
3. AI that cannot update its data
4. AI that performs physical tasks

Question 1 Feedback for Option 1

False. Typing on a keyboard is a manual activity that does not involve AI.

Question 1 Feedback for Option 2

False. Watching a sunset is a natural experience, not related to generative AI.

Question 1 Feedback for Option 3

True. Chatbots in customer service use generative AI to interact with users.

Question 1 Feedback for Option 4

False. Reading a physical book is a non-digital activity without generative AI involvement.

Question 2 of 5

What is generative AI?

1. AI that only processes data
2. AI that creates content based on user prompts
3. AI that cannot update its data
4. AI that performs physical tasks

Question 2 Feedback for Option 1

False. This describes data processing AI, not generative AI.

Question 2 Feedback for Option 2

True. Generative AI creates content like text, images, music, etc., in response to user prompts.

Question 2 Feedback for Option 3

False. Generative AI can update its data with new information.

Question 2 Feedback for Option 4

False. Generative AI focuses on content creation, not performing physical tasks.

Question 3 of 5

Which of the following is a text generative AI tool?

1. Spotify
2. Google Maps
3. Dall-E2
4. ChatGPT

Question 3 Feedback for Option 1

False. Spotify uses AI for music recommendations, not text generation.

Question 3 Feedback for Option 2

False. Google Maps uses AI for navigation and travel information, not text generation.

Question 3 Feedback for Option 3

False. DALL-E2 generates images and art, not text.

Question 3 Feedback for Option 4

True. ChatGPT is a text generative AI tool.

Question 4 of 5

How do Large Language Models (LLMs) generate responses?

1. By understanding the meaning of words and phrases
2. By randomly selecting words
3. By recognising patterns in vast amounts of data
4. By copying and pasting from a database

Question 4 Feedback for Option 1

False. LLMs do not understand the meaning; they recognize patterns.

Question 4 Feedback for Option 2

False. Responses are not random; they are based on patterns in data.

Question 4 Feedback for Option 3

True. LLMs generate responses by recognising patterns in the data they were trained on.

Question 4 Feedback for Option 4

False. By copying and pasting from a database

Question 5 of 5

Why might responses from generative AI tools be misleading?

1. Because they never update their data
2. Because they only produce content in English
3. Because they rely on pattern recognition rather than understanding
4. Because they always provide the same response

Question 5 Feedback for Option 1

False. Generative AI tools can and do update their data.

Question 5 Feedback for Option 2

False. Generative AI tools can produce content in multiple languages, not just English.

Question 5 Feedback for Option 3

True. Generative AI tools rely on pattern recognition and do not truly understand the content, which can lead to plausible but misleading or incorrect outputs.

Question 5 Feedback for Option 4

False. Each response is unique; generative AI tools do not provide the same response every time.