K.L.N. College of Engineering

i'Storm

Department of Information Technology

SPECIAL INTEREST GROUP

LIVE WITH TECHNOLOGY

PRINCIPAL MESSAGE

It is a matter of great pride and satisfaction for K.L.N. COLLEGE OF ENGINEERING to bring out the News Letter '**I'STORM**' Released from the Department of Information Technology. The College has made tremendous progress in all areas-academic, non-academics, capacity building relevant to staff and students. The College has achieved another milestone in getting NBA (National Board of Accreditation).I am confident that this issue of Department News Letter will send a positive signal to the staff, students and the person who are interested in the Technical education and Technology based activities. A News Letter is like a mirror which reflects the clear picture of all sorts of activities undertaken by a Department and develops writing skills among students in particular and teaching faculty in general. I congratulate the Editorial Board of this News Letter who have played wonderful role in accomplishing the task in Record time. I express my deep sense of gratitude to Dr.N.Balaji, HOD/IT under whose guidance this Technical work has been undertaken and completed within the stipulated time. Also my heartfelt Congratulations to staff members and Students for their fruitful effort. With Best Wishes.

PRINCIPAL

Dr.A.V. RAMPRASAD

THE EDITOR'S DESK

It gives me immense pleasure to note that response to this newsletter of our department **i'STORM** has been overwhelming. The wide-spectrum of articles in different sections gives me a sense of pride that our students and professors possess creative potential and original thinking in ample measures. Each article is entertaining, interesting and absorbing. I applaud the contributors for their stimulated thoughts and varied hues in articles contributed by them. Commendable job has also been done by the Editorial Board in planning for and producing the Newsletter. My congratulations to the team who took the responsibility for the arduous task most effectively. I am hopeful that this small piece of technical work shall not only develop the taste for reading among students but also develop a sense belonging to the institution as well.

H.O.D (I.T)

Dr.N.Balaji

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OUR COLLEGE :

Vision

To become a Premier Institute of National Repute by Providing Quality Education, Successful Graduation, Potential Employability and Advanced Research & Development through Academic Excellence.

Mission

To Develop and Make Students Competent Professional in the Dynamic Environment in the field of Engineering, Technology and Management by emphasizing Research, Social Concern and Ethical Values through Quality Education System.

OUR DEPARTMENT:

Vision

To emerge as a centre of excellence through innovative technical education and research in Information Technology.

Mission

To produce competent information technology professionals to face the industrial and societal challenges by imparting quality education with ethical values.

Program Educational Objectives

The Educational Objectives of Information Technology Program represents major accomplishments that we expect from our graduates to have achieved three to five years after graduation. More specifically our graduates are expected.

1. *To excel in industrial or graduate work in information technology and allied fields.*

2. *To practice their professions conforming to ethical values and environmental friendly policies.*

3. *To be able to have an exposure in emerging cutting edge technologies and adapt to ever changing technologies.*

4. *To work in international and multi – disciplinary environments.*

Program Specific Outcomes

1. *Ability to apply the fundamentals of mathematics, science, engineering, information and computing technologies to identify, analyze, design develop, test, debug and obtain solutions for complex engineering problems.*

2. *Ability to select and apply appropriate modern tools and cutting edge technologies in the field of Information and communication to meet the industrial and societal requirements with public health and safety considerations.*

3. *Ability to analyze the multidisciplinary problems and function effectively in various teams for developing innovative solutions with environmental concerns and apply ethical principles in their career.*

4. *Ability to acquire leadership and communication skills to manage projects and engage in lifelong technical learning to keep in pace with the changes in technologies.*

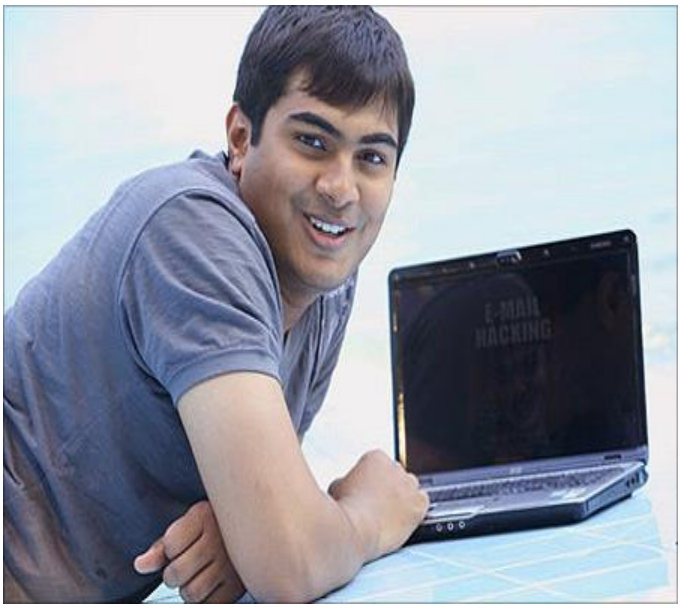
Program Outcome

1. ***Engineering knowledge:*** *Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.*
2. ***Problem analysis:*** *Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.*
3. ***Design/development of solutions:*** *Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.*
4. ***Conduct investigations of complex problems:*** *Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data,and synthesis of the information to provide valid conclusions.*
5. ***Modern tool usage:*** *Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.*
6. ***The engineer and society:*** *Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.*
7. ***Environment and sustainability:*** *Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.*
8. ***Ethics:*** *Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.*
9. ***Individual and team work:*** *Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.*
10. ***Communication:*** *Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clearinstructions.*
11. ***Project management and finance:*** *Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.*
12. ***Life-long learning:*** *Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change*

ICON OF THE MONTH

AnkitFadia

AnkitFadia (born 24 May 1985) is an Indian author, speaker, television host, and self-proclaimed "ethical hacker" of computers, whose skills and ethics have been debated. His work mostly involves OS-based tips and tricks, proxy websites and lifestyle.



In 2008 he started a television show on MTV India called "What The Hack", which he co-hosted with VJ Jose. In this show Fadia gave tips on how to make good use of the Internet and answered people's technology-related questions. In 2013, AnkitFadia started a YouTube show Geek on the Loose, in collaboration with PING networks, where he shared technology-related tips and tricks. The show has got more than 750,000+ views on YouTube.

A number of his claims regarding his achievements have been disputed by others within the security industry, and he was mocked with a "Security Charlatan of the Year" award at DEF CON 20 in 2012.[8] Attrition.org also reviewed his alleged credentials and included him on their Security Charlatans list, calling into question the veracity of his marketing statements. He has been accused of plagiarism in his work. His claims of hacking feats have since been thrashed by many magazines.

Career

After his first book came in the limelight, Fadia became sought-after among the corporate clients in India as well as on the conference speaking circuit. He wrote more books on computer security, and spoke at several seminars across schools and colleges in India. In addition, he started providing his own computer security courses, including the "AnkitFadia Certified Ethical Hacker" programme in alliance with Reliance World.

In 2008, the IMT Ghaziabad Centre for Distance Learning signed an MoU with Fadia to organise its one-year Post-Graduate Diploma in Cyber Security.

In 2009, Fadia stated that he was working in New York as an Internet security expert for "prestigious companies". Fadia also endorsed the Flying Machine jeans brand ofArvind Mills.

Fadia was dismissed as a fad by some security and cryptography enthusiasts, who attributed his success to the tech-illiterate media. Fadia has dismissed the critics who question his credibility as an expert, saying "If I had been fake, my growth would have stopped 10 years ago".

Hacking claims and controversies

In 2002, Fadia claimed that at the age of 17, he had defaced the website of an Indian magazine, But never hacked it truly,He is best script kiddie Subsequently, he named the magazine as the Indian edition of CHIP magazine, and stated that the editor had offered him a job when informed about the defacement. In 2012, the Forbes India executive editor Charles Assisi (who was editor of CHIP India at the time of the supposed incident), denied that such an incident

ever took place after verifying with his predecessor and successor at the magazine as well.

In a 2002 interview published on rediff.com, he stated that at the age of 16, he foiled an attempt by the Kashmiri separatist hackers to deface an Indian website. He stated he gathered information about the attackers, eavesdropped on their online chat using one of their identities, and then mailed the transcript to a US spy organization that had hired him. He did not divulge the name of the organization he worked for, citing security reasons. The Pakistani hacker group Anti-India Crew (AIC) questioned Fadia's claims: along with WFD, the AIC hacked the Indian government website epfindia.gov.in, dedicating it to Fadia, mocking his capabilities. AIC also announced that it would be defacing the website of the CBEC (www.cbec.gov.in) within the next two days, and challenged Fadia to prevent it by patching the vulnerability.

In 2003, he claimed to have infiltrated a group of hackers and stated that the Pakistani intelligence agencies were paying "Westerners" to deface Indian websites with anti-India or pro-Pakistan content.

Fadia's own website has been hacked multiple times. In 2009, he blamed the defacement on vulnerability in the servers of his webhost net4india. Independent security experts contested his claim, stating that the problem was a loophole in his own website's code, His website hacked by an Indian hacker Himanshu Sharma, where he accepted the challenge from AnkitFadia. In 2012, his website was defaced twice by hackers. In the first instance, the hackers rubbished his claims and stated that he was fooling people. Another hacker compromised it in response to a challenge that was issued by Fadia on the Tech Toyz show on CNBC-TV18.

In 2012, DEF CON awarded him with the "Security Charlatan of the Year" award citing him to be a fraudster and his presentations outdated. The website attrition.org mentions him as a security charlatan and accuses him of plagiarism in his work

-S.A.Abishek (Third year)

DATA MINING TRENDS

User data exploitation:

2016 is turning out to be a strong year for social media and app companies, with the number of social media users set to jump from 1.96 to 2.13 billion between 2015 and the end of 2016. Users are being drawn to social media and mobile apps due to their ease of use, iniquitousness and affordability. However, in business there is always a trade off, and for these online platforms the tradeoff is data collection.

The majority of free social networking sites and apps gain revenue by collecting user data and selling this information to advertisers. Facebook (NASDAQ:FB) is the quintessential example: the platform is free to consumers, but generates massive revenue through online ads. Sometimes this is a harmless exchange of value. However, more and more frequently companies’ efforts to collect user data are becoming points of contention. This is largely an issue of transparency.

Greater transparency:

Though this user data collection is common, consumers are often unaware that it's happening.

For instance, a study at Harvard University led by the Federal Trade Commission's former chief technology officer found that 73 percent of Android's most popular 55 apps share personal information with third-party websites. However, study participants had no idea that this data, which includes email addresses and names, was being shared.

The Apple (NASDAQ:APPL) App Store is more cautious about this type of security, but nevertheless the same study found that nearly half of the 55 apps tested share location data without notifying users.

Understandably, consumers are beginning to take a stand against this lack of transparency. Case in point: the Data Transparency Lab, whose goal is to increase transparency by creating a community that shares tools, methodologies and datasets, held its first conference in 2015. This increased emphasis is expected to continue in 2016 and become a key trend.

Life science R&D

Another significant data mining trend next year will be the increased use of data in the life sciences sector.

A PwC report on the pharmaceutical sector states that people create about 2.5 million terabytes of data each day, and notes that this figure is poised to grow with adoption of new technology interfaces. Mining, organizing and understanding this data can help those in the life sciences space be more focused and efficient in their research and development.

Personal genomics data is perhaps the best example. According to PwC, in 2001 it cost $95 million to read an entire human genome. Today, this same task can be accomplished for less than $1,000, and in a fraction of the amount of time. The affordability and efficiency of gene sequencing is affecting the way doctors are able to diagnose and treat patients, transforming the data and life sciences sectors in the process.

Trend takes away:

All told, these data mining trends illustrate that 2016 is a strong year for the data sector. Data is transforming almost every industry, and savvy investors would be wise to hop on the data investing train. From mobile apps to the pharmaceutical sector, there's virtually no vertical left untouched by the onslaught of this year's data mining trends.

-C.V.Shanthi (Third year)

IoT-2016

Following the Internet of Things can be dizzying. In the first half of the year, the IoT playing field became more competitive and the volume of business partnerships became more extensive. While 2016 could go down as a record year for M&A activity in the sector, concerns about security and execution remain.

Potentially Record-Breaking Number of Acquisitions:

Approximately 80 IoT acquisition deals went through in 2015—the biggest year yet.

"2016 will likely have more, as the gaps and market demands become clearer as adoption increases," says Don DeLoach, President and CEO at Infobright. "Moreover, many large firms have been very public about funding acquisition plans around IoT. Most are using in-house teams to both strategically invest and execute acquisitions."

"As more and more IoT initiatives become real, pressure mounts for global tech companies to generate new sources of revenue," says Aaron Aubrecht, CMO and SVP of Products at Covisint. "As such, they seek to augment their traditional product portfolios to fulfill the required competencies for IoT technologies, such as analytics, security and connectivity platforms."

"As IoT keeps evolving, major players will compete for positioning across various vertical market segments. One would expect these players to ramp up M&A activity to stay relevant—or else miss out on the revolution," explains Aubrecht from Covisint.

IoT Playing Field Grows More Crowded

Just about every type of company seems to have an IoT strategy in 2016. Mattel announced a connected Barbie doll and even a drone. Atari announced that it will make smarthome products. Firefox-maker Mozilla is entering the IoT market, as is Visa. It seems that every week has news of a company either entering the IoT market or expanding their business in the sector. "With the rush to bring more IoT-enabled products to market, many are teaming with other companies to quickly bridge gaps to address the perceived opportunity," explains Don DeLoach, President and CEO at Infobright.

IoT Is So Complex That Partnerships Are a Must

The Internet of Things is so vast and complex that it often many partners are involved in IoT deployments. "Building an IoT product is a massive undertaking, and it makes sense that companies are partnering up because it's difficult for any one company to provide a comprehensive solution," Zach Supalla, CEO of Particle told us earlier after announcing a deal with Twilio.

Already this year, several companies have announced that they are creating or expanding their supplier network, including Dell, IBM, Texas Instruments, Intel, and many others.

Established Companies Double Down on IoT to Offset Declining Revenue

Old-guard tech companies like IBM and Intel are making big investments in the Internet of Things to compensate for declines in more traditional business segments. Intel, which is still the world's top chip company, announced reorganization in April with plans to cut 12,000 workers and funneling the savings to its growing Internet of Things and data center businesses. IBM is following a similar path, making cuts in legacy segments while betting that its Watson technology will find growing use in IoT.

Security Still a Massive Concern

"There is growing appreciation of the magnitude and breadth of the security threat associated with IoT," says Don DeLoach, President and CEOat Infobright. "One of the key thrusts is to increase awareness of threats and provide basic education beginning with very basic best practices associated with security, including authentication and password strategies. It is also important for organizations to understand the use cases and the related security risks then make IoT investments based on their own tolerance for risk and willingness to spend on security enhancements."

While the scope of the problem is acknowledged by security officials in large companies, the issue is less of a priority at the C

level. “It’s patently obvious the only thing that matters at the C level is money,” says Mike Ahmadi, cyber security director at Synopsys. IoT companies may start paying more attention to security once IoT hacking incidents begin to cost them financially. “Anything that interferes with cash flow is of grave concern.”

-T.S.AzithLal (Third year)

MOBILE COMMUNICATION

3G

3G or third generation mobile telecommunications is a generation of standards for mobile phonesand mobile telecommunication services fulfilling the International Mobile Telecommunications-2000 (IMT-2000) specifications by the International Telecommunication Union. Applicationservices include wide area wireless voice telephone, mobile Internet access, video calls andmobile TV, all in a mobile environment.

Global Positioning System (GPS)

The Global Positioning System (GPS) is a space based satellite navigation system that provides location and time information in all weather, anywhere on or near the Earth, where there is an unobstructed line of sight to four or more GPS satellites. The GPS program provides critical capabilities to military, civil and commercial users around the world. In addition, GPS is the backbone for modernizing the global air traffic system, weather, and location services.

Long Term Evolution (LTE)

LTE is a standard for wireless communication of high-speed data for mobile phones and data terminals. It is based on the GSM/EDGE and UMTS/HSPA network technologies, increasing the capacity and speed using new modulation techniques. It is related with the implementation of fourth Generation (4G) technology.

WiMAX

WiMAX (Worldwide Interoperability for Microwave Access) is a wireless communications standard designed to provide 30 to 40 megabit-per-second data rates, with the latest update providing up to 1 Gbit/s for fixed stations. It is a part of a fourth generation or 4G wireless communication technology. WiMAX far surpasses the 30-metre wireless range of a conventional Wi-Fi Local Area Network (LAN), offering a metropolitan area network with a signal radius of about 50 km. WiMAXoffers data transfer rates that can be superior to conventional cable modem and DSL connections, however, the bandwidth must be shared among multiple users and thus yields lower speed in practice.

Near Field Communication

Near Field Communication (NFC) is a set of standards for smartphones and similar devices to establish radio communication with each other by touching them together or bringing them intoclose proximity, usually no more than a few centimeters. Present and anticipated applicationsinclude contactless transactions, data exchange, and simplified setup of more

complexcommunications such as Wi-Fi. Comunication is also possible between an NFC device and anunpowered NFC chip, called a "tag".

Conclusion

Today's computing has rapidly grown from being confined to a single location. With mobile computing, people can work from the comfort of any location they wish to as long as theconnection and the security concerns are properly factored. In the same light, the presence ofhigh speed connections has also promoted the use of mobile computing.Being an ever growing and emerging technology, mobile computing will continue to be a coreservice in computing, and Information and Communications Technology.

-N.G.Santhoshi (Third year)

ROBOTICS

Mind-Controlled Robo-Skeleton Enables Paraplegics to Regain Some Motion

Patients paralyzed by a spinal cord injury can face a grim and grueling recovery process—one in which regaining function is far from a sure thing. But a new study published last week in Scientific Reports may provide some hope to those suffering from paraplegia. Using what are called brain–machine interfaces (BMIs)—essentially cyborg connections between prosthetic devices and the nervous system—researchers for the first time were able to show that the process of learning to use a BMI-controlled device can trigger significant neurological recovery in patients with chronic spinal cord injuries. Although the researchers did expect their patients to make progress in learning to walk by using the device—a BMI-controlled exoskeleton designed to move their legs—recovery of sensation and unassisted movement were totally unexpected. Scientific American MIND spoke with neuroprosthetic pioneer, founder of Duke University’s Center for Neuroengineering and lead study author Miguel A. L. Nicolelis about the findings and the field in general.

How does the brain–machine interface actually work? We start by using EEG—or electroencephalography; in other words, using an electrode cap on the scalp to record [brain] activity from the outside. Initially we asked patients to think about walking, but at first there was no signal change since their brains had essentially forgotten what it’s like to have legs. Then we said, “Instead of thinking about moving your legs, think that you are moving your arms.” Here we started seeing EEG activity, which was used as the initial signal to start training them in a virtual reality environment. They were asked to control the movements of an avatar of themselves walking around a soccer field by first thinking about moving their arms and then, gradually, their legs.

Once they mastered this, we outfitted them with static robotic [legs] to move from just controlling the movements of an avatar to controlling an exoskeleton and actually trying to walk. We detected brain signals showing that patients were trying to walk and could send these signals to exoskeletons that then do the mechanical work for them, which allow the patient to move. But I think the most important innovation here is that for the first time we could

also generate very rich tactile feedback from the exoskeleton back to the patient so they would have a sensation of walking. They could feel when the robotic feet touched the ground.

The trick is providing these sensations to the arms of the patients, which—given that these were paraplegic patients, not quadriplegics [paralyzed in all limbs]—were functioning and sensing normally. The patients, of course, look at their legs while trying to walk, and since visual signals override tactile signals most of the time, their brains converted signals to their arms and [they] began feeling sensations that seemed to be coming from their paralyzed legs. It's a phantom limb kind of sensation. They would say, "I'm feeling my legs moving and I'm walking by myself" even though they were inside of an exoskeleton and the robot was moving them. So really, we're fooling the brain by using the skin as a transducer.

What improvements did you see in patients who participated in your brain–machine interface program?

All the patients we looked at eventually reported feeling sensations below the level of their spinal injury. We also started seeing movement return. They were beginning to voluntarily control several muscles for the first time since their injuries, which in some patients was over 10 years. We also noticed that the patients started showing improvements in control of bowel movements and the bladder, which can be impaired in spinal cord injuries and can result in serious infections. So they were also experiencing visceral improvements.

As they improved—using scalp recordings—we saw an expansion of the representation of the lower limbs in the cortex, which had disappeared after their injuries. At the end of a year, half of the patients had been reclassified from complete paralysis to partial paralysis. Since the study ended, all seven patients who have remained with us have been reclassified to partial paralysis.

Has this kind of result been seen before?

To our knowledge, this is the first study showing that brain–machine interfaces can trigger partial neurological recovery in paraplegic patients. So we are very surprised and, of course, very happy. Prior to this these interfaces were thought of as potential assistive technologies, not as therapies.

How long did patients undergo therapy before seeing effects? And how frequent were the sessions?

The times varied for each patient but most underwent therapy for upwards of a year. And we started seeing improvements at about seven months. We looked at eight patients in total, all of whom underwent about two one-hour training sessions a week.

Do any other interventions help with recovery in paraplegic patients?

Not that we are aware of—at least at this level. There's an occasional report of people improving. And by stimulating the spinal cord [using epidural electrical stimulation], doctors have been able to induce movements in some patients—but the moment they turn the stimulation off the patients stop moving and show no long-term recovery.

What's next?

We got permission to continue following the patients in this study and we also recruited a second cohort of patients to try to run a series of placebo controlled studies. So we plan to continue assessing the evolution and extent of sensory and motor recovery over time. I really think this is going to be big. We're retraining people's brains to reacquire the notion of walking. It took us 15 years, but we got here.

-B.M.Ishwarya(Second Year)

WEB TECHNOLOGY

Top 10 web development trends and predictions for 2016

With new powerful development tools, super cool new technology and tidal changes in the tech world, this year looks set to be a very exciting year for web developers. Here are our top 10 trends and predictions for the web development world in 2016.

1. Motion UI

An emerging trend we will see a lot more of in the New Year, Foundation for Apps already implemented strong visual feedback using animation. Along with Motion UI, Google’s Material Design is an emerging trend which we’ll no doubt see a lot more of, probably helped along by frameworks like the Polymer Project.

2. New challenges for responsive design

While wearable technology continues to grow in popularity, we can expect new design challenges presented by devices like the Apple Watch, Google Glass and Oculus Rift. Supporting every screen regardless of size or shape is what responsive design is all about. ZURB’s Foundation is evolving into “Foundation for Sites” and continues to evolve. Semantic UI is a new design framework which is looking really promising, particularly for app design.

3. Foundation for Apps

Foundation’s first foray into the app space, the new framework introduces app templates, an integrated JavaScript development environment with AngularJS and Gulp. New design components including Motion UI and the flex box grid. It’s still early days for the framework, but we expect big things illustration of super yeti with desktop, tablet and mobile device, representing foundation for apps

4. The rise of Node.js

I think we’ll see a shift in web application development to Node.js and probably other JavaScript server-side frameworks. Teams will shift towards using a single language on web projects. Node will help to push this transition along, as both front and back end developers are generally competent in JavaScript.

5. Web UI components

Polymer and ReactJS will grow in popularity as developers move towards more reusable dynamic components. Facebook’s ReactJS library is framework-agnostic and uses some fancy new techniques toquickly build user interfaces. The Polymer project is a larger framework which allows you to createclient-side applications and incorporates mobile-readydesign.

6. New JavaScript features

WebGL 3D will become increasingly popular as browsers continue to increase in speed and capability. Powered by frameworks like three.js, we hope to see more applications of this awesome technology in-browser.

HTML5 JavaScript APIs will have increased support in iOS and Android browsers Service Worker magic for offline web-app use

Object. Observe – revolutionizing two-way data binding in JavaScript MV* frameworks

7. Web API

More app developers will build web APIs, utilized by their web app and their native apps. This is already starting to happen, and will almost certainly increase in popularity as a single codebase is a lot easier to maintain.

8. Single page applications

Following the growth in popularity of the above-mentioned technologies, I expect we’ll see more single page applications being produced. In the New Year I hope to see more solutions to some of the challenges which building these apps present.

9. The rise of Instagram

Instagram recently passed Twitter in their number of users, does this mean a movement away from micro-blogging and an increase in the popularity of image sharing applications? We hope to see more creative ways to share images and videos as new technology becomes available. We should also keep an eye out for developments and trends within other image-based sharing applications like Pinterest andSnapChat.

10. The Internet of Things (IoT)

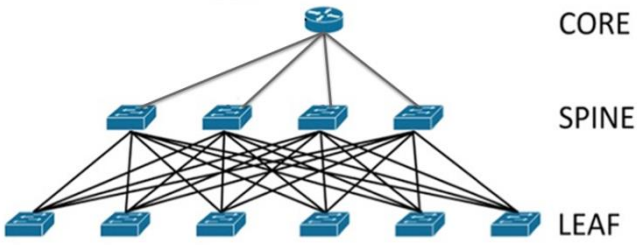
The Internet of Things is the network of physical objects that contains embedded technology in order for them to communicate and interact with their environments and each other. More devices are becoming network-accessible, so as web developers, we’ll be tasked with coming up with new solutions to help users control and communicate with their cars, heat pumps, ovens, toasters and plants. Many companies such as Smart Things and Little Bits already have kits that make your house appliances smart so in 2015, we predict that IoT software platforms will continue to displace hardware. Although much of the early hype has been about high-tech wearables and wireless technologies, this year we predict that we will see an increased focus on the software and especially the cloud services to make all these sensors connect, upload data, and drive analytics that generate insights and enable efficiencies and communications across the business. The IoT movement is so huge that recently Google’s chairman Eric Schmidt predicted that internet will “simply disappear in the future” as it becomes “part of your presence all the time”.

-Divyalakshmi (Second year)

NETWORKS

Next Generation Data Center Networking

The next generation of data center networking is still in the process of being determined, but there are a few main camps that have the momentum, whether they combine together or go in completely different directions is the current big unknown question. One thing that is a common objective is to reduce the amount of time it takes to provision network resources on a network and to automate as much of the individual Command Line Interface (CLI) provisioning as possible.



Software Defined Networking (SDN)

The first of camps that exist revolve around the concept of Software Defined Networking (SDN). SDN itself is broadly defined but basically involves the de-coupling of the control and data planes of the networking equipment (typically switches). What this means is that while it is common for protocols like OSPF (Open Shortest Path First), IS-IS (Intermediate System to Intermediate System) or BGP (Border Gateway Protocol) to be used inside a modern data center the implementation of SDN would remove this routing intelligence (control plane) from the individual devices and move it to a central controller. The actual forwarding of the data (data plane) would remain the responsibility of the individual device, but it forwarding tables would be controlled and modified from a central location.

There are a number of new terms and protocols that have been introduced and implemented for SDN. One of the most common terms that were initially written about quite frequently was OpenFlow. OpenFlow is a control protocol that is used to communicate between the controller and the individual devices; this is one method that can be used to control the behavior of these devices.

SDN and The Evolution Of Existing Topologies

One of the biggest questions that many organizations will need to answer is whether they wish to jump on the SDN bandwagon and whether this decision is even worthy of their specific implementation. In small to medium sized networks, the cost of changing over to SDN may not be worth the cost of implementation in the short or long term. Where the ideas behind SDN really shine are on larger networks and especially in large- to massive-sized data center networks. Another shift that is coming along at the same time as the SDN debate is whether the legacy topologies are designed for their specific traffic requirements. In data center networks this really is much of a question, it is a fact that the traffic patterns within datacenters have changed fundamentally from a North-South traffic pattern to an East-West traffic pattern. There also the fact that excessive and/or wasted capacity is also becoming less of an acceptable condition and is being more focused on as a source of potential savings.

With this, there is a slow evolution from the legacy Fat Tree topology to a newer Clos style of topology. Many forward thinking organizations are well on their way to changing the way their data center networks are connected by completely altering the way that devices are interconnected.

-R.Madhumitha (Second year)

ROAD TO SUCCESS

Shortcuts for pipe and cistern problems:

Pipe and Cistern problems are similar to time and work problems. A pipe is used to fill or empty the tank or cistern.

Inlet Pipe: A pipe used to fill the tank or cistern is known as Inlet Pipe.

Outlet Pipe: A pipe used to empty the tank or cistern is known as Outlet Pipe.

Basic Formulas of Pipes and Cisterns

1. If an inlet pipe can fill the tank in x hours, then the part filled in 1 hour = 1/x
2. If an outlet pipe can empty the tank in y hours, then the part of the tank emptied in 1 hour = 1/y
3. If both inlet and outlet valves are kept open, then the net part of the tank filled in 1hour

$$\frac{1}{x} - \frac{1}{y}$$

Rule 1: Two pipes can fill (or empty) a cistern in x and y hours while working alone. If both pipes

are opened together, then the time taken to fill (or empty) the cistern is given by

$$\left(\frac{xy}{x+y}\right) \text{ hours}$$

Rule 2: Three pipes can fill (or empty) a cistern in x, y and z hours while working alone. If all the three pipes are opened together, the time taken to fill (or empty) the cistern is given by

$$\frac{xyz}{xy+yz+zx} \text{ hours}$$

Rule 3: If a pipe can fill a cistern in x hours and another can fill the same cistern in y hours, but a third one can empty the full tank in z hours, and all of them are opened together, then

$$\text{Net part filled in 1 hour} = \frac{1}{x}+\frac{1}{y}-\frac{1}{z}$$

$$\text{Time taken to fill the full cistern} = \frac{xyz}{yz+xz-xy}$$

Rule 4: A pipe can fill a cistern in x hours. Because of a leak in the bottom, it is filled in y hours. If it is full, the time taken by the leak to empty the cistern is

$$\frac{xy}{y-x} \text{ hours}$$

Shortcuts for partnership problems

When more than one person agree to invest their money to run a business or firm then this kind of agreement is called partnership. The persons involved in the partnership are called partners.

There are two types of partners.

Sleeping Partner: Sleeping partner is the person who provides only investment but does not take part in running the business.

Working Partner: Working partner is the person who not only invests the money but also takes part in running the business. For this work he is paid some salary or some percent of profit in addition.

There are two types of partnership.

Simple Partnership: In simple partnership, capitals of partners are invested for the same period of time.

Compound Partnership: In compound partnership, capitals of partners are invested for the different period of time.

Basic Formulas of Partnership:

If two partners A and B are investing their money to run a business then (Simple Partnership)

$$\frac{\text{Capital of A}}{\text{Capital of B}} = \frac{\text{Profit of A}}{\text{Profit of B}}$$

Capital of A : Capital of B = Profit of A : Profit of B

If two partners A and B are investing their money for different period of time to run a business then (Compound Partnership)

$$\frac{\text{Capital of A} \times \text{Time period of A}}{\text{Capital of B} \times \text{Time period of B}} = \frac{\text{Profit of A}}{\text{Profit of B}}$$

Capital of A × Time period of A : Capital of B × Time period of B = Profit of A : Profit of B

If n partners are investing for different period of time then

C1T1 : C2T2 : C3T3 : … : CnTn = P1 : P2 : P3 : … : Pn

Where C is the capital invested, T is time period of capital invested and P is profit earned.

Rule 1:

If two partners are investing their money C1 and C2 for equal period of time and their total profit is P then their shares of profit are

$$\frac{C_1 \times P}{C_1 + C_2} \text{ and } \frac{C_2 \times P}{C_1 + C_2}$$

If these partners are investing their money for different period of time which is T1 and T2, then their profits are

$$\frac{C_1 \times T_1 \times P}{C_1 T_1 + C_2 T_2} \text{ and } \frac{C_2 \times T_2 \times P}{C_1 T_1 + C_2 T_2}$$

TIMELINE

TVS Sundaram project demo

On 10.05.2016, people from Sundaram Medical Devices came to the college, explained their project and assigned a consultancy work to our department second year students.

Ruby on rails workshop

A workshop on ruby on rails was conducted for the handlers of TFSD class on 21.07.2016. The workshop was conducted by Mr.Gowtham.

Guest lecture on R language

On 23.07.2016, a guest lecture was conducted for third year and final year students on R language by Dr.S.Sasikala, ASP/KLNCIT.

Inauguration of TFSD

The inauguration of TFSD-7 (Technologies For Software Development) classes was conducted on 27.07.2016.

The classes commenced on the same day for the second year students.

Seminar

A seminar on computer networks was conducted for third year students on 16.08.2016 by Mr.Paul Xavier.

SIG Activities:

Seminars on various SIG domains like data mining, robotics, networks, mobile communication, web technology, software engineering were conducted for second year students every Monday, Wednesday and Friday by third year students.

Alumni Interaction

Hands-on workshop on Ruby on rails

On 11.08.2016, a workshop on Ruby on rails was conducted for third year and final year students by Mr.PrasannaVijayan, alumni of our department.

Guest lecture on placement

On 20.08.2016, final year students were addressed by our department alumni Mr.Sivachandran and M.D.Rubini.

Guest lecture on stress management

A guest lecture on stress management was organized for our final year students on 23.07.2016. Mr.Parthasarthy, alumni of our department addressed them.

WALL OF FAME

Table tennis winners

K.Sinega and I.B.Sruthi-Final Year-IT B are table tennis winners in the match held at University College of Engineering-Ramnad on 22.08.2016-23.08.2016.

CONSULTANCY WORK

Honeywell Technology Solutions

Name	Year/Section
K.Sophiya	IV/B
B.Niranjana	IV/B
M.M.Rajkamal	IV/B
G.Sivakaran	IV/B
B.Ramanathan	IV/B
L.Vignesh	IV/B
S.Giridharan	IV/A
M.R.Arun Kumar	IV/A
S.Amal Leo	IV/A

Sundaram Medical Devices and Sundaram Brake Linings

Name	Year/Section
K.R.Pradeep	III/B
P.G.Saravanan	III/B
R.Sandhiya	III/B
C.V.Shanthi	III/B
S.A.Abishek	III/A
M.MohamedAasif	III/A
T.S.AzithLal	III/A

Sundaram Brake Linings

Name	Year/Section
K.ShanthiRathna	III/B
P.B.Sheela Rani	III/B
P.R.Yaamini	III/B
T.N.SaiChitra	III/B
P.Kamalesh Jain	III/A
R.Dixit Jain	III/A

FRESHERS' SECTION

You are new here
With dreams of a seer
You step in your foot
With fears in your hearts' root

You follow the paths
That we, seniors have crossed
You make use of footprints
That we left for you

You will become our friends
We will treat u as such as ours
You are our FRESHERS
We welcome u all with warm wishes.....

-S.A.Abishek (Third year)

TEACHERS DAY SECTION

Poem

T is for talented that you surely are
E is for explaining patiently
A is for the ability to make the class fun
C is for correcting us when we are wrong
H is for helping us in every way
E is for encouraging us to do our best
R is for rare; there is only one of you!

-K.R.Pradeeep (Third year)

Drawing

-K.R.Pradeep (Third year)

Suggestions and Feedback Contact:
klnceitsig@gmail.com