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In This Issue.....

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Blockchain!A Technology that you can't miss in 2021

~~Blockchain is the technology that is empowering Bitcoin and other cryptocurrencies.~~
Let's unlearn the above line first and then start afresh.

Blockchain is a way to implement solutions and it has some advantages in few selected use cases. Implementing a solution with Blockchain provides

1. Trustless implementation
2. Immutability
3. Horizontal Scalability
4. Autonomy

Let's dive through it.
Ajay is studying abroad and his father wants to transfer him $100. Ajay's father has an account with Indian bank and Ajay is having his account in his college's bank.
Transaction happens then the local Indian bank reaches to the authority that governs all the cross border transactions then to the currency exchange authority.
Till now, atleast 3-4 different systems have been used. Like might be using a banking solution and then others might be using some SAP systems or some other specialized systems.Each time this transaction hits the system, a new transaction is getting initiated in that respective system.
Now the second part, once the amount hits abroad then the same reverse process comes into place and things happen. Again 3-4 different systems will take part into the transaction and process the same $100.
Not a problem.
Yes, but every extra step and every extra reconciliation comes at a specific cost. And also takes a few extra days.
So, after 5-10 days, Ajay gets $95 or so.
If your business use case requires any 3-4 out of below 6 features then Blockchain is the suitable candidate for you. If your business requires 2 or less features then you should not pick Blockchain as your solution methodology.
6 features are:

1. Are multiple parties sharing data among them?
2. Will multiple parties be updating the same data?

3. Is there a requirement of verification before accessing/updating the data?
4. Is verification/reconciliation adding extra cost in the process?
5. Are interactions time sensitive?
6. Will transactions by different users depend on each other?

Above checklist will help you in deciding whether Blockchain is the right technology or not for your use case.

What is Blockchain?

Blockchain is a distributed ledger technology where

1. Business logic is shared among parties.
2. Database is shared among parties.
3. Anyone, who is on the same blockchain application, can audit/validate the transactions.
4. PPK cryptographic certificates are used for identity validation.
5. Transaction ledger is immutable and being shared among all the stakeholders.
6. Ledger state and database state are synced between all the nodes and consensus algorithms helps in achieving that.

Let's understand it with an example:

Facebook runs distributed systems and stores our data on various replicated clusters. Same is followed by Twitter, Instagram, LinkedIn or any other social media application.

Just think about all coming together and maintaining a shared database of all user profiles. So, use update his profile on one social network and that synced among all the players instantly. No social media platform can change a profile data along since it requires proper permission and validation from all the participating organisations.

Above example is for a unique implementation where all the social media applications are maintaining user profiles over Blockchain.

I tried to capture Blockchain in brief and tried to keep it simple. If you are looking to discuss it more, then we can connect :

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Sonam Wangchuk Invented world's first Solar-Heated tent for Indian Army

Innovator and educationist Sonam Wangchuk, the real life Phunsukh Wangdu of Bollywood blockbuster "3 Idiots", has developed an eco-friendly solar heated tent that Army personnel can use in extremely cold places like Siachen and Galwan valley in the Ladakh region.

Mr Wangchuk, who has many environment friendly innovations to his name, said the solar heated military tent, besides saving on use of fossil fuel and its ill effects on environment, increases the safety of the military personnel.

"This tent uses the solar energy trapped during day time to keep the soldiers' sleeping chamber warm during night. Since there is no use of fossil fuel, it saves on money and also is emission free," he said.

The innovator said the temperature inside the sleeping chamber of the military tent can be increased or decreased by the corresponding increase or decrease in insulation layers.

"The sleeping chamber has four layers of insulation and it gave a temperature of 15 degrees Celsius at a time when outside temperature was minus 14 degrees Celsius. The number of layers can be reduced for warmer places," he added.

Mr Wangchuk said the temperature inside the tent should not be too cozy as the soldiers have to be ready to fight the enemy in the open where temperature can be as low as minus 30 degrees Celsius in places like Galwan valley.

While Mr Wangchuk extensively referred to last year's India-China stand off in Ladakh, he said he had made an earlier version of solar heated tent 15 years ago for shepherds who were engaged in rearing of Pashmina goats which produce high-quality Cashmere wool.

Referring to new prototype, Mr Wangchuk said the tent is portable and can accommodate 10 soldiers. "No component of the tent weighs more than 30 kg which makes it easily portable. The tent is disassembled into 30 to 40 components," he said. Wangchuk said the weight of components can be brought down to 20 kg each by using superlight aluminium material.

"That version will be more expensive that the current prototype," he said. He acknowledged the support provided by the Army in developing the solar-heated tent, saying "it has been designed keeping in mind the requirements of the Army".

The innovator said it took his team at Himalayan Institute of Alternatives Ladakh (HIAL) one month to make the prototype of the solar-heated tent. The tent has been designed keeping in mind the places like Siachen glacier and Black Top Hill, the 55-year-old innovator said.

Google launches Sleep API for low power sleep tracking on Android phones

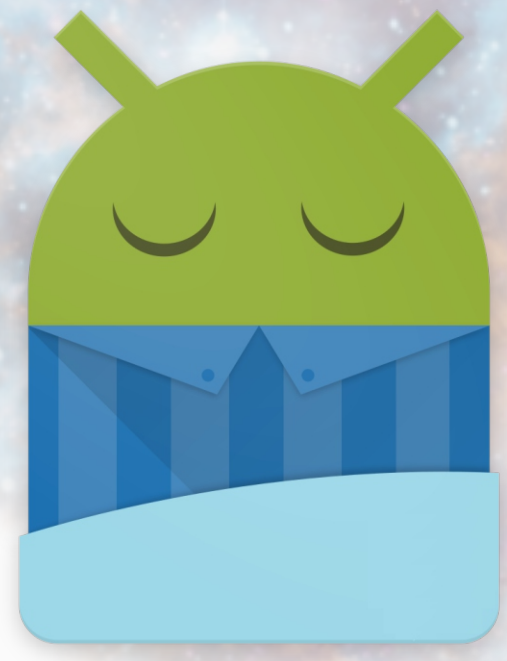
Tracking your sleeping patterns with wearable devices can be easy and convenient, but not much can be said about tracking your sleep on Android smartphones as it can drain your battery life. Well, that is about to change with Google Sleep API.

Tech giant Google has announced that it is making its Sleep API publicly available. The company says it is an Android Activity Recognition API that surfaces information about the user's sleep. It can also be used to power features like the Bedtime mode clock. The API also uses an on-device artificial intelligence model that uses the device's light and motion sensors as inputs.

Google Sleep API will allow sleep tracking apps on Android smartphones by using less power to detect sleep pattern. It is the Activity Recognition APIs which, with the user's permission can detect user's activities such as whether a user is biking or walking. For this Google collaborated with Urbandroid, the developer of the popular alarm app " Sleep As Android " .

After getting user's permission this api uses an on-device artificial intelligence model which records input data, like the usage of screen and movement of device , from the device's light and motion sensors . The data is reported at a regular interval in the background.

If a user has multiple apps they will independently and continuously check for changes in user activity leading to more battery usage. Since the Sleep API will come built in the Google Play Services, users won't be needing additional sleep-tracking apps to run in the background and get their sleep data. With centralised processing the phone's battery will not suffer.



Android 12 could be named Snow Cone

Snow cone may be the name of Android 12 , It come with features like smarter auto-rotation, reduce bright colours feature, one-handed mode and gaming mode Android 12 will be the next iteration of Android from Google and is expected to launch this year.

According to news Android 12 could come with a new face-based option for auto-rotate. Android's auto-rotate doesn't always work like you want it to. The smarter auto-rotate could use front camera of your phone to see the orientation your head is and rotate the display accordingly. This would be especially useful for those who use their phones while lying down.

Google will provide one-handed mode for Android 12 and that users will be able to activate one-handed mode with a gesture. This one-handed mode is expected to see downsizing only along the vertical axis, bringing options that are too high up to reach closer and users may be able to set a timeout period that will automatically disable one-handed mode.

People also saying Android 12 will have a new "GameManager service." This would likely enable when a game is started and manage settings like automatic brightness, auto-rotation, Do Not Disturb mode etc.

Jaguar to Go All-Electric by 2039 , Future Models to Be Built Exclusively on Pure-Electric Architecture

Jaguar Land Rover (JLR) unveiled plans to go electric on Monday, saying it aims to be net zero on carbon emissions by 2039 as it joined a global race to roll out clean-energy vehicles. The Tata Moters-owned group's strategy - internally referred to as "Reimagine" - comes as car groups worldwide accelerate moves towards fleets powered by electric and other green technologies.

Land Rover will add six pure electric variants in the next five years and future Jaguar models will be built exclusively on a pure electric architecture, JLR said, adding, that the first all-electric variant of Land Rover will debut in 2024.

Last month, General Moters said it aimed for all new cars, SUVs, and light pickup trucks to have zero-tailpipe emissions by 2035, a dramatic shift by the largest US. automaker away from gasoline and diesel engines. By 2030, it is anticipated that 100 percent of Jaguar cars, and 60 percent of Land Rovers, will be equipped with zero-tailpipe powertrains, JLR said.

In other electric cars-related news, Elon Musk'sTesla will set up a manufacturing plant in Karnataka, as per Chief Minister B. S. Yediyurappa.

"American firm Tesla will set up the car-manufacturing unit in Karnataka," Yediyurappa said.

In 2021-22, infrastructure development at a cost of Rs. 1.16 crore would take place in the state and Rs. 14,788 crore would be released for the second phase of the Metro Rail work.

The Chief Minister said an industrial corridor would be developed in Tumakuru at an investment of Rs. 7,725 crore creating 2.8 lakh jobs. Hailing the Union Budget presented recently as historic, Yediyurappa said it would pave the way for a $5 trillion (roughly Rs. 360 lakh crore) economy by 2025.

Earlier in January, Tesla incorporation papers surfaced online and the listing of the board of directors mentions two senior Tesla executives. The company, titled Tesla India Motors And Energy Private Limited, was registered last week in Karnataka, with an address on Bengaluru's Lavelle Road.

JAGUAR

Isro join hands with MapmyIndia to build indigenous mapping portal

A great step towards the journey of Aatmanirbhar Bharat Indian Space Research Organisation and location and navigation technology solutions provider MapmyIndia come together to offer fully indigenous, mapping portal . According to ISRO, the Department of Space (DoS) - ISRO comes under it - has joined hands with MapmyIndia to combine their geospatial expertise and build holistic solutions by leveraging their geoportals.

This ISRO and MapmyIndia colaboration jointly identify and build holistic geospatial solutions utilising the earth observation datasets, NavIC, Web Services, and APIs available in MapmyIndia, Bhuvan, VEDAS, and MOSDAC geoportals.

Indian Regional Navigation Satellite System (IRNSS) called NavIC (Navigation with Indian Constellation, is India's own navigation system, developed by ISRO. Bhuvan is the national geo-portal developed and hosted by ISRO comprising geospatial data, services and tools for analysis.

VEDAS (Visualisation of Earth observation Data and Archival System) is an online geoprocessing platform using optical, microwave, thermal, and hyperspectral EO data covering applications particularly meant for academia, research and problem solving, according to ISRO.

MOSDAC (Meteorological and Oceanographic Satellite Data Archival Centre) is a data repository for all the meteorological missions of ISRO and deals with weather related information, oceanography and tropical water cycles.

Matrix'-Style Bracelets by convert body heat of humans into energy

Echoing world-domineering robots' use of enslaved humans in the 1999 cyberpunk movie, US researchers at the University of Colorado Boulder have created an environmentally-friendly gadget that harvests body heat and converts it into energy.

Tech-lovers could power their own watches or fitness trackers by wearing a stretchy ring or bracelet containing thermoelectric chips that convert heat into electrical energy, according to research published in the journal Science Advances

The idea will sound familiar to lovers of the iconic film, starring Keanu Reeves, where humans are trapped in the Matrix, a simulated reality, while hooked up to machines to provide electrical power for robots that have taken over the world.

"(Thermoelectric devices) can provide continuous power to wearable devices and could potentially replace batteries in the future," said the paper's senior author, Jianliang Xiao, told the Thomson Reuters Foundation in emailed comments.

"We hope this technology could, at least partially, solve the pollution problems of electronic waste," he said, adding the tool is fully recyclable.

The devices generate about 1 volt of energy per square centimetre of skin covered. While more research is needed to increase the amount of power produced and allow for mass production, the gadgets could be on sale in five to 10 years, Xiao said.

“Just don't tell the robots," the university said in a statement. "We don't want them getting any ideas."

Kerbside collections for e-waste could be introduced UK-wide

The government is considering rolling out kerbside collections for electronic waste (e-waste) nationwide or forcing online retailers to collect it from homes as a way to balance their obligations with those of physical stores.

In December 2020, a study found that Britons produce the second-largest amount of e-waste per person in Europe, yet the vast majority of it ends up in landfill despite the abundance of rare earth metals and other valuable materials such as gold that can be gleaned from them. Following pressure from the Environmental Audit Committee (EAC), formed from a group of MPs, the government said it was considering stronger measures to boost e-waste recycling, including kerbside collections.

Under current rules, physical retailers of electronics are obliged to accept and recycle e-waste from their customers, regardless of whether it was purchased from them or not. Yet online retailers such as eBay and Amazon are exempt from these rules, despite being major sellers of electronics for millions of consumers.

New proposals that could also be introduced within the Environment Bill include measures to improve consumer awareness of the repairability and recyclability of electronics, as well as mandating that companies label products with what components are recycled and how repairable the item is.

However, the EAC expressed disappointment at the government's decision to reject its recommendation to reduce VAT on repair services. The government argued that any resultant loss in tax revenue would have to be balanced elsewhere.

Philip Dunne MP, EAC committee chairman, said he was “pleased” to see recognition from ministers that efforts were needed to make e-recycling easier.“Levelling the playing field for online giants and physical retailers in the take-back of e-waste is important if we are to cut down on the amount of e-waste disposed of incorrectly. “We need to make urgent improvements to the reuse and recycling of such products and I am pleased that the government has recognised the role online retailers and marketplaces should play in taking increased responsibility for the e-waste streams they help generate.

“It is also reassuring that the Environment Bill could pave the way for better labelling on the recyclability of products and informing consumers what components have been recycled.

“As the Bill's passage through Parliament has been delayed, it may be some time until we see products on shelves giving this detail. It is important that the government keeps up the pace towards this goal.”

The government also rejected a recommendation for targets on the recovery of critical raw materials and retaining value from old electronics. In January 2020, researchers unveiled a new recycling process for printed circuit boards which should reduce their impact on the environment.

Smartphone app helps eye patients monitor vision remotely

The UK's leading eye hospital has piloted a smartphone-based app that allows patients to remotely test and monitor changes in their vision at home during lockdown.

Designed specifically for people with diseases that affect the macula, including neovascular age-related macular degeneration (AMD) and diabetes, Home Vision Monitor ensures patients can continue to have their vision monitored, whilst in the comfort of their home. It is currently being tested by more than 350 patients at Moorfields Eye Hospital in London.

The app uses a 'shape discrimination' test where multiple shapes are displayed on a screen with one shape, the target shape, being different from the others. Patients are asked to test their own vision at least twice a week, by selecting the different shapes, with results sent directly and instantly from the app to their clinician at the hospital.

If both tests show any deterioration or discrepancies in the patient's eye health, an alert is automatically triggered to their clinician. This enables the clinician to decide on the correct course of action, helping them intervene at an early stage of disease progression and providing patients with the possibility of a better outcome.

The hospital conducted a survey on the users and found that 93 per cent of patients found the app easy to use. Meanwhile, 70 per cent claimed it offered them reassurance to know their vision is being monitored regularly during the coronavirus pandemic. In normal circumstances, patients would attend in-person appointments every four to 12 weeks to check for any changes in vision.

“Exciting new digital technologies, such as Home Vision Monitor, will further empower our patients to actively contribute to the management of their condition, in partnership with their clinicians to achieve the best possible outcomes,” said consultant ophthalmic surgeon Konstantinos Balaskas. “Placing such tools in the hands of patients will both improve health outcomes for patients and reduce the capacity pressures of hospital-based eye departments.”

Jill Hopkins, global head of ophthalmology at healthcare firm Roche, which helped develop the app, said: “Supporting such a high-risk group is essential during these extraordinary times. By testing patients' vision more frequently and at home, the app may eliminate unnecessary hospital visits and escalate urgent cases where needed.”

“We believe that solutions such as these can continue to support patients and healthcare professionals beyond Covid-19 and contribute to the generation of real-world evidence to identify progression trends in AMD,” she added. A large-scale study conducted in July last year found that an AI tool performs very accurately when detecting serious eye disease among patients with diabetes, potentially halving the human workload associated with this process.