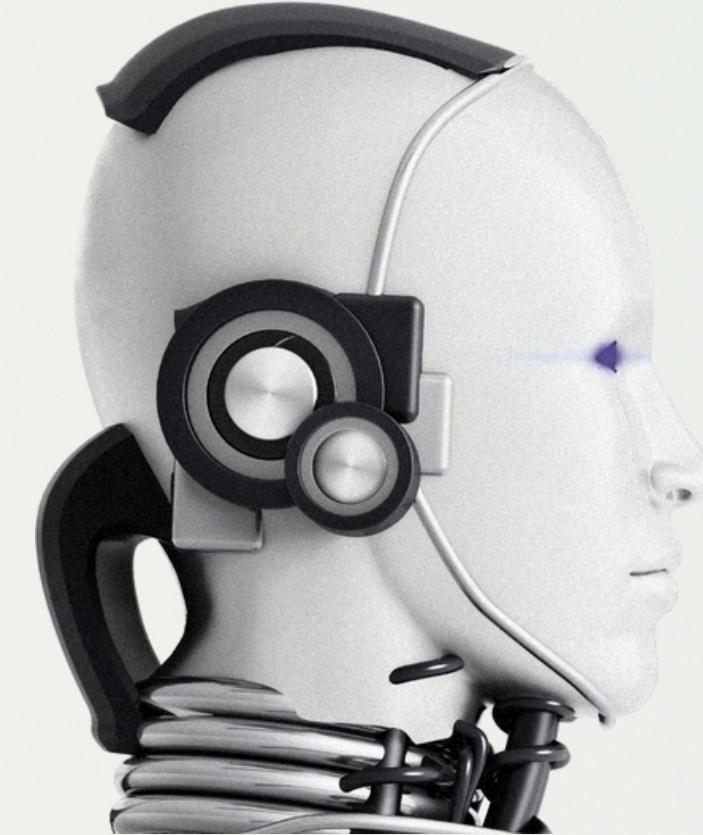


WELCOME TO THE WORLD OF GENERATIVE AI



WHAT IS GENERATIVE AI?



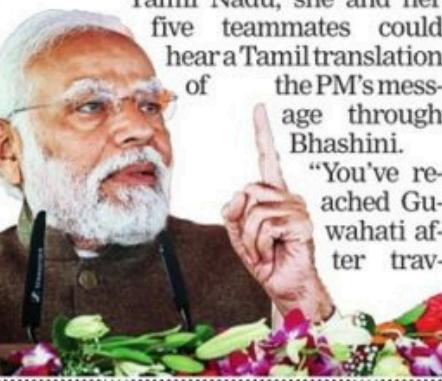
Modi Taps Bhashini AI Platform to Bridge the Language Divide

Modi used it to enable people from south India to understand his speech

Suraksha P

Bengaluru: Prime Minister Narendra Modi used Bhashini, the Government of India's national public digital platform for languages that develops services and products for citizens by leveraging AI, at two recent public events to enable travellers and students from southern India to understand his speech.

Bhashini counts among its various products and technologies, real time speech to speech machine translation, and automatic speech recognition, which Prime Minister Narendra Modi used on December 19 to interact with students in various parts of India via



FILE PHOTO

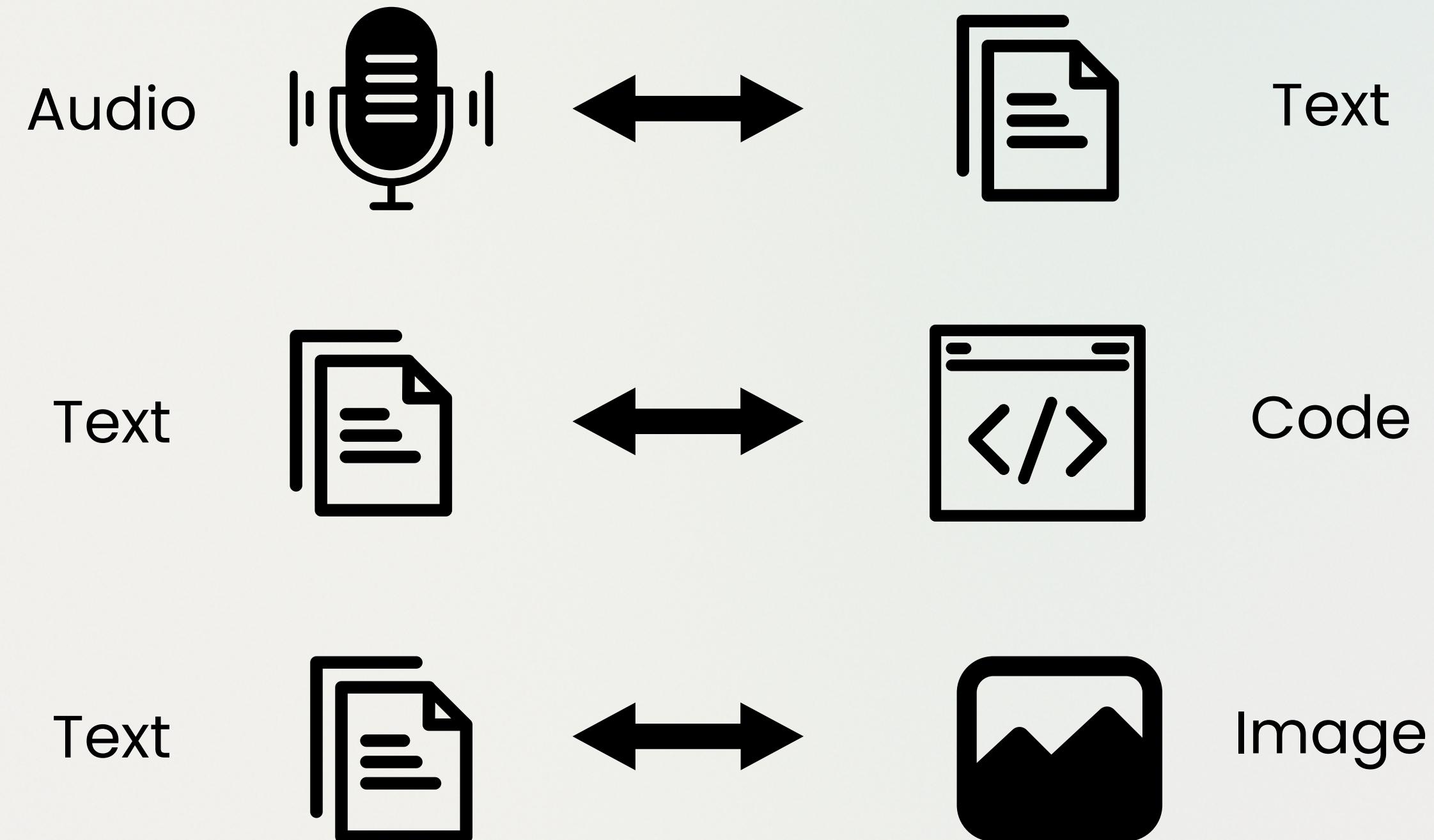
video conferencing. During the interaction with the participants of the grand finale of Smart India Hackathon, 2023, students from Tamil Nadu spoke to the PM from Royal Global University, Guwahati, Assam. As the PM greeted Reshma, a student from Nadar Saraswathi College of Engineering & Technology, from Theni in Tamil Nadu, she and her five teammates could hear a Tamil translation of the PM's message through Bhashini.

"You've reached Guwahati after travelling several kilometers from southern India. You're all ambassadors of Ek Bharat Shreshtha Bharat (a Government of India initiative that aims to improve the present cultural connection across various states of India). Please tell me about your team and the problem area you are working on," the PM said, which the students heard in Tamil after a couple of seconds. Reshma could immediately talk about her solution: AI-based generative design of hydro power plants.

This isn't the first time that Bhashini has been deployed. Recently, in Ranasi, PM Modi urged travel from Tamil Nadu to plug in their headphones to listen to a real time Tamil translation of his speech at Kashi Tamil Sangamam, 2023.

suraksha.p@timesgroup.com

WHAT IS GENERATIVE AI?



WHAT IS GENERATIVE AI?



- Getting to know how AI works
- Saves your time
- Dealing with AI applications
- Boosts your creativity

..... and much more

YOU WILL GET TO LEARN



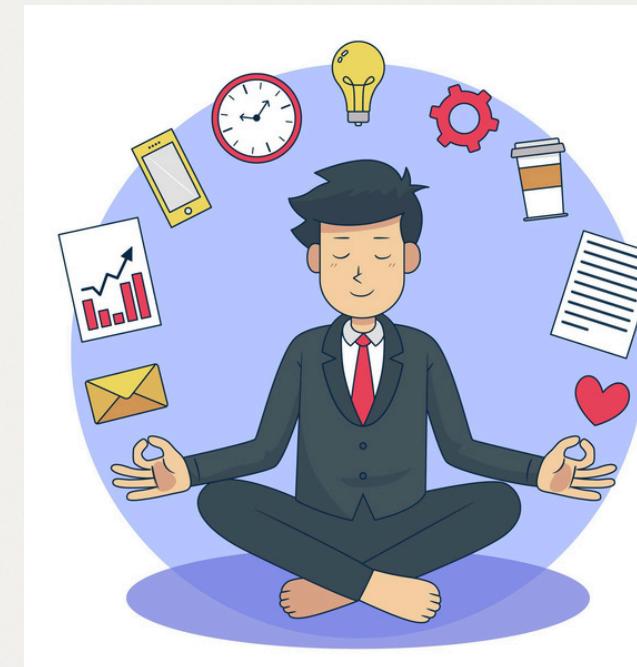
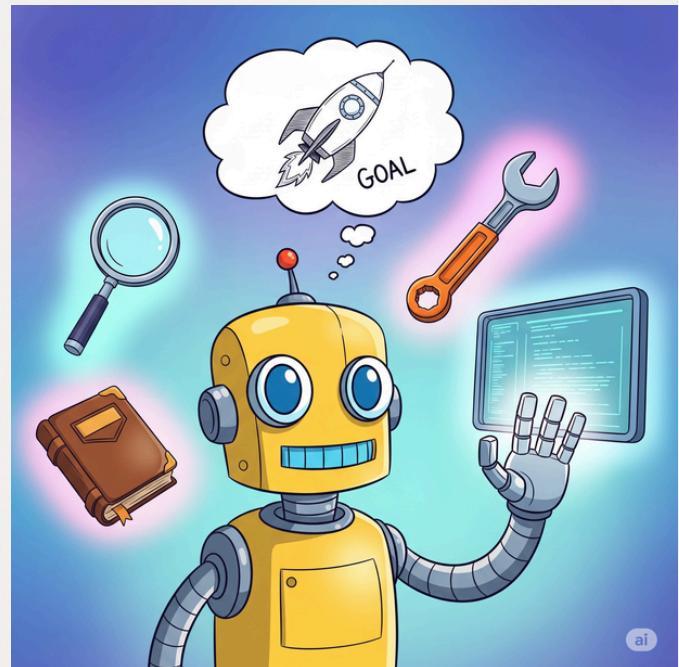
- Introduction to Generative AI
- Low Code / No Code AI Tools
- Prompt Engineering : How to Talk with AI
- Introduction to RAG: Making AI smarter
- LangChain : RAG Implementation with LangChain
- LangGraph: Building Agentic RAG using LangGraph
- Introduction to MCP : Providing Context to AI
- Future of Gen AI : New Paths, New Opportunities
- Learning with Real time & Real world Projects

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INDUSTRY USE CASES OF GENERATIVE AI

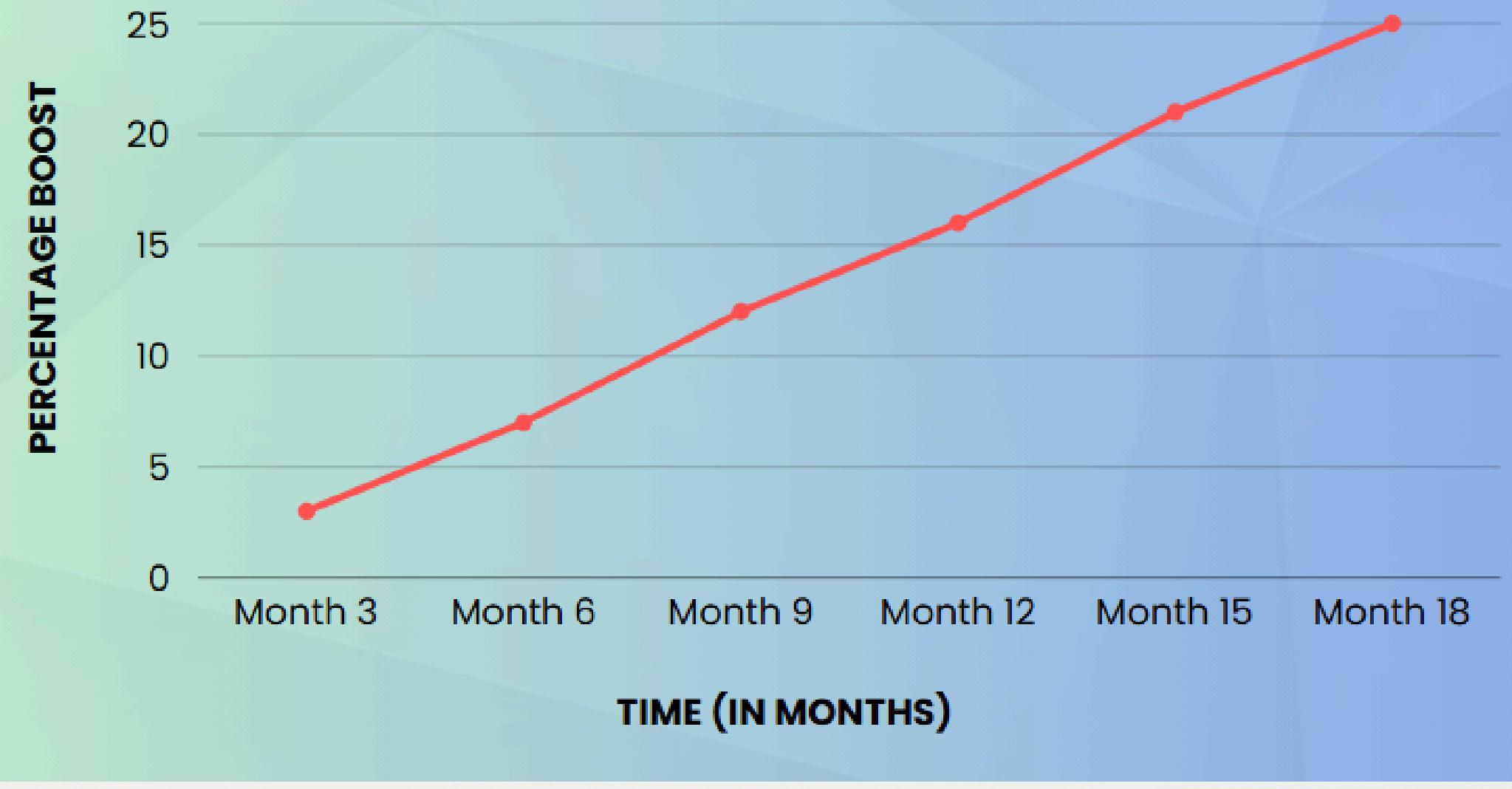


- **Create Content** – Images, Videos, Music
- **Programming** – Write code, fix bugs
- **Customer Support** – Make Chatbots
- **Research** – Write Reports and Insights
- **Education** – Make notes, take quizzes
- **Marketing** – Create Ad copies & campaigns
- **Content Writing** – Write articles, blogs

WHY GENERATIVE AI?



GENERATIVE AI ADOPTION: PRODUCTIVITY BOOST IN 18 MONTHS



A Significant rise of
~**27%** in productivity
after using Generative
AI methods.

Source - Gartner.com

LLMS

An **LLM** is mainly about **generating content like text, code, translations** etc. It learns from data and then makes new, sensible content (like writing or code), rather than just understanding or categorizing existing information. This **power to generate** is what makes it a **core part** of Generative AI.

Here are few examples of LLMs:



Gemini

TRANSFORMERS

A **Transformer** is a novel neural network architecture introduced in the 2017 paper "**Attention Is All You Need.**"

Ability to "**pay attention**" to all elements at once, rather than one by one

Transformers are a **new AI design** (from 2017) that's really good at **handling sequences of data, like text**. They help Generative AI by **processing information efficiently and with context**, unlike older, less effective AI types.

Mainly, there are **two** components :

- Encoder
- Decoder

TRANSFORMERS

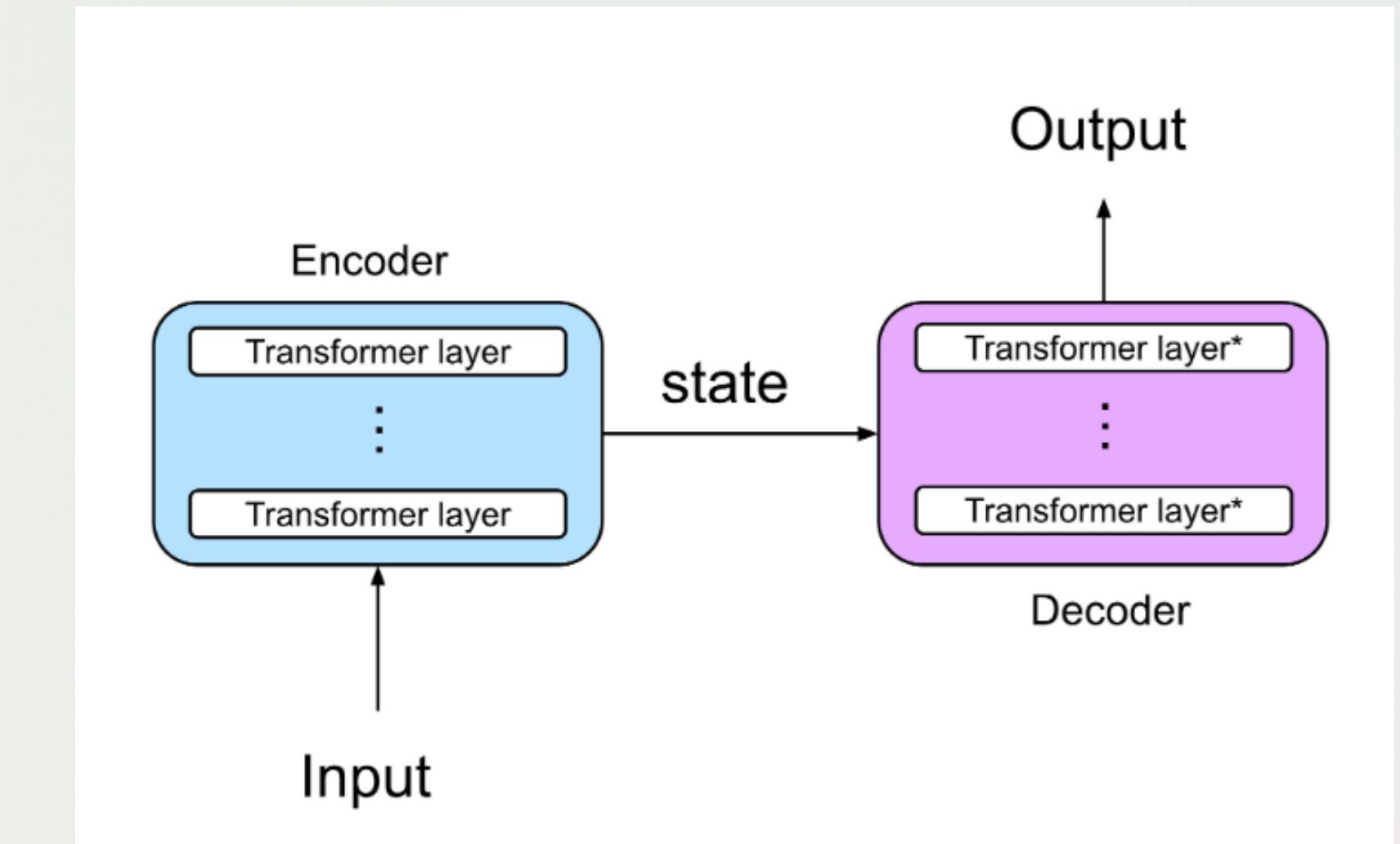


Encoder:

- Processes the entire **input** sequence to create a rich **numerical representation**

Decoder:

- Uses **numerical representation** to generate the **output** sequence one by one at a time.



DIFFUSION MODELS



A diffusion model is a type of generative AI that works as **digital artists** creates new data, such as **images**, by reversing a process of **adding noise**.

There are **two types** of diffusions:

- **The Forward Process:** This is the "**diffusion**" part, where a clear image is slowly and systematically turned into pure, random noise.
- **The Reverse Process:** This is the "**generation**" part. The model is trained to learn how to perfectly reverse the forward process, step by step.

DIFFUSION MODELS

