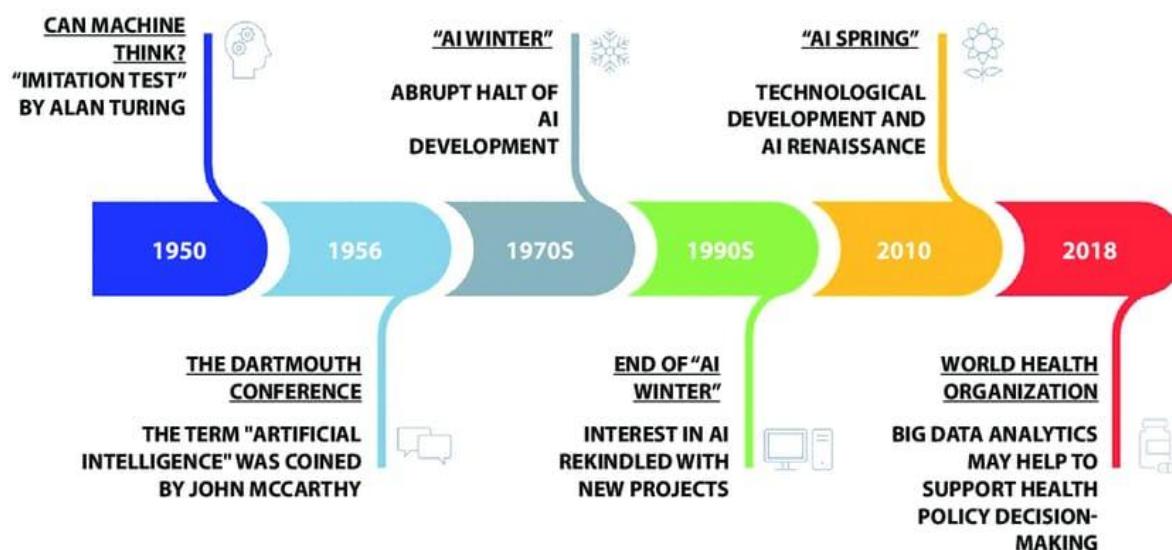


MODULE – 1

Research and present a timeline showing major milestone in AI history

TIMELINE DIAGRAM OF ARTIFICIAL INTELLIGENCE HISTORY



1. Introduction & Early Foundations (1940s–1950s) :

Artificial Intelligence (AI) refers to the development of computer systems capable of performing tasks that normally require human intelligence. These tasks include reasoning, learning, perception, language understanding, and decision-making.

Early Theoretical Foundations (1943)

The foundation of AI began with the work of Warren McCulloch and Walter Pitts, who created a mathematical model of artificial neurons. Their model showed that networks of artificial neurons could simulate logical reasoning.

Importance:

This was the first attempt to mathematically model how the human brain might compute information.

◆ 1950 – The Turing Test

In 1950, Alan Turing published a groundbreaking paper proposing the **Turing Test**.

Instead of asking “Can machines think?”, Turing reframed the question:

If a machine can convincingly imitate human conversation, should we consider it intelligent?

Long-term impact:

- Established AI as a philosophical and scientific pursuit.
- Still influences chatbot development and AI evaluation today.
- Sparked debates about consciousness vs. simulation

2. Symbolic AI and Early Optimism (1960s):

In the 1960s, AI researchers focused on **symbolic reasoning**—representing knowledge as symbols and rules.

◆ Rule-Based Intelligence

Researchers believed intelligence could be built by:

- Encoding logical rules.
- Using search algorithms to solve problems.

Computers could now:

- Solve algebra problems.
- Play checkers.
- Prove mathematical theorems

3 The AI Winters (1970s–1980s) – Summary :

The AI Winters were periods during the 1970s and late 1980s when funding and interest in artificial intelligence significantly declined. Early AI systems had promised rapid progress, but they struggled with real-world complexity due to limited computing power, insufficient data, and immature algorithms.

Governments and investors became disappointed because AI programs could not meet high expectations. As a result, research funding was reduced, projects were canceled, and progress slowed.

However, these difficult periods were important for the long-term development of AI. Researchers improved methods, focused on practical applications like expert systems, and developed stronger mathematical foundations. These improvements later contributed to the revival of AI in the 1990s and the deep learning breakthroughs of the 2010s.

1 AI research faced major setbacks during this period.

Early AI systems failed to meet high expectations.

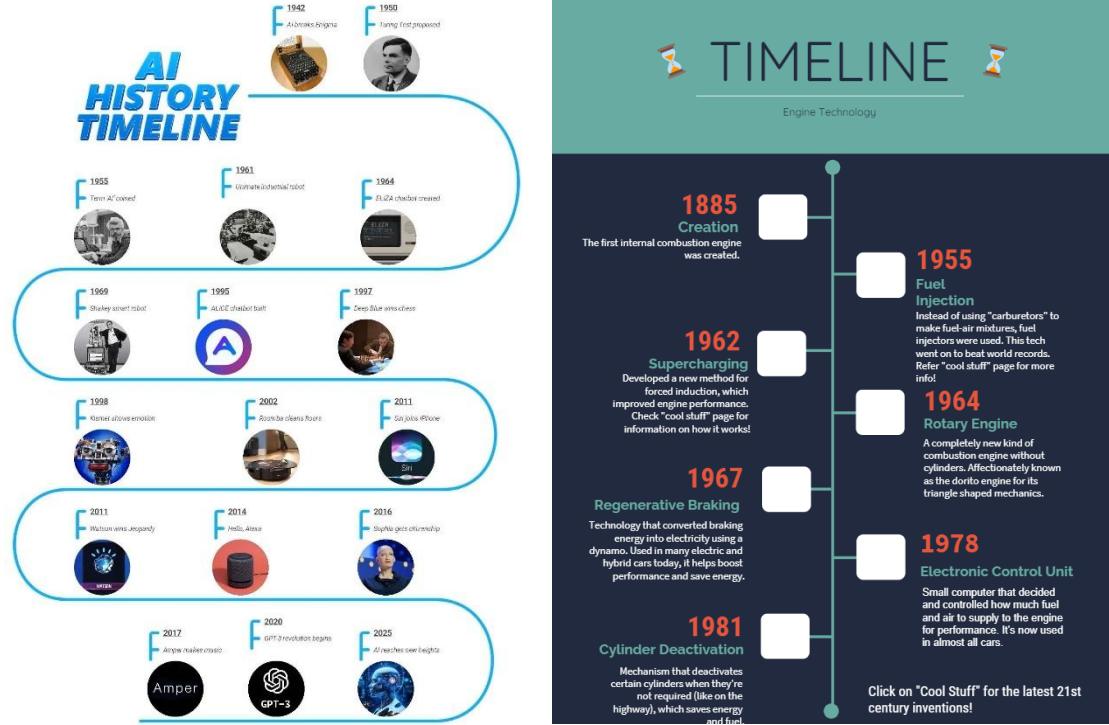
2 Limitations included low computing power, insufficient data, and complex real-world problems.

3 Funding and interest in AI declined sharply.

4 Research slowed, and many projects were canceled.

5 Despite setbacks, researchers improved methods and focused on practical applications like expert systems.

6 Laid the foundation for future AI revival and breakthroughs in the 1990s–2010s.



4 Artificial Intelligence Timeline :

◆ 1943 – First Artificial Neuron Model

Warren McCulloch and Walter Pitts create a mathematical model of artificial neurons.

Foundation of neural networks.

◆ 1950 – Turing Test Proposed

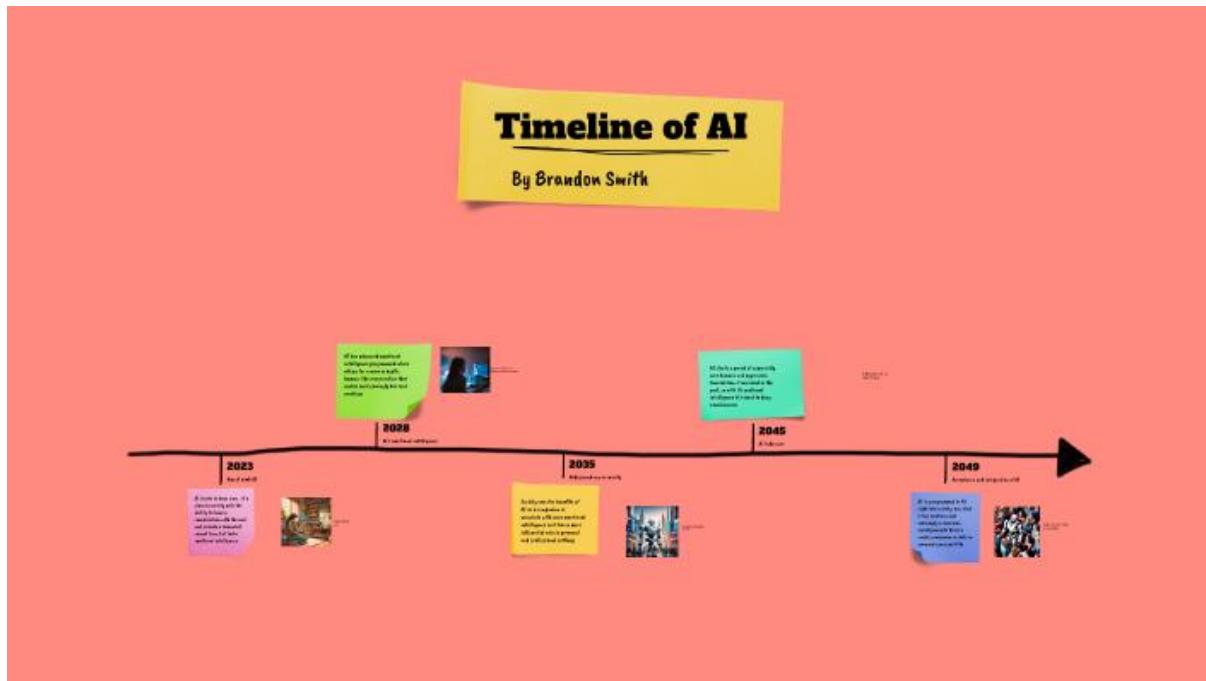
Alan Turing proposes the **Turing Test** to measure machine intelligence.

The term “Artificial Intelligence” is coined.

◆ 1966 – ELIZA Chatbot

ELIZA simulates conversation using pattern matching.

Early natural language processing system.



A major breakthrough came in 1997 when IBM Deep Blue defeated world chess champion Garry Kasparov, proving AI could outperform humans in strategic tasks.

In 2012, deep learning revolutionized AI by dramatically improving image recognition. In 2016, AlphaGo defeated the world champion in Go, demonstrating powerful reinforcement learning.

The 2020s marked the rise of large-scale language models like GPT-3 and the public release of ChatGPT, making AI widely accessible. Modern AI systems are now multimodal, capable of understanding text, images, and audio together.

In the 1970s and 1980s, AI faced setbacks known as **AI winters** due to limited computing power and unrealistic expectations. However, expert systems became commercially successful by helping businesses and medical professionals make decisions. The rediscovery of the backpropagation algorithm in the 1980s allowed neural networks to learn more effectively, laying the groundwork for modern deep learning.

Conclusion :

The history of Artificial Intelligence shows a remarkable journey from simple theoretical ideas to powerful intelligent systems used worldwide today.

Beginning with early concepts like the Turing Test proposed by Alan Turing and the foundation of AI at the Dartmouth Workshop, researchers aimed to create machines that could think and reason like humans.

Over the decades, AI evolved through different stages. Early rule-based systems and symbolic AI laid the groundwork but faced limitations, leading to periods known as AI winters. Later, breakthroughs in machine learning and neural networks revived progress. Important milestones such as IBM Deep Blue defeating a world chess champion and AlphaGo mastering the game of Go demonstrated that AI could surpass human abilities in complex tasks.