

Cryptocurrency

Why is Latin America's crypto economy so significant?

- Countries like Argentina, Chile, and Columbia have experienced devaluation of their currency against the U.S. dollar.
- To preserve the value of their savings, some residents have explored converting their funds to U.S. dollars.
- However, there are legal restrictions controlling this. Others have chosen to convert their assets to stable coins cryptocurrencies designed to reflect the value of fiat currencies such as the U.S. dollar.
- Brazil, Argentina, Colombia, and Ecuador are among the top 20 in Chain Lysis' 2022 Global Crypto Adoption Index.
- Separately, a number of central banks in the Latin American market are considering CBDCs, (central bank digital currencies (CBDCs) meaning that more people could soon be exposed to blockchain-based infrastructure.

Why does El Salvador stand out among crypto economies?

- El Salvador is the first country in the world to adopt Bitcoin the largest cryptocurrency by market capitalization as its legal tender.

- The country with a population of 6.5 million adopted Bitcoin on September 7, 2021, under the leadership of President Nayib Bukele, who is an ardent crypto supporter.
- He has since bought over 2,000 BTC and continued to buy even as the crypto market suffered crashes, joking about getting the asset for cheap.
- El Salvador uses a digital wallet known as Chivo to regulate users' crypto transactions. However, there have been complaints
- How did the IMF react to El Salvador's Bitcoin adoption?
- The IMF said it was against El Salvador's move, citing fiscal risks and consumer protection issues.
- According to its statement, IMF's executive directors "urged the authorities to narrow the scope of the Bitcoin law by removing Bitcoin's legal tender status

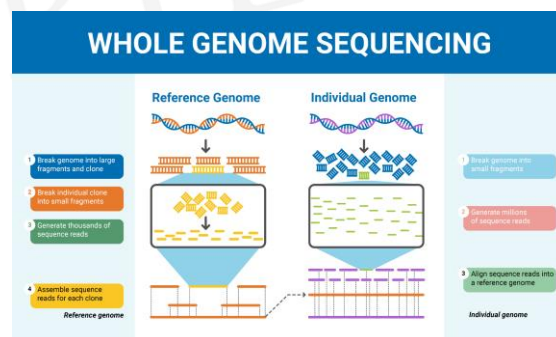
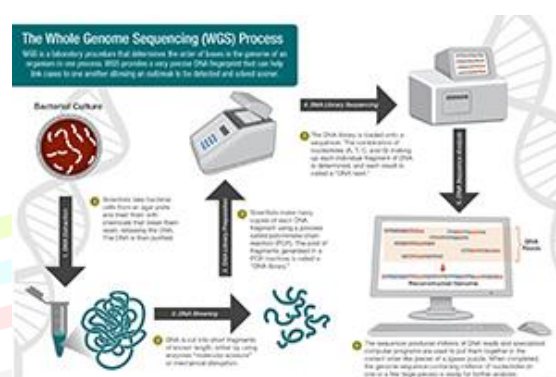
What is the difference between cryptocurrency and CBDCs?

- Cryptocurrencies and CBDCs are both blockchain-based digital currencies.
- However, while cryptocurrencies are generally run by private companies or individuals, a CBDC is controlled and tracked by a country's central bank and corresponds to that

country's fiat currency.

- Bitcoin's price may vary by hundreds or even thousands of dollars in a short period of time, and its founder is a mystery.
- On the other hand, a CBDC such as the naira, issued by the Central Bank of Nigeria, would (ideally) be worth as much as its physical counterpart.
- While investors often buy large quantities of Bitcoin or other cryptocurrencies and hold them in the hope of making a profit, this doesn't make sense in the case of CBDCs as they are not meant to be investment vehicles.
- China's government, meanwhile, has energetically promoted its digital renminbi (arm).

- However, population- scale genome -sequencing efforts have provided insights into the prevalence of many of these diseases in an unbiased manner
- With technological advances, including better AI-based tools to assist clinical decisions, rapid sequencing is likely to become a diagnostic mainstay for unwell infants in clinic



THE HINDU

Genome sequencing

- There are 6,000 or so genetic diseases, of which around 3,500 diseases have been documented, and a much smaller number have had their molecular and/or genetic defects mapped.

Why is it important?

- The rarity of many genetic diseases, the narrow window of opportunity, the long diagnostic paths, and the unfortunate deaths of ill babies makes it very difficult to document and understand these diseases.

Ethics and hope

- Newborn whole genome sequencing presents multiple ethical challenges.
- First: the issue of disclosing and managing incidental and secondary findings raises concerns about privacy and the psychological impact on families.
- Updated recommendations by the

American College of Medical Genetics and Genomics regarding secondary findings could help deal with incidental findings.

- The equitable distribution of benefits and burdens associated with accessing and utilizing this technology also invoke issues of justice and fairness

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OSMOSIS

- Ocean currents, subatomic particles, and galaxies almost everything is moving from one place to another.
- There are different kinds of movement, with different purposes.
- One type of movement is osmosis, where a fluid moves from a place of higher concentration to a lower concentration through a semipermeable membrane.
- For example, you fill a container with a concentrated sugar solution on one side and a diluted sugar solution on the other of a semipermeable membrane.
- Water molecules will travel from the diluted solution to the concentrated one through the membrane until the concentration of water is equal on both sides. This is osmosis.
- A German plant physiologist named Wilhelm Pfeffer first thoroughly studied osmosis in 1877,

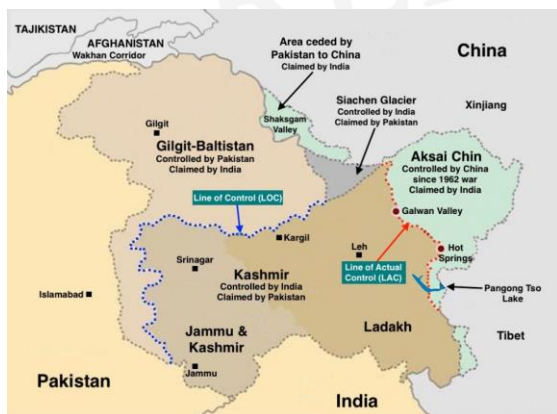
- This process is incredibly important in biology, where liquids move from one part of an organism to another through cellular membranes that are semi-permeable.
- In trees, osmosis is part of a pumping system that transports water and nutrients up from the roots to the leaves.
- You can observe osmosis in many real-life scenarios, such as in the swelling of raisins or other seeds when they are soaked in water, and in the pruning or wrinkling of your fingers after taking a long bath.

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E free speech

- Section 69A of the Information Technology Act, 2000, empowers the state to issue blocking orders in cases of emergency on the grounds such as “sovereignty and integrity of India, defense of India, and security of the State, friendly relations with foreign States, public order or for preventing incitement to the commission of any cognizable offense relating to the above”.
- The Information Technology (Procedure and Safeguards for Blocking for Access of Information by Public) Rules, 2009 (Blocking Rules) lays down the procedure for any blocking order issued under Section 69A.

- This provision's constitutionality was challenged in *Shreya Singhal vs Union of India*, where the Supreme Court of India upheld the validity of Section 69A and the Blocking Rules after observing that sufficient procedural safeguards were embedded, such as the provision of recording a reasoned order and providing notice to the intermediary and the originator whose content was sought to be blocked
- Misinformation and fake news are not grounds under which free speech can be restricted under Article 19(2) and Section 69A.
- The Supreme Court has repeatedly held that for speech to be prejudicial to the maintenance of public order, there must be a direct link between the speech and the potential threat to public order.



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Crowdsource data and Disaster

- Crowdsourced data collection is a participatory method of building a dataset with the help of a large

group of people.

- This page provides a brief overview of crowdsourced data collection in development and highlights points to consider when crowdsourcing data. Crowdsourced Data is a form of secondary data.
- team of researchers led by IIT Bombay has found a way to achieve this they turned to Twitter to crowdsource data to identify in real-time areas that are water logged after heavy rainfall

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Phosphorus

- Scientists have discovered new evidence that the subsurface ocean of Saturn's moon Enceladus contains a key building block for life.
- The team directly detected phosphorus in the form of phosphates originating from the moon's ice-covered global ocean using data from NASA's Cassini mission.
- The Cassini spacecraft discovered Enceladus' subsurface liquid water and analyzed samples in a plume of ice grains and gases erupting into space from cracks in the moon's icy surface
- Phosphorus in the form of phosphates is vital for all life on earth.

- It is essential for the creation of DNA and RNA, energy-carrying molecules, cell membranes, bones, and teeth in people and animals, and even the sea's microbiome of plankton.
- Life as we know it is simply not possible without phosphates.

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Halla

- When our sun reaches the end of its life, it will expand to 100 times its current size, enveloping the Earth.
- Astronomers have now discovered a planet's survival after what should have been a certain demise at the hands of the sun.
- The Jupiter-like planet Halla orbits the red giant star Baekdu at only half the distance separating the earth and the sun.
- But Halla has managed to persist in the immediate vicinity of a giant star that would have otherwise engulfed it.

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Artemis accord

Why do the Accords matter?

- The Artemis program includes plans for a base on the lunar surface, multiple spacecraft to ferry humans and cargo, an orbiting space station, and a constellation of satellites to

help with navigation and communication.

- The first Artemis crewed mission to the moon's surface is likely in 2026. The program resembles a Chinese Russian plan for an 'International Lunar Research Station'.
- With Russia reeling under sanctions, China has taken the lead on the project, outlining similar plans for a permanent base and a lunar satellite constellation.
- For leaders in the U.S. and China, lunar exploration embodies all that is good about their countries even as they are locked in a bitter rivalry.
- Leaders are also betting that the incredible challenges of lunar exploration will spur technological innovation.
- A sign of power in international politics is the ability to set norms and build multinational collaborations.
- The Accords support an America-friendly interpretation of space law.
- In return, member states get to participate in the Artemis program, which can bring prestige and technological benefits.

What must India do?

- Signing the Artemis Accords alone has no financial implications for India but if the country wants to be a major player in the Artemis program,

ISRO will need a significant hike in its annual budget, which stands at about ₹12,500 crore this year.

- At present, ISRO's lunar exploration programme is impressive but modest
- India must overcome domestic resistance to collaboration with other space agencies, enable its private sector to work with other Artemis members, and develop legislation that encourages space activities.

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