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1. Devin AI, the world's 'first fully autonomous' AI software engineer

Why in News?

US-based applied AI lab, Cognition, has introduced what it claims is the world's first AI software engineer. The makers say that the AI agent, named Devin, has passed practical engineering interviews held by leading AI companies. It has also completed real jobs posted on Upwork, an US-based freelancing platform, according to Cognition.



What can Devin do?

The AI agent comes with some advanced capabilities in software development, including coding, debugging, problem-solving, etc. Devin uses machine learning algorithms to constantly learn and improve its performance and adapt according to new challenges. In simple words, Devin can build and deploy apps end-to-end and can also train and fine-tune its own AI models.

Devin can plan and execute complex engineering tasks that would require thousands of decisions. This is possible owing to Cognition's advances in long-term reasoning and planning. According to the company, Devin can recall relevant context at each step, self-learn over time, and even fix mistakes.

Besides, the makers have also endowed the AI software engineer with the ability to proactively collaborate with the user. It reports progress in real-time, is capable of accepting feedback, and works along with the user through design choices as needed.

Relevance: GS Prelims

Source: The Indian Express

2. Why Karnataka has banned food colouring used in gobhi manchurian and cotton candy

Why in news?

The Karnataka government recently “banned” the use of harmful colouring agents in gobhi manchurian and cotton candy, with a violation attracting imprisonment of up to 7 years and fine of up to Rs 10 lakhs.

Consumption of snacks containing these artificial colours may pose long-term health risks, including cancer. Artificial colouring was found in 107 of the 171 gobhi manchurian samples tested by the state government, and in 15 of the 25 cotton candy samples tested. Based on these findings, an order has been issued banning the use of prohibited artificial colours, including Rhodamine B, in Gobi Manchurian and cotton candy.

What is Rhodamine B?

While the minister said that Karnataka was banning the use of the colouring agent Rhodamine B, it is not one of the permitted food colouring agents under the country's food safety regulation. It is a chemical colour used in dyeing clothes, paper, leather, printing, and plastics. It is used to give red and pink colours.



The dye is not fit for consumption and may lead to acute toxicity. Exposure to the chemical may also damage the eye and cause irritation in the respiratory tract. While the International Agency for Research on Cancer — the World Health Organisation body that maintains a list of cancer causing agents — says it cannot be classified as carcinogenic to humans, there are some studies on rats that have shown carcinogenic effects.

Is it frequently added to food products in India?

Not commonly. Rhodamine B is usually reported from small road-side vendors in small cities. This is because of a lack of understanding about dyes that are permissible in food items. Small vendors are not aware that this dye can be harmful as effects might not always be felt immediately. They might just go to a shop and ask for a red colour, not knowing what is given to him.

It is usually "illegally" added to preparations such as gobi manchurian, potato wedges, butter chicken, pomegranate juice, ice-creams produced in small scale, or cotton candies.

What are the food colours that are allowed by the food safety act?

The Food Safety and Standards Authority of India (FSSAI), the country's apex food safety regulator, allows the use of very few natural and synthetic colours in food items. There is also a restriction on which colours can be used in what type of food product.

Rhodamine B is a common red dye; it is even used in Holi colours. However, it is thought to be a carcinogen and its use is not permitted in food products. In fact, only about ten colours are allowed to be used in foods.

The natural food colours whose use is allowed includes carotene and carotenoids (yellow, orange), chlorophyll (green), riboflavin (yellow), caramel, Annatto (orange-red, derived from the seed of an American tree), saffron, and curcumin (yellow, from turmeric). The synthetic colours allowed include red from Ponceau 4R, Carmoisine, and Erythrosine; yellow from Tartrazine and Sunset Yellow FCF, blue from Indigo Carmine and Brilliant Blue FCF, and green from: Fast Green FCF.

Even permissible food colourings, however, are not allowed in all food items. Some food items that can use these colours include ice creams, biscuits, cakes, confectionaries, fruit syrups and crushes, custard powder, jelly crystals, and carbonated or noncarbonated beverages.

Relevance: GS Prelims & Mains Paper III; Science & Technology

Source: The Hindu

3. Rules for The Citizenship Amendment Act (CAA)

Why in News?

The Centre on March 11 notified Rules for The Citizenship Amendment Act (CAA), paving the way for the implementation of the controversial law more than four years after it was passed by Parliament in December 2019.

The CAA will benefit thousands of Hindu, Sikh, Buddhist, Jain, Parsi, or Christian migrants from Pakistan, Bangladesh, and Afghanistan who entered India before December 31, 2014, and seek citizenship of India. This group of people has been living in India illegally or on long-term visas (LTV).

What information must the intended beneficiaries of the CAA provide?

The CAA aims to give citizenship to the target group of migrants even if they do not have valid travel documents as mandated in The Citizenship Act, 1955. The CAA presumes that members

of these communities who entered India faced religious persecution in these countries. The law has also cut the period of citizenship by naturalisation from 11 years to five.

Under the CAA Rules, immigrants from these countries are only supposed to prove the country of their origin, their religion, the date of their entry into India, and the knowledge of an Indian language to apply for Indian citizenship.



What proof is required to establish the country of origin under CAA?

The rules have been relaxed very significantly. The earlier essential requirement of a valid passport issued by Pakistan, Bangladesh, or Afghanistan,

along with a copy of a valid Residential Permit of India, has been virtually done away with.

According to the CAA Rules, a birth or educational institution certificate, "Identity Document of any kind", "Any License or Certificate", "Land or tenancy records", or "Any other document" issued by these countries, which proves the applicant was their citizen, would serve as proof of citizenship of these countries.

Any document that shows that "either of the parents or grandparents or great grandparents of the applicant is or had been a citizen of one of the three countries" is also acceptable.

Importantly, these documents will be admissible even beyond their validity period. Sources said these documents can also be used to establish the religion of the applicant.

The requirement of a certificate from an educational institution, certifying that the applicant knows one of the languages mentioned in the Eighth Schedule of the Constitution, has also been done away with. Now, merely a declaration to that effect, and the ability to speak the language, will be enough.

And how will the date of entry into India be established?

The Rules list 20 documents, any of which would be admissible as proof of date of entry into India.

These include a valid visa or residential permit issued by the Foreigners' Regional Registration Office (FRRO); slip issued by census enumerators in India; a driving licence, Aadhaar, ration card, or any letter issued by the government or a court; an Indian birth certificate; land or tenancy records; registered rent agreement; PAN card issuance document, or a document

issued by the central or a state government, PSU, or bank; certificate issued by an elected member of any rural or urban body or officer thereof, or a revenue officer; a post office account; an insurance policy; utility bills; court or tribunal records; EPF documents; school leaving certificate or academic certificate; a municipality trade license; or a marriage certificate. Earlier, a visa along with certain other documents was an essential requirement.

Who will be in charge of processing the applications for citizenship?

Opposition-ruled states including Kerala and West Bengal have said they will not implement the CAA. Under the Rules, however, the Centre has tweaked the process of grant of citizenship to non-Muslim migrants from the three countries in such a way that states will have little say in the matter.

Thus, while citizenship applications were earlier made to the district collector — who is under the administrative control of the state government — the new Rules provide for an Empowered Committee and a District Level Committee (DLC), to be instituted by the Centre, to receive and process the applications, which are to be submitted electronically.

Applications will be made to the DLC, and the final decision will be taken by the Empowered Committee.

The Empowered Committee will be headed by a Director (Census Operations), and will have as its members an officer of the Subsidiary Intelligence Bureau (under the Ministry of Home Affairs) of the rank of deputy secretary or above, the FRRO, the State Informatics Officer of the National Informatics Centre (under the Ministry of Electronics & Information Technology), and the Postmaster General (under the Union Ministry of Communications) of the state. A representative each from the state home department and the Railways will be invitees to the Committee.

The DLC shall consist of the District Informatics Officer or District Informatics Assistant of the concerned district, and a nominee of the central government. The two invitees to the committee will be a representative of the district collector's office not below the rank of Naib Tehsildar or equivalent, and the jurisdictional station master of the Railways (subject to availability).

Relevance: GS Prelims & Mains Paper II; Governance

Source: The Indian Express