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RedHat Course

Department has signed a MoU to be a partner with RedHat Academy to provide better career opportunities to the students, according to current demand and requirement of the industry. The course duration was 72-hours and the registered students were been trained to appear for Global Certification in RedHat System Administration.

App of the Month : Duolingo

It's a language learning app with a lot going for it. It teaches you languages in bite sized chunks thyrough little mini games. The lessons get harder the further you go, but it always manages to stay fun. It supports over a dozen languages. It's one of the great learning apps for both adults and kids. Duolingo lessons adapt to your learning style. Exercises are tailored to help you learn and review vocabulary effectively. Earn virtual coins, unlock new levels, and watch your fluency score rise as you master new words, phrases, and grammar.

Upcoming Events:

AAGAZ 2019

"THRUST FOR INNOVATION"

A Fest organized by the faculty of Physical Science Department. Inter-School and Inter-Collegiate Competition will be conducted. This Event will take place on 16th December 2019.

Events Under:
- **Computer Forum (Computer Science Department)**
- **Pythagorean Club (Mathematics Department)**
- **Science Club (Physics Department)**

  # For Registration or other quires please contact above departments.

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IT TRENDS

Department of Computer Science & Application
St. Aloysius College, Jabalpur (M.P.)

BLOCKCHAIN TECHNOLOGY

A Blockchain is a digital record of transactions. The name comes from its structure, in which individual records, called blocks, are linked together in single list, called a chain.

Blockchains are used for recording transactions made with cryptocurrencies, such as Bitcoin, and have many other applications.

The three pillars of Blockchain technology are as follows:
- Decentralization
- Transparency
- Immutability

A. Decentralization

In a decentralized system, the information is not stored by one single entity. In fact, everyone in the network owns the information and if you want to interact with your friend then you can do so directly without going through a third party. That was the main ideology behind Bitcoins. You and only you alone are in charge of your money. we can send our money to anyone we want without having to go through a bank.

B. Transparency

Transparency is an automatic feature which is a key part of the blockchain network, and this reduces any need for checks and balances. No single entity control. If you were to look up a person's transaction history, you will not see while the person's real identity is secure, you will still see all the transactions that were done by their public address. This level of transparency has never existed before within a financial system. It adds that -

extra, and much needed, level of accountability which is required by some of these biggest institutions.

C. Immutability

Immutability, in the context of the blockchain, means that once something has been entered into the blockchain, it cannot be tampered with.The reason why the blockchain gets this property is that of the Cryptographic Hash Function. In simple terms, hashing means taking an input string of any length and giving out an output of a fixed length.

As in the case of SHA-256, no matter how big or small your input is, the output will always have a fixed 256-bits length. This becomes critical when you are dealing with a huge amount of data and transactions. So basically, instead of remembering the input data which could be huge, you can just remember the hash and keep track.

ZERO TOUCH NETWORK

Zero touch network and Service Management is conceived as a next-generation management system that leverages the principles of Network Functions Virtualization (NFV) and Software Defined Networking (SDN).The objective is to develop new, cloud-based network infrastructure and functions based on cloud-native principles to address zero-touch (fully automated) management and operation. The overall aim of zero-touch networks is for machines to learn how to become more autonomous so that we can delegate complex, mundane tasks to them. It frees up more time for humans to do what we're good at - performing more complex tasks that require deeper understanding.

Opportunities and Challenges

For network providers like Facebook, Google or Netflix, this means having platforms and functions available and working for all its users at any time. This is achieved by, for example, deploying clouds, and having efficient routing. For companies like Uber or Airbnb, having a service available also means that the service is physically available. In the case of Uber, a zero-touch network could also enable having cars arrive automatically.

It frees up more time for humans to do what we're good at - performing more complex tasks that require deeper understanding. Indeed, network complexity has increase beyond human capacity, increasing the need for AI and automation. Utilizing zero-touch networks saves time, reduces cost and decreases complexity.

A system that is capable of learning how to perform a sequence of tasks is useful in almost every scenario. As an example to highlight a safety aspect, we would like to avoid our employees climbing towers as much as possible. After all, it can be dangerous.

Automating site inspection using Intelligent Drones is one such example of how adoption of AI and machine learning can help reduce risk. As the industry develops its virtualized network offerings to support 5G deployments the concept of zero-touch is becoming increasingly important for future.

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SOLI RADAR

Soli is a purpose-built chip to track your motion on a microscopic scale. It uses miniature radar for real-time motion tracking of the human hand; it's able to track sub-millimeter motion at high speeds with great accuracy. The Soli chip measures just 8mm x 10mm and it incorporates the sensor and antenna array into a single device, meaning it can be used in even the smallest wearables.

It has no moving parts, consumes very little energy, isn't affected by light conditions and works through most materials making it a pretty exciting bit of technology.

The Google Soli chip uses radar, so it works by emitting electromagnetic waves with objects within the beam reflecting information back to the antenna. Information gathered from the reflected signal - things like time delay or frequency changes - give the device information about the interaction.
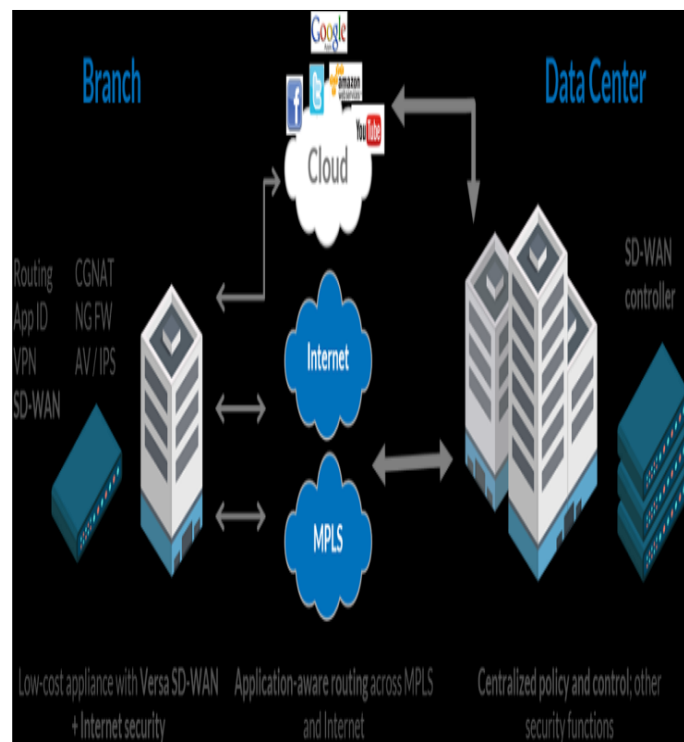
Soli senses "subtle changes in the received signal over time. By processing these Soli can distinguish complex finger movements and hand shapes within its field."

EXTENDED REALITY (XR)

Extended reality (XR) is a term referring to all real-and-virtual combined environments and human-machine interactions generated by computer technology and wearables.

It includes representative forms such as Augmented Reality (AR), Mixed Reality (MR) and Virtual Reality (VR) and the areas interpolated among them. The levels of virtuality ranges from partially sensory inputs to immersive virtuality, also called VR.

XR is a superset which includes the entire spectrum from "the complete real" to "the complete virtual" in the concept of reality-virtuality continuum introduced by Paul Milgram. Still, its connotation lies in the extension of human experiences especially relating to the senses of existence (represented by VR) and the acquisition of cognition (represented by AR). With the continuous development in human-computer interactions, this connotation is still evolving.

DOEACC COURSE

St. Aloysius' College is recognized as the Centre for Software O-Level DOEACC Course certified under MeITY, MHRD. The course is a one year diploma course comprising of two semesters with the curriculum aligned with NSDC.

COMPUTER OPERATOR

Department offers Self-financed one year Diploma in Computer Operator course. The objective of this course is to empower the students with skill development and employability.
The students' can seek jobs as Office Executives, Office Coordinators, Office Assistants, Data Entry Operators and various other job profiles.

VIRTUAL GUEST LECTURE

Department had organized Virtual Guest Lecture on the topic "Cloud Computing and its Current Scenarios" for all M.Sc(Computer Science) and BCA III Year students. The lecture was delivered by Mr. Praneet Verman, Project Manager in Techlene Software Solution Pvt. Ltd., Indore. The lecture comprised of practical exposure to cloud implementation along with other emerging services like SaaS, PaaS, LaaS.

EARN-WHILE-LEARN

Department of Computer Science and Application provided opportunities to the students to EARN WHILE THEY LEARN. Under this concept the students of PG got an opportunity to train the students in Computer Operator Diploma Course.

AKANKSHA GARG
M.Sc(CS)

SHAISTA KHAN
M.Sc(CS)

SHANIYA KHANAM
M.Sc(CS)

ROHAN KUMAR
M.Sc(CS)

COMPUTER LITERACY

Computer literacy programme was implemented by the department to equip the non-computer background students with computer awareness knowledge. This year around 200+ students were made computer literate. The modules covered were Libre Office Package and basics of Internet usage.