Sovereign AI

Why in News?

The government is investing in **semiconductors and Artificial Intelligence (AI)** to ensure **AI sovereignty** as **India's digital economy** is aiming for **USD 1 trillion** by **2028.**
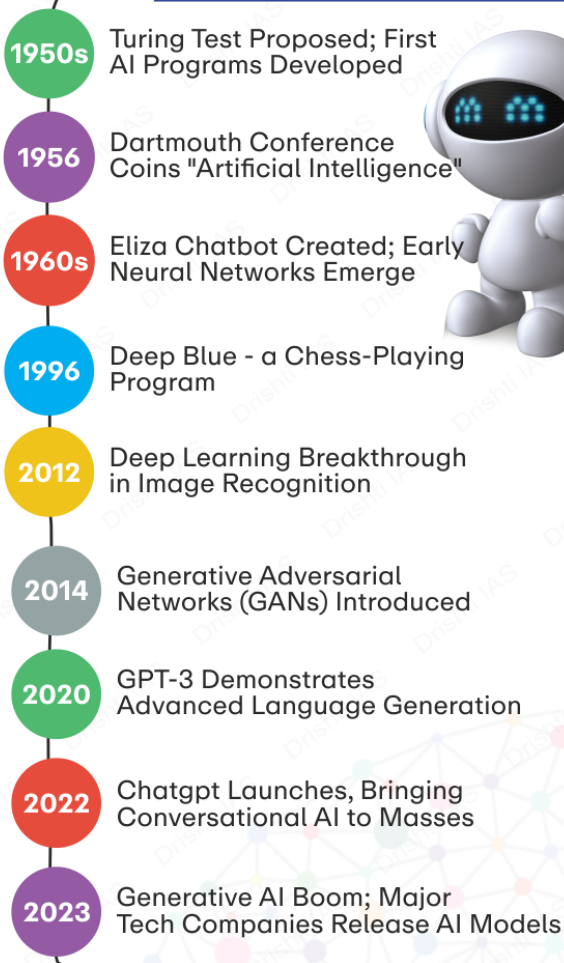
 //

Artificial intelligence(AI)

AI is the simulation of human intelligence in machines programmed to think and learn like humans, capable of problem-solving, reasoning, and adapting to new information.

AI Timeline - Major Milestones

- **1950s** — Turing Test Proposed; First AI Programs Developed
- **1956** — Dartmouth Conference Coins "Artificial Intelligence"
- **1960s** — Eliza Chatbot Created; Early Neural Networks Emerge
- **1996** — Deep Blue - a Chess-Playing Program
- **2012** — Deep Learning Breakthrough in Image Recognition
- **2014** — Generative Adversarial Networks (GANs) Introduced
- **2020** — GPT-3 Demonstrates Advanced Language Generation
- **2022** — Chatgpt Launches, Bringing Conversational AI to Masses
- **2023** — Generative AI Boom; Major Tech Companies Release AI Models

KEY COMPONENTS OF AI

- Machine Learning
- Deep Learning
- Cognitive Computing
- AI
- Neural Network
- Computer Vision
- Natural Language Processing (NLP)

Drishti IAS

Applications of AI

- **Healthcare:** Personalised medicine
- **Finance:** Algorithmic trading
- **Transportation:** Autonomous vehicles
- **Marketing & Customer Service:** Targeted advertising, chatbots
- **Education:** Adaptive learning systems, personalised tutoring
- **Agriculture:** Crop monitoring
- **Cybersecurity:** Threat detection
- **Energy:** Smart grid management, consumption forecasting

Concerns

- Deepfakes & misinformation
- Algorithmic bias
- Automation & job displacement
- Privacy issues
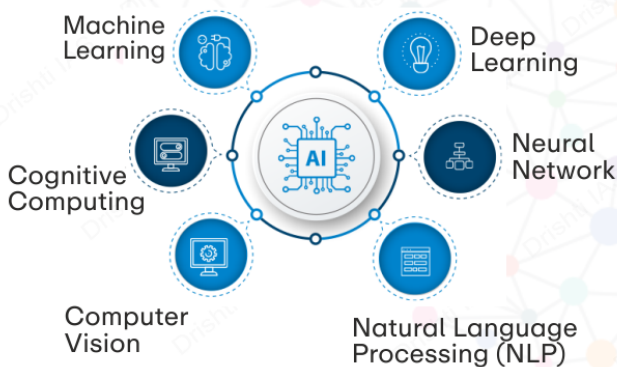- Data ownership & liability issue
- Ethical decision-making complexes

Regulating AI

- **Global Partnership on AI (GPAI)** launched in 2020
- **Bletchley Declaration (2023):** Enhance Global Collaboration on AI
- **G20 New Delhi Leaders' Declaration (2023):** Harnessing AI responsibly for good and for all
- **Hiroshima AI Process (2023)** by G7

India and AI

- **National Strategy For AI 2018**
- **AI For All:** Self-learning online program
- **GPAI Summit 2023** hosted by India
- **IndiaAI Mission 2024**
- **US India Artificial Intelligence (USIAI) Initiative:** AI cooperation in critical areas
- **AIRAWAT** (AI Research, Analytics and Knowledge Assimilation Platform): Supercomputer

What is Sovereign AI?

- **About:** Sovereign AI refers to a **nation's ability to develop, control, and deploy artificial**

intelligence using its own infrastructure, data, workforce, and business networks.
- This includes developing **AI models, infrastructure, and fostering talent** within the country.
- **Growth of AI:** In **2018, a 340-million-parameter model** was considered **large (LLMs)**, while today, **ChatGPT has 1.8 trillion parameters**, Gemini has 1.5 trillion, and China's DeepSeek has 240 billion.
  - Parameters are **internal variables** that are **adjusted** during **training** to improve a **model's performance.**
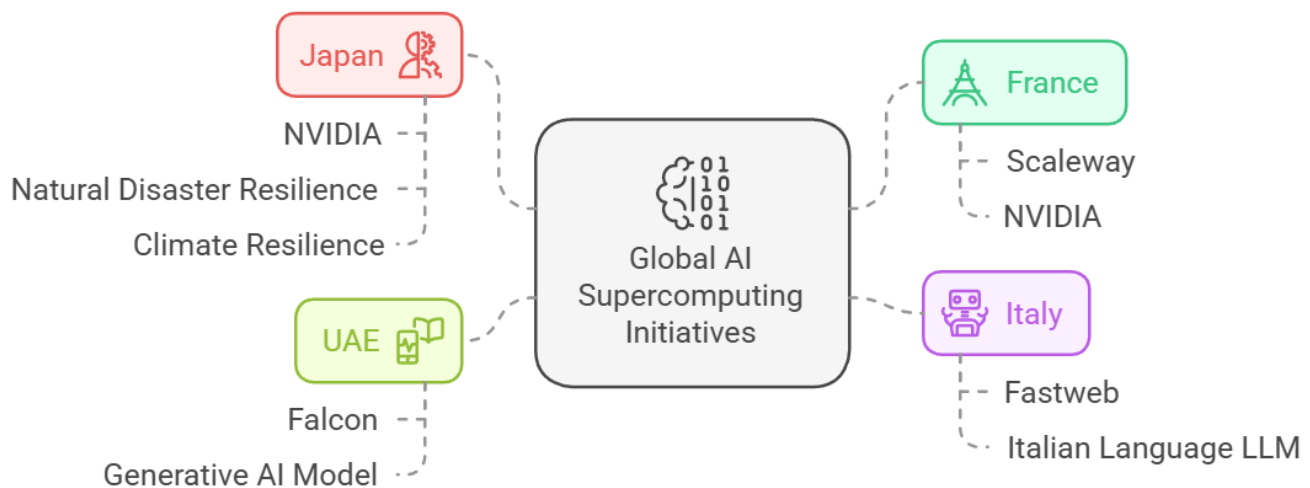- **Key Aspects:**
  - **National Control:** Sovereign AI ensures alignment with **national laws, regulations, and ethics.**
  - **Data Sovereignty:** It emphasizes data control within borders, **safeguarding privacy and national security.**
  - **AI in Governance:** **Generative AI** is reshaping markets, governance, industries, and work dynamics, with **AI-powered copilots** assisting professionals.
  - **Ethical Considerations:** Nations set **security protocols and ethical standards** for AI use.
  - **Strategic Autonomy:** Sovereign AI reduces reliance on **foreign technologies,** promoting domestic AI development.
  - **Economic Competitiveness:** AI is key to industrial innovation; without it, India risks falling behind globally.
  - **Various Applications:** Sovereign AI is used in critical sectors like **defense, healthcare, and transportation.**
- **India's Position: Tata Group and Reliance** are developing **AI infrastructure and Large Language Models (LLMs)** for India.
  - India allocated **USD 1.2 billion** for a sovereign AI project, including an **AI supercomputer** with thousands of chips under **IndiaAI Mission**.
- **Global AI Cooperation**: A proposed **Global AI Compact** suggests that **AI resources** should be shared across nations, ensuring **equitable access to critical technologies**.

2. Create meaningful short stories and songs
3. Disease diagnosis
4. Text-to-Speech Conversion
5. Wireless transmission of electrical energy

Select the correct answer using the code given below:

(a) 1, 2, 3 and 5 only

(b) 1, 3 and 4 only

(c) 2, 4 and 5 only

(d) 1, 2, 3, 4 and 5

Ans: (b)

PDF Refernece URL: https://www.drishtiias.com/printpdf/sovereign-ai