ChatGPT Chatbot

For Prelims: Chatbot and Types, Artificial Intelligence.

For Mains: ChatGPT Chatbot, its usage and limitations.

Why in News?

Recently, OpenAI has introduced a new **chatbot** called **ChatGPT, which is** a 'conversational' AI and will answer queries just like a human would.

What is ChatGPT?

- **About:**
  - The ChatGPT can answer **"follow-up questions",** and can also "admit its mistakes, challenge incorrect premises, and **reject inappropriate requests."**
  - It is based on the **company's GPT 3.5 series of language learning models (LLM).**
    - GPT stands for Generative Pre-trained Transformer 3 and this is a kind of **computer language model that relies on deep learning techniques to produce human-like text** based on inputs.
  - The model is trained to predict what will come next, and **that's why one can technically have a 'conversation' with ChatGPT.**
  - The chatbot was also trained using **Reinforcement Learning from Human Feedback (RLHF).**
- **Usage:**
  - It can be used in **real-world applications** such as digital marketing, online content creation, answering customer service queries or as some users have found, even to help debug code.
  - The bot can respond to a large range of questions **while imitating human speaking styles.**
  - It is being seen as a replacement for the basic emails, party planning lists, CVs, and even college essays and homework.
  - It can also be used **to write code, as examples have shown.**
- **Limitations:**
  - The chatbot **displayed clear racial and sexist biases,** which remains a problem with almost all AI models.
  - The chatbot gives answers which are grammatically correct and read well– though some have pointed out that **these lack context and substance,** which is largely true.
  - ChatGPT occasionally produces inaccurate information and that **its knowledge is restricted to global events** that occurred before 2021.

What is a Chatbot?

- **About:**
  - Chatbots, also called chatterbots, is a form of **Artificial Intelligence (AI)** used in

messaging apps.
- This tool helps add convenience for customers—**they are automated programs that interact with customers like a human would** and cost little to nothing to engage with.
    - Key examples are **chatbots used by businesses in Facebook Messenger, or as virtual assistants,** such as Amazon's Alexa.
- Chatbots tend to operate in one of two ways—either via **machine learning or with set guidelines.**
- However, due to advancements in AI technology, chatbots using set guidelines are becoming a historical footnote.

- **Types:**
    - **Chatbot with Set Guidelines:**
        - It can only respond to a **set number of requests and vocabulary and is only as intelligent** as its programming code.
        - An example of **a limited bot is an automated banking bot** that asks the caller some questions to understand what the caller wants to do.
    - **Machine Learning Chatbot:**
        - A chatbot that functions through machine learning have an **[artificial neural network](#)** inspired by the neural nodes of the human brain.
        - The bot is programmed to self-learn as it is introduced to new dialogues and words.
        - In effect, as a **chatbot receives new voice or textual dialogues**, the number of inquiries that it can reply to and the accuracy of each response it gives increases.
            - Meta (as Facebook's parent company is now known) has a machine learning chatbot that creates a platform for companies to interact with their consumers through the Messenger application.

- **Advantages:**
    - Chatbots are convenient for **providing customer service and support 24 hours a day, 7** days a week.
    - They also free up phone lines and are far less expensive over the long run than hiring people to perform support.
    - Using AI and **natural language processing, chatbots are becoming better at understanding what customers want** and providing the help they need.
    - Companies also like chatbots because they can collect data about customer queries, response times, satisfaction, and so on.

- **Disadvantages:**
    - Even with natural language processing, they may **not fully comprehend a customer's input and may provide incoherent answers.**
    - Many chatbots are also limited in the scope of queries that they are able to respond to.
    - Chatbots can be **expensive to implement and maintain,** especially if they must be customized and updated often.
    - The challenges of AI metamorphosing **into sentient are far in the future; however, unethical AI perpetuating historical bias** and echoing hate speech are the real dangers to watch for.

UPSC Civil Services Examination, Previous Year Question (PYQ)

Q1. With the present state of development, Artificial Intelligence can effectively do which of the following? (2020)

1. Bring down electricity consumption in industrial units
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)

Q2. Consider the following pairs: (2018)

	Terms sometimes seen in news	Context/Topic
1.	Belle II experiment	Artificial Intelligence
2.	Blockchain technology	Digital/Cryptocurrency
3.	CRISPR–Cas9	Particle Physics

Which of the pairs given above is/are correctly matched?

(a) 1 and 3 only
(b) 2 only
(c) 2 and 3 only
(d) 1, 2 and 3

Ans: (b)

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