eNEWS-5

CryptX Club

Jayshree Periwal High School

CryptX

This issue covers –

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The Battle Against Stores

Subham Jalan

Fortnite, one of the most famous games ever made, had launched on Android and iOS devices after its success on Windows and Mac platforms. If you publish an app on the App Store on iOS or the Play Store on Android, you will have to pay 30% of your income through purchases to the respective platforms in the name of "operating fees". However, Epic Games, the company behind Fortnite, published their game indirectly using their client on Android, even though they eventually had to switch to Play Store to attract more users.

It was all fine until the game launched a direct in-app purchase system that did not use the App Store or Play Store for processing the purchase and got rid of paying the 30% tax to each company. This was called a violation of policies and both stores removed the game from each platform. However, as soon as Apple did it, Epic Games came up with a lawsuit against each company demanding removal of the commission system. The lawsuit against Apple is bigger news, because Apple is threatening to ban Epic Games if they don't start following their policies within 2 weeks, and also, Google is a lenient company. Unreal Engine, a game making tool developed by Epic Games, will not be able to use any of Apple's tools after the ban which will be a major issue for game developers. The funny thing is that now there are several iPhones with Fortnite installed for sale on eBay since you can't install it for the time being.

Both tech giants are being accused of dominating the platforms without allowing any freedom to developers and now it is all in front of US Congress. Recently, Congress had an antitrust hearing with CEOs of Google, Facebook, Apple, and Amazon where these brands were warned of being too powerful. Epic Games has a chance of winning this one since The Congress might not listen to Tim Cook anymore.

The Joy of Flight

Jasraj Johal

This week, the beloved series has been resurrected. It's not just aviation fanatics who are frothing over it but the video game industry as a whole. Speaking as someone who can fly a plane, it's not baseless hype. I can't stop showing people videos of in-game footage. Dawn sunshine glints off snowy mountain peaks, coral reefs are visible in azure waters near tropical islands, cities shimmer with electric light at nighttime. I mean, LOOK. AT. THESE. CLOUDS. Don't get me started on how realistically rain splatters the windscreen. What's even more spectacular is that the world in this game doesn't just appear real – much of it is real. Using satellite images and photogrammetry, the team has made a true representation of the earth, so accurate that you can probably find your home. It uses Bing Maps to stream more than 2PB of data to reach a new level of realism, accuracy, and authenticity.

Microsoft Flight Simulator needs high-end hardware to look its best. When new flight simulators are released, the hardware to run them at max settings and performance does not even exist yet. This creates a situation of constant hardware demand over the life of the title as fans chase the best experience. And it's notable that Microsoft and developer Asobo Studio built Flight Simulator with long-term support in mind. So fans can feel good about making investments into expensive hardware. Currently, its priced at 3,999.

QUBIT

Quantum Computing and Its Applications

Jeev Jatin Singh

It has fuelled prosperity for the last 5 decades. But now, the end is near. Moore's Law is coming to an end. Moore's Law implies that computers, machines that run on computers, and computing power all become smaller, faster, and cheaper with time, as transistors on integrated circuits become more efficient. As transistors become smaller and smaller, they enter the realm of Quantum Physics. A transistor is an on or off switch. It either lets electrons pass through or stops their flow. However, when the transistors reach the scale of Quantum Objects, electrons can transfer themselves to the other side of the transistor via a process called quantum tunneling. Cue Quantum Computers.

The fundamental difference between Quantum and Classical Computers is that quantum computers use qubits, which are like bits, except they utilize quantum phenomena like superposition and entanglement, giving them an edge over their classical counterparts. They use superposition to reduce the number of steps needed to solve a problem, and entanglement helps them affect multiple qubits instantaneously.

Quantum Computing has vast applications, the most infamous of all being destroying internet security. Almost everything we browse today is encrypted.

One of the most effective encryption standards is RSA 2048. In cryptography, you choose a private key and a public key. Anybody with the public key can send encrypted information, but only someone with the private key can decrypt it unless someone can solve a very hard math problem. In the case of RSA, it is factoring very large numbers, something that is estimated to take 300 trillion years for classical computers. A quantum computer with 20 million qubits would be able to do this in 8 hours. The good news is that we are nowhere close to such a computer.

While quantum computers have the potential to revolutionize the world, they face quite a few challenges before we get there. The most prominent of all being something called "decoherence", a process in which the environment interacts with the qubits, changing their quantum states and causing information stored by the quantum computer to be lost. While researchers have made some progress, a breakthrough is probably a few years away.

In 2019, IBM launched IBM Q, a cloud-based software that allows users to program real quantum systems. In the same year, Volkswagen demonstrated the world's first live use of quantum computing to help optimize traffic routing. Governments all over the world are investing heavily in this sector.

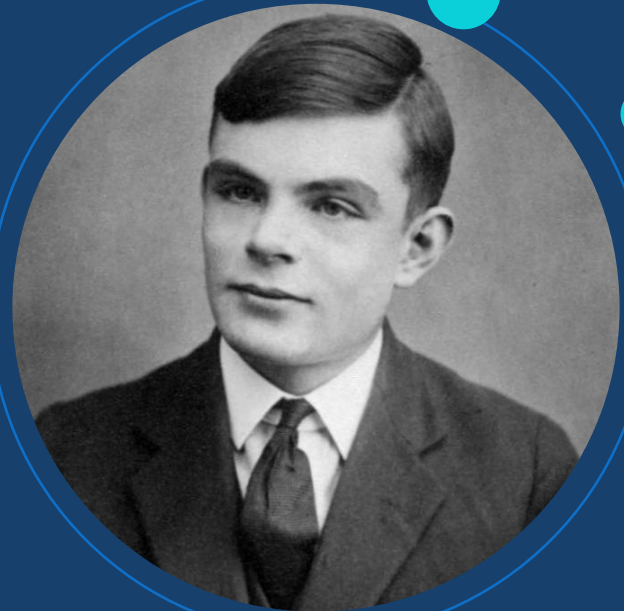The era of quantum computing is here.

The Codebreaker
Milind Sharma

Alan Mathison Turing, born on 23 June 1912 in Maida Vale, London, England was an English mathematician, computer scientist, logician, cryptanalyst, philosopher, and theoretical biologist. Turing was highly influential in the development of theoretical computer science, providing a formalization of the concepts of algorithm and computation with the Turing machine, which can be considered a model of a general-purpose computer.

Turing went to St Michael's, Hazelhurst Preparatory and Sherborne for his schooling. After his schooling, Turing studied as an undergraduate from 1931 to 1934 at King's College, Cambridge, where he was awarded first-class honours in mathematics. In June 1938, he obtained his PhD from the Department of Mathematics at Princeton; his dissertation, Systems of Logic Based on Ordinals. After his studies, Turing worked as a Cryptologist at Bletchley Park and Hut 8 for the British Government Code and Cypher School (GC&CS), his main focus being breaking the German Enigma Code. He successfully made extraordinary advances in a machine called the "Bombe" which allowed the British to break the German code in around 15 minutes. This was simply an extraordinary feat as the Enigma code had 158,962,555,217,826,360,000 different settings (nearly 159 quintillion or about 67 bits), it is also said that Turing and his team's work helped the war shorten by 2 years saving more than 10 million lives.

Turing is widely regarded as the Father of computer science due to his works in early computing, such as the "Turing Machine". A Turing machine is a general example of a central processing unit (CPU) that controls all data manipulation done by a computer, with the canonical machine using sequential memory to store data. He was also one of the first humans to envision A.I. and how it can actually help humankind to make advancements in future. "The Imitation Game" is a movie made on him as well. It will be not wrong to say that, without Turing and his extraordinary work we would not have the "Computer" as we call it now.

"A computer would deserve to be called intelligent if it could deceive a human into believing that it was a human."

"Science is a differential equation. Religion is a boundary condition."

"Those who can imagine anything, can create the impossible."

"We can only see a short distance ahead, but we can see plenty there that needs to be done."

Apex Legends: Season 6

Naman Keswani

Apex Legends is a free to play battle royale game that was made by Respawn Entertainment, the company that gave us the Titanfall series. This game was released in 2019 and there was much hype around it. Many critics said that it was the fastest battle royale game ever made. The graphics were seamlessly good and the aesthetics of the game were uniquely designed. The game is a class-based first-person shooter in the form of a battle royale.

Its launch was a big success, but the hype was lost after some months of the game's release. However, Respawn did a great comeback in increasing the game's popularity in the season 5. It was the most highly anticipated season in the game and the new map design with a new legend was enough to attract more and more people towards the game. Respawn also added a new game mode called Quest. These quests were actually a good addition to the playable game modes in Apex Legends. The quests not only gave the players a fun time but also helped the game to have a lore. Apex Legends is so far the only battle royale game that follows a lore.

While this game was gaining more and more popularity, other games from this genre like Fortnite and Pubg were seeing a decline in their players online. On 18th August 2020, season 6 of the game was out. This season is completely different. It has new things like banner poses, banner frames, new intro and kill quips, holographic stickers and another new legend. Apex also introduced map changes for the second time which makes the gameplay more versatile and interesting. And with an all new ranked system for higher competitive gameplay, players can now have a good time online.

CIY - Code it yourself
- How to count the occurrence of a given character in a String?
- How do you find the second highest number in an integer array?
- In an array of 1-100, exactly one number is duplicate. How do you find it?

Apple does it. Again.

Subham Jalan

Apple has become the first US company to hit the $2 trillion mark, just 2 years after it hit the $1 trillion mark. This means that now Apple is the most valuable company in the world and all thanks to Silicon Valley. The company's shares crossed the $467.77 mark which gave it the $2 trillion valuations. This is greater than the GDPs of some countries. It is surprising how Apple's stock prices had dropped significantly just after they announced the iPhone XS in 2018 and they have risen back up while the pandemic is affecting the world's economy. How did this happen, though? Well, turns out that Apple is doing fantastically good at everything they lay their hands on. The iPhone, always been a best seller, has taken back its place in the smartphone market after having a bad year with the iPhone XS. In the quarter ending in June, revenue from iPad was up 31% compared to last year. Their Apple Watch is the best selling smartwatch in the world, which was predicted would happen after WearOS "died". Apple dominates the TWS market and it is estimated that it may sell over 100 million AirPods by the end of next year. The Mac is selling well this year after giving users a bad experience previous year because of the keyboard and thermal issues. Last but the most important, is their services business, including App Store, Apple Music, Apple Care, and others, and not to forget, the new services like Apple Arcade and Apple TV+ they launched in 2019. As it seems, Apple is doing great and the future looks bright for them. However, we have to see how the App Store revenue works out for them after the lawsuit Epic Stores has charged them with.

The King of Headphones
Jasraj Johal

Sony has returned with the new $349.99 1000XM4 headphones, (available for preorder now) which are Sony's best noise-canceling capabilities yet with improved voice quality and support for two simultaneous Bluetooth connections. The first is a simple convenience for anyone with an Android phone; Sony now supports Android's Fast Pair for quick setup. A bigger improvement that both iPhone and Android people will appreciate is the upgraded mic performance. Sony has added what it calls "Precise Voice Pickup technology" to the 1000XM4s, which optimizes audio processing from the five built-in microphones for clearer voice capture. Still, the USB-C port cannot be used for audio. The design still remains the same and the cold-weather improvements are unproven.

Weekly dose of news

- Telegram introduces end-to-end encrypted video calls.
- Microsoft tells Windows 10 users they can never uninstall Edge Browser.
- Google Maps now compatible with Apple's CarPlay Dashboard mode.
- Micromax ready to make a comeback as it teases new phone launch in India soon.
- Qualcomm Snapdragon 732G SoC to allegedly arrive in September.
- Facebook has started merging Messenger chat with Instagram's direct messaging functionality.
- Samsung is preparing to relocate a significant part of its smartphone manufacturing to India.
- iPhone 12 will be manufactured in Bangalore.
- Google Pixel 5 tipped to feature 90Hz OLED Display with 8GB of RAM.
- Sony's new software allows its cameras to work as webcams during video calls.
- Facebook is discontinuing its classic design in September.
- TikTok removes 3,80,000 videos In US for violating hate speech policy.
- Tesla seeks approval for sensor that could detect child left in hot cars.
- Realme to launch their smartphones in India soon.
- UCL engineers achieve world's fastest internet speed of 178 Terabits/second.

BlackBerry is making a return
Subham Jalan

BlackBerry, the brand which introduced Gen Z to phones with a keyboard, had been doing bad in sales lately. However, it is breaking away from its parent brand, TCL, and is joining hands with OnwardMobility, to deliver the best of their phones. OnwardMobility is also partnering up with FIH Mobile, a subsidiary of Foxconn Technology Group, to ensure world-class design and manufacturing of the devices. Their goal is "To provide all businesses, from government to enterprise to those who power the gig economy—the most productive, most user-friendly and most secure mobile devices ever created." They are planning to launch 5G BlackBerry smartphones next year with security features designed for businesspersons and governments and it will be interesting to see how the revival of BlackBerry goes.
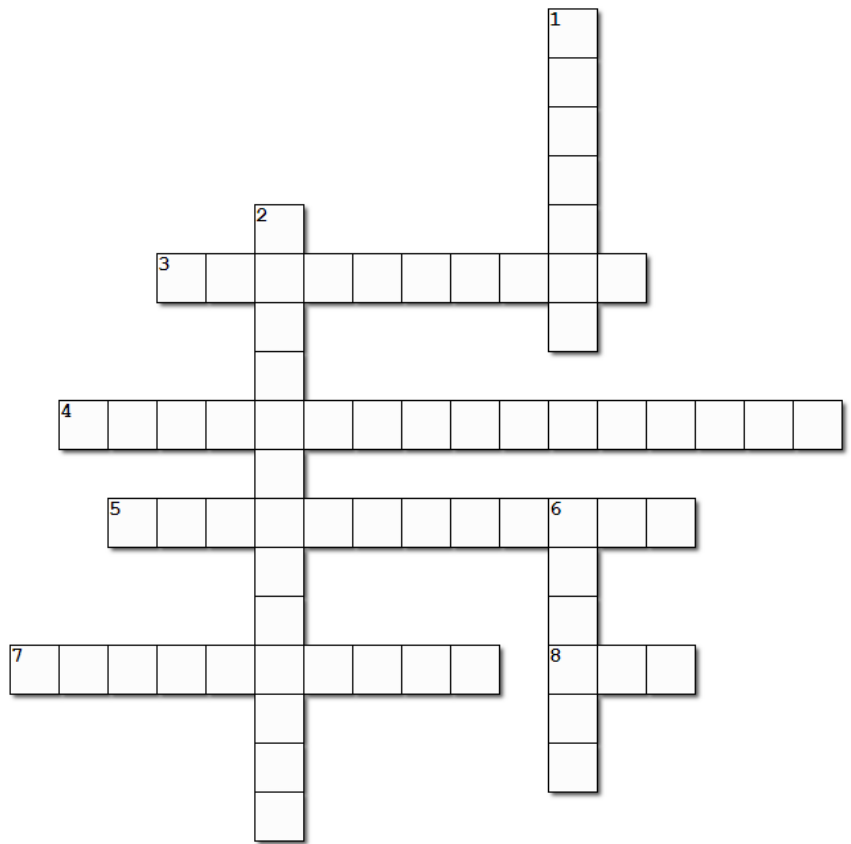
The more you know

- Using a thinner font can save printer ink.
- The first webpage info.cern.ch is still running.
- Millions of hours of TV and movies are watched every day on Netflix.
- There's a term for old people who use the internet. – Silver Surfers
- Tech companies often test their products in New Zealand because of its diversity with English speaking residents.
- Most of today's successful companies started in garages. – Apple, HP, Google, Microsoft, to name a few.

Crossword Puzzle

Down

1. Which software framework was introduced by Microsoft in 1996?
2. Who is the current CEO of Alphabet Inc.?
6. What was the first emoticon ever used?

Across

3. Who co-founded Microsoft alongside Bill Gates?
4. 'OS' computer abbreviation usually means ?
5. Who co-created the UNIX operating system in 1971 with Dennis Ritchie?
7. What technology is used to record cryptocurrenscy transactions?
8. What is a text file that contains a record of events called?

Check this out!

https://www.hotspot3d.com/

Imagine a situation where you want to buy a smartphone out of a bunch of notable picks but can't decide. Well, this is where Hotspot 3D has a role to play in helping you compare devices in 3D so that it becomes a tad easier for you to decide which one can fit into your demand.

Is this $10000 beast worth it?
Naman Baid

Asus just announced their top of the line workstation laptop, The Asus ProArt StudioBook One, which costs a whopping $10000. The reason this laptop costs so much is the Nvidia Quadro RTX 6000, which alone costs $4000 and comes with 24GB of GDDR6 VRAM. This laptop comes with a Core i9 - 9980HK which turbos up to 5GHz, 64GB 2666MHz RAM, a 1 TB NVMe M.2 SSD, and a 90Wh battery which occupies the entire palm rest area. Asus has taken what is currently under the keyboard and slapped it behind the screen. 2 little cans are gear driven on the hinge which opens the back panel for the air to enter and cool the components which is then passed through a titanium vapor chamber and then comes out from the top of the laptop. It has 2 aluminum fans which blast the cool air on the titanium vapor chamber which is capable of dissipating 300 Watts. It comes with a 300 watts Gallium Nitrite charger which is capable of higher activation energies and higher frequencies.

It outperforms Area 51m and the XPS 17 without thermal throttling. The cherry on top is the display, 120Hz 4K UHD which is color calibrated right out of the box. The I/O on this machine is not good, it has a total of 4 ports, 1 DC power-in, and 3 thunderbolt 3 ports. Asus is kind enough to include a dongle in the box with all the necessary ports but it still doesn't have a headphone jack. The thing that will not be loved by all is the keyboard with very little key travel. It has an amazing trackpad with excellent palm rejection while maintaining all the multi-features you would expect. Now at last come the speakers, which are okay but still not MacBook level. The question, is this worth it? This laptop is more of an innovation box and the answer depends on how and if the upcoming laptops are influenced by this one.

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Jeev Jatin Singh (Writer)

Naman Keswani (Writer)

Naman Baid (Writer)

App of the week
Subham Jalan

Sky: Children of the Light – In this relatively free-roaming adventure, with a smattering of puzzling and a dollop of social multiplayer, you're one of the titular children, locating spirits and returning them to the stars. You find yourself in lush landscapes to explore at leisure, and regularly take to the air by way of a magic cape. Nothing else exists on mobile devices which offers a beautiful and soothing experience like this one.