

BHARATGPT GROUP UNVEILS 'HANOOMAN'

Why in news?

- The BharatGPT group — led by IIT Bombay along with seven other elite Indian engineering institutes — announced that it would launch its first ChatGPT like service next month.
- The group built the 'Hanooman' series of Indic language models in collaboration with Seetha Mahalaxmi Healthcare (SML).
 - It is backed by Reliance Industries Ltd and the Department of Science and Technology.

Generative Pre-trained Transformers (GPTs)

- GPTs are a type of large language model (LLM) that use transformer neural networks to generate human-like text.
- GPTs are trained on large amounts of unlabelled text data from the internet, enabling them to understand and generate coherent and contextually relevant text.
- They can be fine-tuned for specific tasks like: Language generation, Sentiment analysis, Language modelling, Machine translation, Text classification.

What is ChatGPT?

- ChatGPT is a state-of-the-art natural language processing (NLP) model developed by OpenAI.
- It is a variant of the popular GPT-3 (Generative Pertained Transformer 3) model, which has been trained on a massive amount of text data to generate human-like responses to a given input.
- The answers provided by this chatbot are intended to be technical and free of jargon.
- It can provide responses that sound like human speech, enabling natural dialogue between the user and the virtual assistant.

Hanooman

- **Hanooman** is a series of large language models (LLMs) that can respond in 11 Indian languages like Hindi, Tamil, and Marathi.
 - However, there are plans to expand to more than 20 languages.
 - It has been designed to work in **four fields**, including health care, governance, financial services, and education.
 - **Not just a chatbot**
 - Notably, the series is not just a chatbot. It is a multimodal AI tool, which can generate text, speech, videos and more in multiple Indian languages.
 - One of the first customised versions is **VizzhyGPT**, an AI model fine-tuned for healthcare using reams of medical data.
 - The size of these AI models ranges from 1.5 billion to a whopping 40 billion parameters.
-

HOUSEHOLD CONSUMPTION EXPENDITURE SURVEY



For the first time in about 11 years, the government released the broad findings of the All India Household Consumption Expenditure Survey carried out between August 2022 and July 2023.

Household Consumption Expenditure Survey is usually conducted by the **National Statistical Office (NSO)** every five years.

- This survey aims at generating estimates of household **Monthly Per Capita Consumption Expenditure (MPCE)** and its distribution separately for the rural and urban sectors of the country, for States and Union Territories, and for different socio-economic groups.
- **Highlights of the survey**
 - The average monthly per capita consumption expenditure (MPCE) in Indian households **rose by 33.5% since 2011-12 in urban households to ₹3,510**, with rural India's MPCE seeing a **40.42% increase** over the same period to hit ₹2,008.

- The proportion of **spending on food has dropped** to 46.4% for rural households from 52.9% in 2011-12, while their urban peers spent just 39.2% of their overall monthly outgoes on food compared with 42.6% incurred 11 years earlier.
- This reduction could translate into a lower weightage for food prices in the country's retail inflation calculations.
- Among the States, the MPCE is the **highest in Sikkim for both rural (₹7,731) and urban areas (₹12,105).**
- It is the **lowest in Chhattisgarh**, where it was ₹2,466 for rural households and ₹4,483 for urban household members.
- **Significance:** The data will play a key role in reviewing critical economic indicators, including the Gross Domestic Product (GDP), poverty levels, and the Consumer Price Inflation (CPI).

INTERNATIONAL MOTHER LANGUAGE DAY

On International Mother Language Day, the Kalanidhi Division and Academic Unit of Indira Gandhi National Centre for the Arts (IGNCA) presents Akshar, Shabd and Bhasha, an exhibition celebrating and honouring the linguistic diversity of India, and exploring the richness of languages, scripts, and words that define our cultural heritage.



- It is observed globally **every year on February 21** to recognise and promote linguistic and cultural diversity and multilingualism.
- According to UNESCO, International Mother Language Day was **recognised on the initiative of Bangladesh** and has been observed throughout the world since the year 2000.
- The theme for 2024 is "**Multilingual education is a pillar of intergenerational learning**".
- **Significance**
 - According to UNESCO, globally 40 per cent of the population does not have access to an education in the language they speak or understand.

- So, as a commitment towards understanding the importance of the mother language or mother tongue, UNESCO decided to observe the day.
 - It underscores the role of **languages in promoting inclusion** and achieving Sustainable Development Goals.
 - **Issues:** Every two weeks a language disappears taking with it an entire cultural and intellectual heritage.
 - At least 45% of the estimated 7000 languages spoken in the world are endangered.
 - Only a few hundred languages have genuinely been given a place in education systems and the public domain, and less than a hundred are used in the digital world.
-

WHAT IS PSIFI SYSTEM?

In a significant technological breakthrough, scientists recently unveiled a pioneering technology, named PSiFI, capable of recognizing human emotions in real-time.



- The system, known as the **personalized skin-integrated facial interface (PSiFI)**, features a first-of-its-kind **bidirectional triboelectric strain and vibration sensor** that enables the **simultaneous sensing and integration of verbal and non-verbal expression data**.
- The PSiFI system is **self-powered, facile, stretchable, and transparent**.
- Coupled with a **sophisticated data processing circuit**, the system facilitates **seamless wireless data transfer**, enabling the **instantaneous recognition of emotions**.
- **Empowered by machine learning algorithms**, the technology showcases remarkable efficiency in **recognizing human emotions** accurately and promptly, even in scenarios **where individuals wear masks**.
- Its practical application has already been demonstrated in a digital concierge service within a virtual reality (VR) environment, where customised services based on users' emotions were provided.

Science behind the PSiFI technology:

- The technology is based on the **phenomenon of "friction charging,"** where objects separate into positive and negative charges upon friction.
 - Notably, the **system is self-generating, requiring no external power source** or complex measuring devices for data recognition.
 - This innovative technology is poised to revolutionize various industries, including next-generation wearable systems that provide services based on emotions.
-

WHAT IS SECTION 354 OF THE INDIAN PENAL CODE (IPC)?

The High Court of Jammu and Kashmir and Ladakh recently quashed the issuance of process by a trial court against a man for the commission of the offence under Section 354 of the IPC for allegedly slapping his wife in public.



- Section 354 of the IPC states that anyone who assaults or uses **criminal force against a woman with the intention of outraging her modesty**, or knowing that such an act is likely to outrage her modesty, **can be punished with imprisonment ranging from one to five years and may also be fined.**
- It has been enacted with a view to **protect a woman against indecent assault** as well as to **safeguard public morality** and decent behaviour.
- This section punishes an assault or use of criminal force on any woman with the intention or knowledge that the woman's modesty will be outraged.
- The **essential ingredients** of the offense under Section 354 of the IPC are as follows:
 - that the **person assaulted must be a woman**
 - that the **accused should have used some sort of criminal force** on her
 - Criminal force must have been **used to outrage her modesty**
 - There must be an **intention to do so**. It is the **section's substance**, where the choice of punishment and the legitimacy of the charges is evaluated.
- What constitutes an **'outrage to female modesty'** has not been defined anywhere under the IPC. It is rather **subject to the facts and circumstances** of each case.

- It does not encompass offences committed against men in the same manner.
 - The Criminal Law Amendment Act of 2013 introduced four additional subsections to Section 354 of IPC to broaden its scope. These are the following:
 - Section 354A: Sexual harassment and punishment for sexual harassment
 - Section 354B: Assault or use of criminal force to woman with intent to disrobe
 - Section 354C: Voyeurism
 - Section 354D: Stalking
-

FINANCIAL ACTION TASK FORCE (FATF)

- The Financial Action Task Force (FATF) is an intergovernmental organisation founded in 1989.
- It is an initiative of the G7 countries to develop policies to combat **money laundering**.
 - In 2001, its mandate was expanded to include **terrorism financing**.
 - It has also started dealing with **virtual currencies**.
- It sets international standards that aim to prevent these illegal activities and the harm they cause to society. It is a “policy-making body” which works to generate the political will to bring about national legislative and regulatory reforms in money laundering.
- It monitors progress in implementing its recommendations through "peer reviews" ("mutual evaluations") of member countries.
- The FATF Secretariat is located in **Paris**.

Objectives of FATF:

- FATF sets standards and promotes effective implementation of:
 - legal, regulatory and operational measures for combating money laundering.
 - The FATF works to identify national-level vulnerabilities with the aim of protecting the international financial system from misuse.

Members of FATF:

- The FATF currently comprises 38 member jurisdictions and two regional organisations, representing most major financial centres in all parts of the globe.
- India became an Observer at FATF in 2006. In 2010, India was taken in as the 34th country member of FATF.

What are FATF 'Grey List' and 'Black List'?

- FATF has 2 types of lists:
 - **Black List:**
 - Countries known as Non-Cooperative Countries or Territories (NCCTs) are put in the blacklist.
 - These countries support terror funding and money laundering activities.
 - The FATF revises the blacklist regularly, adding or deleting entries.
 - **Grey List:**
 - Countries that are considered safe haven for supporting terror funding and money laundering are put in the FATF grey list.
 - This inclusion serves as a warning to the country that it may enter the blacklist.
 - **Consequences of being in FATF Grey List:**
 - Economic sanctions from IMF, World Bank, ADB
 - Problem in getting loans from IMF, World Bank, ADB and other countries
 - Reduction in international trade
 - International boycott

SHAHPUR KANDI DAM PROJECT



In a significant development, the completion of the Shahpur Kandi barrage, situated at the Punjab-Jammu and Kashmir border, has effectively halted the flow of water from the River Ravi to Pakistan.

Shahpur Kandi Dam Project is located on the **Ravi River** in Pathankot district, Punjab, downstream from the existing **Ranjit Sagar Dam**.

- The water released by **Ranjit Sagar Dam** is utilized for generating power from this project.
- The main purpose behind the construction of this dam is **power generation and irrigation in Punjab and J&K States**.
- It is constructed by the **irrigation department of the Government of Punjab**.
- The project consists of a **55.5 m high concrete gravity dam**, a 7.70 km long hydel channel, two head regulators, and two powerhouses.
- The total output capacity of the project is **206 MW**.

Key Facts about Ravi River:

- It is a **trans-boundary river of India and Pakistan**.
- It is one of the **five tributaries of the Indus River** that give the Punjab (meaning “Five Rivers”) its name.
- **Origin:** It originates in the western Himalayas in the Multhan tehsil of the Kangra district of Himachal Pradesh.
- It then **flows through** the Indian state of **Punjab and enters Pakistan**, where it eventually **joins the Chenab River** in the province of Punjab.
- **Length:** The total length of the Ravi River is approximately **720 kilometers**(447 miles). **Around 158 kilometers** (98 miles) of the river's course **lie in India**, and the remaining 562 kilometers (349 miles) flow through Pakistan.
- It is also called '**The River of Lahore**' since that city is situated on its eastern bank.
- **Tributaries:** The Ravi River is fed by several tributaries, including the **Bhadal**, the **Ujh**, the **Tarnah**, and the **Basantar** rivers in **India**, and the **Aik**, the **Bara**, and the **Beas** rivers in **Pakistan**.
- **Indus Water Treaty of Ravi River:** The water of the rivers **Ravi, Beas, and Sutlej** is **allocated to India** under the Indus Water Treaty between India and Pakistan.

WHAT IS A FLOODPLAIN?



A floodplain is a generally **flat area of land next to a river** or stream.

- It is composed of **unconsolidated sedimentary deposits (alluvium)** and is subject to **periodic inundation** by the stream.
- It **stretches from the banks** of the river **to the outer edges of the valley**.
- A floodplain **consists of two parts**.
 - The first is the **main channel of the river** itself, **called the floodway**. Floodways can **sometimes be seasonal**, meaning the channel is dry for part of the year.
 - Beyond the floodway is the **flood fringe**. It is the land **between the banks of the floodway and the valley wall**, or anywhere the valley land starts to rise.

How do floodplains form?

Floodplains develop in two common ways: **erosion and deposition** (also known as **aggradation**).

- **When rivers start to meander**, curving from side to side, the **water erodes the banks** of the river and **creates a wide, flat area around the sides**.
- **When the river floods**, either because of heavy rainfall or ice melting upstream, **it floods its banks**.
- The **water that moves out of the floodway and into the fringes loses the force** that was **carrying much of the sediment** acquired from erosion upstream **and deposits it on the surrounding land**.
- **Floodplains are absent where downcutting of rivers is dominant**.
- **Importance:**
 - The deposition of sediment that happens in floodplains can be the source of major **fertility**.
 - This **sediment is usually built up of alluvium, or silt**, which is considered some of the **richest soil**, containing nutrients like potash, phosphoric acid, and lime.