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What is Software Testing? Is it a Non-Tech Profession?

Testing Testing Testing.....

There is a wide variety of definitions & beliefs that each people in the world believe about testing. Most of us are under the impression that Testing is an easy job and is not seen as a high status job in the society compared to Development jobs. This is not true. Every job has its own value and it's true power is brought forward when performed in the right way. Testing is no longer a non-technical area whose only scope is to perform Manual Testing. Even performing Manual Testing requires a lot of technology knowledge. There are variety of Tools and Technologies which we need to know and implement in order to perform Testing in the right way.



Yagnesh Shah
Qapitol QA, Bangalore.

Example 1: Testing team at Google

Have you ever wished there was an easy way to compare how your website appears in all channels of Chrome?

QualityBots is an open source tool for web developers created by the Web Testing team at Google. It's a comparison tool that examines web pages across different Chrome channels using pixel-based DOM analysis. As new versions of Chrome are pushed, QualityBots serves as an early warning system for breakages. Additionally, it helps developers quickly and easily understand how their pages appear across Chrome channels. This is how Web Testing team at Google, made use of technology and invented their own custom tool to make their job easy. Hence, the Testing team can focus on other meaningful testing activities instead of repeating same tasks everyday for each version of chrome

Example 2: Custom Link Checker Tool

There is a web page of an eCommerce website which contains hundreds of hyperlinks to images, product links, Java Scripts, etc. Now as a manual Tester how do we confirm that all the links are working fine and are not returning HTTP 404 Status code for broken links?

It is not possible manually to load hundreds of page and check if they are broken or not. As a Tester we need to use the combination of right technology and try to automate the scenario. One way of automating, can be by using "Selenium Webdriver" and "Java Request/Response" Library methods. So we need to use technical skills for this process and automate it, so that testers can work on other meaningful activities.

Example 3:

Knowledge of Web/Project Architecture for Good Test Coverage

Generally, people tend to write test scenarios based on what they can observe visually in the FE(Front End).

This is not sufficient Test Coverage, if we are unable to cover the tests which are hidden from our eyes. There are two ways of revealing such hidden test scenarios:

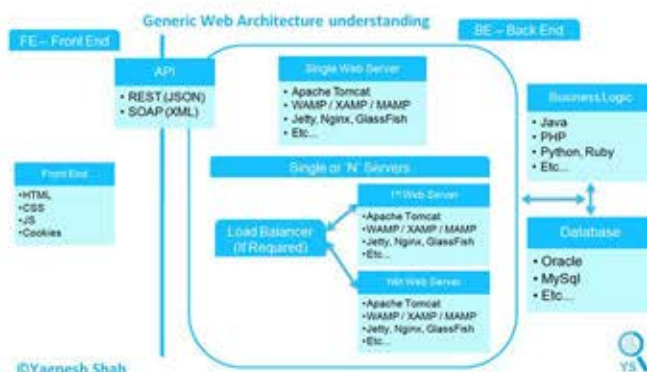
- Test Heuristics like: COP FLUNG GUN, SFDPOT (pronounced San Francisco Depot), CRUSSPIC STMPL (pronounced Krusspic Stemple).

Other list of Test Heuristics can be found here: Mnemonics from Curious Tester and heuristics cheat sheet from Test Obsessed.

• Understanding of Web/Project Architecture

Following can be a generic Architecture for a Website

Now, depending on your understanding of project architecture or the technical flow of specific feature, you can make good test Coverage.



Login/Logout Feature Test Scenarios based on Web/Project Architecture:

Normally people tend to write test cases which are combination permutation of valid/invalid credentials. But that is not all. Following are few interesting test ideas which we can think of, if we are aware of the flow behind the Front-end

• Cookies:

Does the session expires when we deleted the Cookie?

Can I login without entering credentials, if I copy the Cookie and paste in another browser?

• JS:

What kind of Client and Server Validations are implemented?

• Database:

When credentials are submitted, it should be converted into Encrypted format and then compare the same with the Encrypted copy saved in DB.

So, What is Software Testing?

As a tester, I know of many things that comes to my mind when I think about testing. But, there is always “that” feeling in my heart which makes me rethink about “What is Testing?” every day of my life.

As a Fresher (Time, when the job hunt is all we are busy with):

At this stage, my thought about testing is the same as every fresh university pass-out candidate, trying to hunt for a job. I tried giving definitions of testing & what I think about testing, which is same as lots of traditional definitions from text-books. I understand that it could be difficult at this stage as we never had any practical exposure. We believe that testing is easy and anyone can do it. As a Fresher we even think that, it’s an alternative job for Software Engineers if they are unable to get development job. But that is not what testing is!

Note: For all the fresher's who questions, is Testing interesting than development or not? Does it have a future? Is it a boring job? My short answer for you would be - “Everything depends on you & your thinking or willingness to go beyond”. Following is my experience of what I think about testing(at different phase of experience) in terms of technology and responsibilities that comes with it, in this field of work.

As a 1 month experience:

I was lucky that I was hired in a start-up company who breathes in testing and breathes out bugs. Being a part of start-up world, it pushes you to the edge and makes you learn variety of skills at an exponential rate. I can challenge that most of the testers at this stage would have the mentality, that testing is about quality assurance, writing test cases and reporting bugs. My answer would be a big “NOPE”.

Testing is about “Questioning” and providing as much useful information as possible to our stakeholders. So that they can make appropriate decisions after thinking from all possible directions with the information gathered.

As a 6 months experience:

I think I was doing good testing at this stage of my life. Providing as much information as possible. Trying to think of more & more test ideas in order to provide wider coverage to our clients to make decisions on sign-off for release.

• Asking questions, understanding & implementing the concept “Exploratory Testing” & “Context Driven Testing School”

• Power of mind-map

• Twitter-driven exploratory testing

• Utilizing the power of browser add-ons for better & faster testing. Example: Fiddler, Tamper Data, Web-Securify, Web developer, Firebug and lot of other add-on's.

• Reading Blogs of Testers across the world

• Attending Conference & Workshops & Meeting people

• Spreading words about testing via blogging, discussions, etc in the community.

Still that was not sufficient what I think about testing. I keep asking myself same thing again and again, Is these all what testing means to me?

As a 1 year experience mind-set:

At this stage, on the 1st year anniversary of my Testing career, it was a wonderful feeling for me. I was doing some good contribution in the testing community:

- Coaching next-gen testers
- Keep learning new technology & try to make use of it to make testing more interesting & useful.
- Release engineering process and Build deployment on Test Servers by using Bash Commands
- Setup/Trouble Shooting environments for testing.
- Not to ignore setup/configuration testing.
- Automating test scenarios which are likely to be adding more value in testing & save time for creative testing.
- Making new customized tools/libraries for aiding better testing like Link checker, Social media review extractor, Blink test, Bulk email sending for, etc..
- Version Control System like Git
- Performance Testing
- Security Testing
- Non Functional Testing for Mobile apps: Memory Analysis, CPU Usage, GPU Overdraw, etc.
- Work on my Leadership skills - To help people re-shape their thinking about testing.

Now, does this mean that my thinking about testing is on its final level? My answer is still a big “NOPE”.

I always need to keep making myself re-think about testing. Working in a start-up provides me the platform for more creativity, working in a non-traditional fashion, uniqueness and build my reputation in the world of testing community.

This is a feeling I would love to share with every individual who wish to break their boundaries about testing & keep re-thinking to define new boundaries of testing as time pass by. There is no constant meaning of what is testing. The concept of what we think about testing keeps evolving with time.

Happy Testing!!

Message from Vice-Principal's Desk

Rev. Fr. Augustine George

Many historians, sociologists and journalists have expressed concern in recent years about the rapid change in our society. They tell us that today's world is changing at an accelerated rate, unlike anything past generations witnessed. The world has always experienced change; the rate of change is speeding up. The nature of technology itself has undergone a transformation - it is no longer just a 'device', leaving us all as consumers with a sense of breathlessness and expectation - what next?

In this world of technological breakthrough, we need to mould people with the spark of creativity and innovation. Earlier it was believed that if you want to be successful in a highly competitive world, you need to have 'comparative advantage' over the others in terms of your technical capabilities. But in the modern era, in which change is the most powerful challenge, it is your 'adaptive advantage' that makes you survives and succeeds in your professional life. Adaptive advantage is your ability to respond to changes in a highly positive manner.

While technological innovation continues at an exponential rate, human brain development remains steady in comparison. . Sustaining the pace of technological development, developing new and better technologies and simplifying existing technologies require a culture of continuous creativity and innovation. Innovation in technology is an outcome of the creative thinking process of intellectually gifted people.

The Department of Computer Science (PG), Kristu Jayanti College aims at developing such a group of dynamic technocrats by inculcating a pragmatic and professional approach among the students towards technical education.



Apart from the delivery of the curriculum through an innovative teaching pedagogy, we organize diverse programmes to enhance and sustain the technical skills of the students. The 'Technobytes', the newsletter of the department brings to limelight the activities and achievements of the department. It captures the glimpses of all academic, curricular and co-curricular activities, initiative and achievements of the department during the current academic session. I wish this endeavor a great success and I take this opportunity to appreciate tireless efforts of every creative mind behind it.

MCA Programme at a Glance

Prof. Kumar Rangaswamy

The Department Computer Science -PG (MCA) of Kristu Jayanti College was established in the year 2004 with the objective of imparting technical education to aspiring youth to mold them into professionally competent workforce. Master of Computer Application is a three-year (six semesters) professional Master's Degree in Computer Science. The programme was designed to meet the growing demand for qualified professionals in the field of Information Technology. At present there are 129 students in the Department.



The autonomous curriculum is designed to hone strong software competencies, analytical and problem solving skills which are essential pre-requisites for a successful software professionals. The course structure and contents are regularly updated as per the latest requirement. The learning environment is intense and stimulating. The regular academic programme is enhanced by Seminars, Workshops, Personality Development Programmes, Attitudinal Workshop, Soft Skills Training, Tech-Talk Series, Student Seminar Series, Communication sessions, paper presentations and Aptitude Reinforcement modules. These sessions are conducted on a continuing basis by experts from industry. The students and the faculties are kept exposed to the latest developments in the industry. As part of knowledge sharing, peer to peer teaching is motivated amongst the students. The academic transactions are rigorous and innovative. The special features of the Department include the successful conduct of International Conference on Current Trends in Advanced Computing (ICCTAC) once in a year. ICCTAC 16 was technically co-sponsored by IEEE Bangalore section and conference proceedings is included in IEEE Xplore. The next edition of the ICCTAC has been planned to conduct during 02nd - 03rd, March, 2017. The presented papers will be published in IEEE Xplore. Department has recently launched IEEE Student Branch and became the life time member of CSI. Inter-Collegiate Fest, Shells 2017 will be conducted on 02nd - 03rd, February, 2017.

How AI might affect urban life in 2030

Prof. Aruna Devi

A diverse panel of academic and industrial thinkers has looked ahead to 2030 to forecast how advances in artificial intelligence might affect life in a typical North American city, and to spur discussion about how to ensure that AI applications are deployed in ways that are safe, fair and beneficial. Their takeaway: 'It is not too soon for social debate on how the fruits of an AI-dominated economy should be shared.' Titled "Artificial Intelligence and Life in 2030," this year-long investigation is the first product of the One Hundred Year Study on Artificial Intelligence (AI100), an ongoing project hosted by Stanford to inform societal deliberation and provide guidance on the ethical development of smart software, sensors and machines. "We believe specialized AI applications will become both increasingly common and more useful by 2030, improving our economy and quality of life," said Peter Stone, a computer scientist at the University of Texas at Austin and chair of the 17-member panel of international experts. "But this technology will also create profound challenges, affecting jobs and incomes and other issues that we should begin addressing now to ensure that the benefits of AI are broadly shared." The new report traces its roots to a 2009 study that brought AI scientists together in a process of introspection that became ongoing in 2014, when Eric and Mary Horvitz created the AI100 endowment through Stanford. AI100 formed a standing committee of scientists and charged this body with commissioning periodic reports on different aspects of AI over the ensuing century.



The AI100 standing committee first met in 2015. The report investigates eight domains of human activity in which AI technologies are beginning to affect urban life in ways that will become increasingly pervasive and profound by 2030. The report includes a glossary to help nontechnical readers understand how AI applications such as computer vision might help screen tissue samples for cancers or how natural language processing will allow computerized systems to grasp not simply the literal definitions, but the connotations and intent, behind words. The report is broken into eight sections focusing on applications of AI. The eight sections discuss was:

1. Transportation: Autonomous cars, trucks and, possibly, aerial delivery vehicles may alter how we commute, work and shop and create new patterns of life and leisure in cities.
 2. Home/service robots: Like the robotic vacuum cleaners already in some homes, specialized robots will clean and provide security in live/work spaces that will be equipped with sensors and remote controls.
 3. Health care: Devices to monitor personal health and robot-assisted surgery are hints of things to come if AI is developed in ways that gain the trust of doctors, nurses, patients and regulators.
 4. Education: Interactive tutoring systems already help students learn languages, math and other skills. More is possible if technologies like natural language processing platforms develop to augment instruction by humans.
 5. Entertainment: The conjunction of content creation tools, social networks and AI will lead to new ways to gather, organize and deliver media in engaging, personalized and interactive ways.
 6. Low-resource communities: Investments in uplifting technologies like predictive models to prevent lead poisoning or improve food distributions could spread AI benefits to the underserved.
 7. Public safety and security: Cameras, drones and software to analyze crime patterns should use AI in ways that reduce human bias and enhance safety without loss of liberty or dignity.
 8. Employment and workplace: Work should start now on how to help people adapt as the economy undergoes rapid changes as many existing jobs are lost and new ones are created.
- This study provides a realistic foundation to discuss how AI technologies are likely to affect society.

Swarm robots can learn by simply observing

Prof. Aruna Devi

It is now possible for machines to learn how natural or artificial systems work by simply observing them, without being told what to look for, according to researchers at the University of Sheffield. This could mean advances in the world of technology with machines able to predict, among other things, human behavior.

The discovery takes inspiration from the work of pioneering computer scientist Alan Turing, who proposed a test, which a machine could pass if it behaved indistinguishably from a human. In this test, an interrogator exchanges messages with two players in a different room: one human, the other a machine. The interrogator has to find out which of the two players is human. If they consistently fail to do so -- meaning that they are no more successful than if they had chosen one player at random -- the machine has passed the test, and is considered to have human-level intelligence.

Dr Roderich Gross from the Department of Automatic Control and Systems Engineering at the University of Sheffield, said: "Our study uses the Turing test to reveal how a given system -- not necessarily a human -- works. In our case, we put a swarm of robots under surveillance and wanted to find out which rules caused their movements. To do so, we put a second swarm--made of learning robots -- under surveillance too. The movements of all the robots were recorded, and the motion data shown to interrogators." He added: "Unlike in the original Turing test, however, our interrogators are not human but rather computer programs that learn by themselves. Their task is to distinguish between robots from either swarm. They are rewarded for correctly categorizing the motion data from the original swarm as genuine,, and those from the other swarm as counterfeit. The learning robots that succeed in fooling an interrogator --

making it believe their motion data were genuine -- receive a reward."

Dr Gross explained the advantage of the approach, called 'Turing Learning', is that humans no longer need to tell machines what to look for. "Imagine you want a robot to paint like Picasso. Conventional machine learning algorithms would rate the robot's paintings for how closely they resembled a Picasso. But someone would have to tell the algorithms what is considered similar to a Picasso to begin with. Turing Learning does not require such prior knowledge. It would simply reward the robot if it painted something that was considered genuine by the interrogators. Turing Learning would simultaneously learn how to interrogate and how to paint. Scientists could use it to discover the rules governing natural or artificial systems, especially where behavior cannot be easily characterized using similarity metrics," he said.

"Computer games, for example, could gain in realism as virtual players could observe and assume characteristic traits of their human counterparts. They would not simply copy the observed behavior, but rather reveal what makes human players distinctive from the rest." The discovery could also be used to create algorithms that detect abnormalities in behavior. This could prove useful for the health monitoring of livestock and for the preventive maintenance of machines, cars and airplanes.

Turing Learning could also be used in security applications, such as for lie detection or online identity verification. So far, Dr Gross and his team have tested Turing Learning in robot swarms but the next step is to reveal the workings of some animal collectives such as schools of fish or colonies of bees. This could lead to a better understanding of what factors influence the behavior of these animals, and eventually inform policy for their protection.

DNA Hard Drive - the future of digital data storage

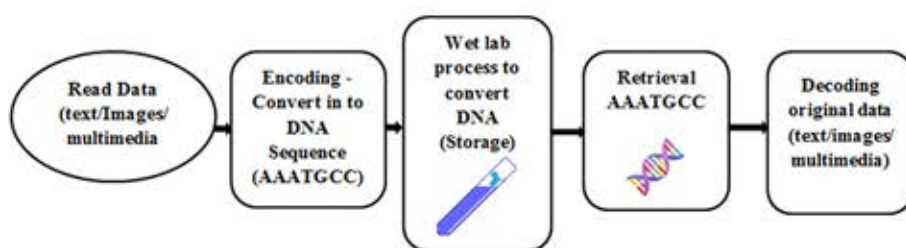
Dr.Ambika Ram

Internet of everything adds huge amount of data, As Big Data gets even bigger, and we need more elaborate ways of storing it than current technology. Modern biology now presents new challenges in terms of data management, query and analysis. DNA data storage is compact and durable for rapidly exceeding capacity of today's than today's best storage technologies - magnetic tape, disk drives and flash memory. Scientists at Harvard University say that it'll soon be possible to store the entire content of the entire World Wide Web within just 75 grams of DNA material.



DNA computing is a wet - biological technique represents using strands of DNA. Even though a DNA reaction is much slower than the cycle time of a silicon-based computer, the inherently parallel processing offered by the DNA process plays an important role. Parallelism property of DNA computing used in solving NP-complete or NP-hard problems.

DNA consists of four bases of molecule structure, named adenine (A), guanine (G), cytosine (C) and thymine (T). DNA is synthesized with each of the TGAC bases representing a binary value: T & G representing 0 and A & C representing 1. Digital data that would normally be stored in a binary code of 0s and 1s and translate it in to Genetic code of As,Cs,Gs and Ts that represents building blocks of DNA. Then the DNA code (for example GATTAGC) will be stashed on test tube. Whenever we want to retrieve the information, use a standard DNA sequencing machine to decode the materials from test tubes. Once again same sequence will be retrieved which can be translated back in to binary to read original file.



Data retrieval of information stored in DNA should ideally require minimal prior knowledge beyond a familiarity with molecular biological techniques. Polymerase chain reaction (PCR) and DNA sequence analysis are the two standard techniques are required for recovery of stored information.

Using this technique researchers believe it would be possible to store 100 million hours of high definition video in a cup of DNA. In 2013, a team reconstructed the entire genome of early horse species using DNA from a buried horse bone in Arctic permafrost for some 700,000 years. DNA synthesis in Big Data is newer and immature. Twist Bioscience a San Francisco's synthetic biology company begun manufacturing DNA to customer specification in the last few years. Companies like Microsoft, IBM and Intel are trying to make magnetic tape for long term storage that is DNA hard drive.

DNA computing has been applied to various fields, including nanotechnology, combinatorial optimization, Boolean circuit development etc., DNA Computing is highly applicable for handling and storage of massive amounts of various types of data. Smartphone or computer would use living material to store the data. If researchers are able to encode and read the data with a 100% success, the process is extremely expensive. Like human genetics, DNA computing manages Bigdata on the cloud. Currently, researches are improved on encoding information, after which it will become feasible from a practical point of view of genetic information storage.

The simple concept of flat design

Mr. Kurian George Cheripurathu, III MCA

Minimalism and simplicity don't always come cheap and they certainly aren't chosen for their low-budget appeal. Apple, Microsoft and Android have all embraced the Flat Design mentality when it has come to some of their applications as well as their Web properties and the concept has been widely extended from examples like e-Wallet sites to News sites who wish to offer a cleaner and more user-friendly option to their customers.



7 Benefits of Flat Design Infographic

The use of flat design has been steadily increasing since 2012, a landmark moment for the rising trend. The main benefits of implementing flat design are:

1. **Less is More:** This saying is the crucial, as it helps draw the viewer's attention to the content itself, rather than being overwhelmed and distracted over complicated illustrations and graphics.
2. **Clean and Simple:** We emphasize the need for minimalism, the need to de-clutter webpages so that it's more visually appealing and easier for the user to navigate around your site.
3. **Flat means Flat:** The design of the site should embrace every sense of the word - flat! To be consistent throughout your design, effects such as drop shadows, 3D effects and textures should be kept to a minimum, or not be used at all.
4. **Function First:** The main point of having a clean interface is to direct the user's attention to your page's functionalities, products or services that your website has to offer, and to place the limelight on your website's key messages.
5. **Colour is Key:** Having a minimalistic design does not translate to having a lack of dimensions. We have gradually shifted away from the traditional roles of making use of only one or two shades, and have moved to utilizing a widened spectrum of colours. In addition, matching saturation and tones, picking shades that are complimentary when deciding between primary and secondary combinations or a different part of the colour wheel entirely, are all factors to take into account when creating a cohesive and stunning design.
6. **Focus on Type:** This point highlights the importance of typefaces. It is important to choose choosing appropriate typefaces to match the overall feel of the design. Typefaces that are crisp, sharp and use clean lines with even strokes typically fit well with flat designs, enhancing the aesthetics and overall minimalistic feel. Size and spacing are the main considerations when combining typography with colour. Sans-serif typefaces with uniform widths tend to be preferred as they blend in well with minimalistic designs.
7. **A Better Experience:** By eliminating the use of excessive styling, webpages can have significantly faster load speed, and can be made to be fully responsive across multiple devices more readily. This helps create a better overall user experience for the users.

Strong Reasons why Web Developers Should Learn AngularJS

Mr. Sanjay Shankhla, V MCA



proclaimed “superheroic JavaScript framework” - is gaining traction. I can only assume other organizations are seeing positive results after adopting Angular. According to Google Trends the popularity of AngularJS (blue) compared to KnockoutJS (red) and “Single Page Applications” (yellow) is exploding. One of the first single-track AngularJS conferences, ng-conf, sold out hundreds of tickets in just a few minutes.

1. AngularJS Gives XAML Developers a Place to Go on the Web

I make this bullet a little “tongue-in-cheek” because the majority of developers using Angular probably haven’t touched XAML with a 10 foot pole.

That’s OK; the reasons why XAML became popular in the Microsoft world through WPF, Silverlight, and now Windows Store app development are important to look at because they translate quite well to Angular. If you’re not familiar with XAML, it is a declarative language based on XML used to instantiate object graphs and set values. You can define various types of objects with properties and literally mark up a set that will get created. The most common types of objects to create are user interface elements such as panels and controls that create a display. XAML makes it easy to layout complex UIs that may change over time. XAML supports inheritance (properties defined as children of parents can pick up values set higher in the tree) and bubbles events similar to the HTML DOM. Another interesting component of XAML is the support for data-binding. This allows there to exist a declared relationship between the presentation layer and your data without creating hard dependencies between components. The XAML layer understands there is a contract - i.e. “I expect a name to be published” and the imperative code simply exposes a property without any knowledge of how it will be rendered. This enables any number of testing scenarios, decouples the UI from underlying logic in a way that allows your design to be volatile without having to refactor tons of code, and enables a truly parallel workflow between designers and developers.

2. AngularJS Gets Rid of Ritual and Ceremony

Have you ever created a text property on a model that you want to bind to your UI? How is that done in various frameworks? In Angular, this will work without any issues and immediately reflect what you type in the span:

```
<input data-ng-model='synchronizeThis' /><span>{{synchronizeThis}}</span>
```

Of course, you’ll seldom have the luxury of building an app that simple, but it illustrates how easy and straightforward data-binding can be in the Angular world. There is very little ritual or ceremony involved with standing up a model that participates in data-binding. You don’t have to derive from an existing object or explicitly declare your properties and dependencies - for the most part, you can just pass something you already have to Angular and it just works. That’s very powerful. If you’re curious how it works, Angular uses dirty tracking.

3. AngularJS Handles Dependencies

Dependency injection is something Angular does quite well. with libraries like RequireJS you can dynamically load JavaScript if and when you need it. Where dependency injection really shines, however, is two scenarios: testing and Single Page Applications. For testing, Angular allows you to divide your app into logical modules that can have dependencies on each other but are initialized separately. This lets you take a very tactical approach to your tests by bringing in only the modules you are interested in. Then, because dependencies are injected, you can take an existing service like Angular’s \$HTTP service and swap it out with the \$httpBackend mock for testing. This enables true unit testing that doesn’t rely on services to be stood up or browser UI to render, while also embracing the ability to create end-to-end tests as well. Single Page Applications use dynamic loading to present a very “native application” feel from a web-based app. People like to shout the SPA acronym like it’s something new but we’ve been building those style apps from the days of Atlas and Ajax. It is ironic to think that Ajax today is really what drives SPA despite the fact that there is seldom any XML involved anymore, as it is all JSON. What you’ll find is these apps can grow quickly with lots of dependencies on various services and modules.

Angular makes it easy to organize these and grab them as needed without worrying about things like, “What namespace does it live in?” or “Did I already spin up an instance?” Instead, you just tell Angular what you need and Angular goes and gets it for you and manages the lifetime of the objects for you (so, for example, you’re not running around with 100 copies of the same simple service that fetches that contact information).

4. AngularJS Allows Developers to Express UI Declaratively and Reduce Side Effects

There are many advantages to a declarativeHaving a structured UI makes it easier to understand and manipulate. Designers who aren’t necessarily programmers can learn markup far easier than they can programming. Using jQuery you end up having to know a lot about the structure of your documents. This creates two issues: first, the result is a lot of unstable code working as “glue” that is tightly coupled to changes in the UI, and second, you end up with plenty “magic” because it’s not evident from looking at the markup just what the UI will do. In other words, you may have a lot of behaviors and animations that are wired up “behind the scenes” so it’s not apparent from looking at the form tags that any validation or transitions are taking place.

By declaring your UI and placing markup directly in HTML, you keep the presentation logic in one place and separated from the imperative logic. Once you understand the extended markup that Angular provides, code snippets like the one above make it clear where data is being bound and what it is being bound to. The addition of tools like directives and filters makes it even more clear what the intent of the UI is, but also how the information is being shaped because the shaping is done right there in the markup rather in some isolated code.

Maintaining large systems - whether large software projects or mid-sized projects with large teams - is about reducing side effects. A side effect is when you change something with unexpected or even catastrophic results. If your jQuery depends on an id to latch onto an element and a designer changes it, you lose that binding. If you are explicitly populating options in a dropdown and the designer (or the customer, or you) decides to switch to a third party component, the code breaks. A declarative UI reduces these side effects by declaring the bindings at the source, removing the need for hidden code that glues the behaviors to the UI, and allowing data-binding to decouple the dependency on the idea (i.e. “a list”) from the presentation of the idea (i.e., a dropdown vs. a bulleted list).

5. AngularJS Enables Massively Parallel Development.

One of the biggest issues we encountered early in the project was developers stepping on each other’s toes. Part of this is just a discipline, and even with raw JavaScript you can follow patterns that make it more modular, but Angular just took it to another level. That’s not to say it completely eliminates dependencies, but it certainly makes them easier to manage. As a specific case in point, there is a massive grid in the application that is used to drive several key operations. In a traditional JavaScript application it could have been a merge nightmare to scale this across a large team. With Angular, however, it was straightforward to break down the various actions into their own services and sub-controllers that developers could independently test and code without crashing into each other as often.

Obviously, for larger projects, this is key. It’s not just about the technology from the perspective of how it enables something on the client, but actually how it enables a workflow and process that empowers your company to scale the team.

IT support staff don’t Care About your privacy

Ms. Arya Peter, III MC

Currently we know people are constantly fighting for their online privacy. We are anxious about the information of websites and social networks that are storing about users and visitors. And we are worried about privacy in browsing and spying by government agencies. But there are areas where we most people don’t think about privacy. And that’s when employees are using the web, email, or other services at work; there is no much privacy, especially for the business systems which are supported to the IT.



Recent research from security vendor Alien Vault talked about how IT workers are degrading in doing their job. And this often includes head officers of the businesses in a question.

It is staff job to track and investigate on the network, email, and systems used.

Firstly starting with email we know in many businesses there is an email services. All inbound and outbound of the emails are scanned using SaaS (Security as a Service). This is done for security reasons like to prevent malware and from other attacks, and to prevent loss of sensitive information.

There are web filtering systems designed to prevent users from surfing the web content on business systems. Sometimes these block sites, like including medical information sites, which mean that a worker or the user of the system is looking up for the symptoms for a potentially serious disease which may accidentally expose this information to the IT staff i.e., when IT staff repair and restore worker systems, there is direct access to a user's laptop and where it has lots of personal information, photos, and other files on it.

So what a privacy-concerned worker should do? In those situations, one should understand that systems and connections are just for those systems. They don't belong to you, so don't try to add any personal information where you wouldn't do in front of other people. Most of us have the mobile phones with fast connections to use if you need to do some personal email or store images etc.

However, there's also a lesson for IT staff that it's unavoidable in the course of your job that you'll come across something which might be problematic for a co-worker. But it doesn't mean that you should share it with your other staff in IT, or store it away to use against someone.

Good IT support practices is meant when you realize something is personal, and if it is a threat to company security and secrets then you shouldn't misuse it rather try to prevent.

The rise of Node.js and why it will rule enterprise software development for at least a decade

Mr. Yetender Poonia, V MCA

Recently, the market has witnessed the acquisitions of several Node.js pioneers, including StrongLoop by IBM, FeedHenry by Red Hat and Modulus by Progress Software.

Node.js is growing quickly with almost unprecedented adoption. In the past five years, more than 190,000 Node.js modules (and other JavaScript libraries) have been added by developers.

This outnumbers the entire Perl CPAN repository contributed over the past 20 years, and surpasses Java Maven Central, despite Node.js having a smaller developer base.

This is a key part of the flexible, lightweight workflow of Node.js. It enables each app to include a set of dependencies in its own dependency tree. Thus, each application can have its dependencies bundled individually for that application, avoiding potential dependency conflicts with other applications.

Early Node.js adopters included Netflix, Walmart, PayPal, Dow Jones and Groupon. These companies created internal "tiger teams" that used Node, deployed it into production, and typically used a divide and conquer approach, splitting up what had previously been a more monolithic approach to managing the way web pages were served up. This enabled them to innovate quickly in specific areas of the business and then immediately deploy microservices into production. Node.js is particularly suited to companies that had web-facing infrastructures and mobile apps that needed to innovate quickly on the backend, using a microservices architecture. This includes organisations that might ordinarily be viewed as conservative, but are faced with the dual challenge of developing apps to respond to rapid business changes, while maintaining the stability and security of existing systems.

These dual demands on IT teams have forced a change in mindset. Nearly all companies need to have some way of responding quickly to urgent business software requirements, whilst maintaining legacy software systems that change less frequently. Node.js is one of the tools of choice for the "fast-IT" teams building systems of engagement, such as mobile solutions. Node.js is most frequently lauded for its ability to address enterprise demand for building apps with APIs that can connect to the backend and handle large data volumes in an efficient and



lightweight manner. Indeed the focus on reusable RESTful APIs, as the most flexible way to architect large-scale software systems, has helped Node.js find a home.

Future of Node.js

Even the more conservative parts of the enterprise IT community have now recognised that Node is quickly maturing. It has a stable core, with backwards compatibility maintained across most versions, and the ability to run real solutions in production in very large enterprises.

Last month at the NodeConf EU, Node 4.0.0 was announced, along with an aggressive release cycle goal. The first long-term support (LTS) release of Node was scheduled for October, with further LTS releases planned every 12 months. Each LTS release will be actively maintained for 18 months, and after that period has passed it will go into maintenance mode for another 12 months.

This long-term support plan gives enterprise developers a reliable understanding of which version of Node is safe to use if they want to experiment and which to use if they plan to deploy to production. And it's reassuring to see the Node.js Foundation making sure that it has an open governance model.

While Node is not intended to replace other languages, it will certainly take its place as one of the tools for enterprise software development and will hold that place for at least a decade. Node has already shown early promise for Internet of Things implementations. For web-based and mobile-based backend systems.

Reports

Alumni Interaction

Date: 10th September 2016

Topic: "Recent trends in IT"

Resource Persons: Mr. Baby K Jojo &
Mr. Vineeth V George, SAP BI Consultant,
Utegration Inc. Bangalore.



For many of the faculty, seeing students they have taught have become successful, is in itself is a great reward. For Alumni, Kristu Jayanti College always remains a second home, a place where it is memories of fun and learning. This alumni interaction is mainly dedicated towards strengthening the bond between students and alumni, thus it is always acted as a common platform for interaction between students and alumni.

The aim of mending the broken link between students and alumni is with the belief that close and continual interaction with alumni will help students gather valuable advice regarding overall development and will aid them in taking crucial life-changing decisions.

Mr. Baby K Jojo and Vineeth V George work as SAP BI Consultant at Utegration Inc Bangalore. First the talk was handled by Mr. Vineeth who gave some insights on ERP and SAP, told about their work in SAP. He at last told everyone that have max imum fun but also have some active participation in learning. Then he handed over to the Mr. Baby for further discussions.

Mr. Baby in his talk was primarily around breaking some myths about industry and making students realize what it is all about. He gave as an advice two points to be kept in mind while working in a firm that is Existence and marketing yourself. He also discussed about how to figure out true interests and channel them positively.

The Alumnus summarized the role of an IT person in various field, several domain of expertise one can pursue for one's professional growth. The alumnus also suggested gaining better knowledge during the curriculum. Both alumnus elaborated role and responsibility of an IT person in their respective field. And they shared their experiences and learning from their professional career and talked about the corporate expectations

It was a Wonderful experience for all students as well for staff. Every student was very co-operative to each-other as well to the faculties. Students were acquainted of latest trends & practice in IT sector.

Teachers Day

8th September 2016

“A good teacher has greater influence in shaping the life of an individual even more than his/her parents”.

Teachers' Day the birthday of Dr.Sarvepalli Radhakrishnan is celebrated every year on 5th of September to honour and acknowledge the contribution made by countless numbers of teachers in helping and modelling the careers of lakhs of students and in turn shaping the destiny of India.

In Kristu Jayanti College, the students of the Computer science department organised Teachers Day celebration on 8th September. Song was sung by Prof. Sevuga Pandian and Fr.Immanuel.

The students took great effort and ensured that teachers enjoy every minute. Students from class III and V SEM exhibited games for the teachers as a treat for them. Followed by the cultural programme, games like pick and identify the person, dhumsarts and so on were conducted for the teachers by the students. The performance of teachers on stage was memorable one. Finally, students gifted teachers with a momentum and Fr. Augustine George thanked for a such wonderful celebration.



Capacity Building Training On Life Skills for IT Professionals

24th & 25th August 2016

Department of Computer Science (PG) in association with Centre for Life Skills Education (CLSE) conducted Two Day Capacity Building Training on Life Skills for IT Professionals on 24th & 25th August 2016. It started with the inauguration ceremony. Prof. Kumar R, Head, Department of Computer Science [PG] welcomed the gathering. The Vice principal of our college Rev. Augustine George inaugurated the training. Dr. Jonas Richard, Head, Department of Social Works & Director, CLSE gave the brief introduction about the training and also given the importance of life skills education. Prof. Aruna Devi K, Faculty in Department of Computer Science [PG] and Coordinator of Life Skills Training delivered the vote of thanks.

These were the 10 basic skills introduced by the inaugural ceremony.

1. Self-Awareness
2. Empathy
3. Problem solving
4. Decision Making
5. Creative Thinking
6. Critical Thinking
7. Effective communication
8. Inter personal relationship
9. Stress Management
10. Emotions.



National Level Workshop on Data Analysis with R.

The Department of Computer Science (PG) conducted Two day National Level workshop on "Data Analysis with R". The workshop was arranged with the objective of providing the platform for acquiring the knowledge on R Programming; comprehend its applications in Data mining and Research and to foster interdisciplinary collaborative research in this area. Mr.Vinod Kumar Murti, Academic Head - Financial Services, iNurture Education Solutions Pvt. Ltd, Bangalore was the Resource person. The workshop was inaugurated by Rev. Fr. Augustine George, the Vice Principal and the welcome address was given by Prof. Aruna Devi, Faculty & Workshop Coordinator. The first session of workshop was on Introduction to the basics of R Programming with included the basic commands, importing the data into the R-Studio etc.

The session continued with the topics on Data Visualization (Histogram, Box Plot, Scatter Plot, Bar charts) were explained. After the completion of each session, the participants were given with the exercises and a quiz related on the topics that were covered.

The afternoon session started with Hypothesis testing in which Sir explained the null hypothesis concept by illustrating the same with a real time example. The session continued with concepts on ONE-WAY ANOVA,

Chi-Square Test and many such related analysis tests that can be performed on the data using the tool

The Day 2 Forenoon session was on Regression which included its types that is, Simple Linear Regression, Logistic and Multiple linear regression and the concept of Multi-Co linearity was explained. The post lunch session started with an Introduction to the Neural networks and their implementation in Data Analytics and Research. The next session was on Cluster Analysis in which Sir explained about the types of clustering, Plotting of a Dendrogram and K-Means Clustering. Hands on practical session were given to the participants on implementation of the same. All the participants gave their feedbacks on the workshop. They stated that workshop was a great success as it gave a great practical knowledge and experience to them working with the tool.

On the whole, the workshop enlightened everyone and helped them to implement the R-Programming commands practically.



Rural Exposure Programme

Kishora Ganakajana - Computer Literacy Programme

5th-6th August 2016

Day: 1

Venue: Alambady Village, Malur Taluk, Kolar District

Date: 05th Aug, 2016

As per the planned schedule for day one few of the students was in charge for taking classes in school as well as college.

Venue: Christ International School

Day: 2

Date: 06th Aug, 2016

The day started with a cup of coffee/tea and followed by the delicious breakfast. The cooking committee started their work by 6AM. And as per the planned schedule for day two few of the students took classes for college and the rest went for a rural survey after the breakfast.

Arrived back to the college by 4:20 PM and handed over the things back to the college and by 4:30 PM and winded up with a short gathering along with the Vice - Principal and the faculties for thanking the management, NSS Coordinator and department for this opportunity and all those who worked behind and involved in the various tasks for making this camp great success.



Report on Student Seminar Series

Title: Views on latest technologies in the IT market

25th June 2016

Classes Attended & Number of beneficiaries: II and III Year MCA Students, 72

Name and details of the Resource Person: - Students from V MCA

Objective:

Student Seminar Series is the forum where students will have the exposure to present their views about latest technologies in the market

Student Seminar Series for the Academic year 2016-2017 was conducted on 25th June, 2016 from 11 am to 1 pm during club activities where the MCA students presented on various topics like python, angular JS, software testing, Joomla and Internet Of Things. It was a learning experience for the students. During the session III and V Semester students along with MCA faculty members were also present.

Each Student is given with stipulated time to do a presentation on the topic assigned, during the end of each presentation few questions are asked by the audience and faculty members. Prof. A. Muruganantham appreciated the students for their presentation and the effort taken for bringing out the latest information about technology.

Tech Talk

SPM Tools

18th July 2016

Name and details of the Resource Person: Mr. Kannan Senthil nathan, Independent Consultant, Agile Trainer.

Objective: To gain knowledge on Software Project Management Tools and its benefits.

On 18th July 2016, Department of Computer Science PG, MCA Program organized a Talk Tech on Software Project Management Tool. The Resource person for the session was Mr. Kannan Senthil Nathan, Independent Consultant, Agile Trainer. He started session with practical example on how a project will be handled in the industry. He made the three teams of student groups and then assigns the task of creating a light house project was given to them. Initially the team bid for the project with the turn back time of 10 min, 8 min and 20 min respectively and the project was assigned to each team. The team couldn't make up with the time that was initially quoted by the team. This activity helped us to understand the various things involved in project management. He went on explain about different types of project contract, quality metric, schedule variance and effort variance and root cause analysis.

He also explained about decision making using Pugh matrix and pros and cons methodology. During the session he had taken questions from students and explained. The session concluded with what to be focused for software project management and how to use Project Management Tool effectively.

Outcome: Students have learned about different Software Project Management tools, decision making using different tools.

Transformation from waterfall and traditional software development to Agile Software development

16th July 2016

Name and details of the Resource Person: Mr. Srinivas V (PMF SAFe, Agilist, CSFO, CSM), Agile Coach at CISCO Systems

Objective: To gain knowledge on Transformation from waterfall and traditional software development to Agile Software development.



On 16th July 2016, Department of Computer Science PG, MCA Program organized a seminar on Transformation from waterfall and traditional software development to Agile Software development. The Resource person for the session was Mr. Srinivas V (PMF SAFe, Agilist, CSFO, CSM), Agile Coach at CISCO Systems, Mr. Srinivas briefed the Second and Third year MCA students on Agile Software Development. He began the seminar by discussing about, what transformation is and why it is required. Then he went on to explain the software development life cycle and existing software development model - the waterfall model, Iterative and Incremental model and their shortcomings. The waterfall model has five distinct levels which are: Requirement, Architecture Design, Implementation, Validation/Testing and Deployment.

In Iterative and Incremental software development model, all the phases overlapped and the developers involved had to multitask and many people were involved. The students came to an understanding that both the models were flawed and needed to be upgraded to overcome all their shortcomings i.e. defects, waste, command and control were high and the planning was less. He also introduces us to this new terminology “Code Smells”, which means that the code that is developed is flawed and since no measures have been taken over a period of time the code began to smell/cause unwanted defects or errors.

Sir kept the audience interactive and interesting by offering sweets to which ever student asked or answer a question pertaining to the subject during the seminar.

In the second half of the seminar Mr. Srinivas introduced the students to the Agile software development. Agile software development is a set of principles for software development in which requirements and solutions evolve through collaboration between self-organizing, cross-functional teams. It promotes adaptive planning, evolutionary development, early delivery, and continuous improvement, and it encourages rapid and flexible response to change.

He went on to explain about how agile works in comparison to Waterfall development methods as well as Agile Ceremonies (meetings).

SCRUM- Agile is a methodology and SCRUM is a framework. It is based on transparency, inspection and adaptation. Many meetings are planned over the course of the developmental stages. The meetings are 1. Sprint planning 2. Daily SCRUM meeting 3. Sprint review 4. Sprint retrospection,

User Story- Explains who, what, why and how? Questions that the developer has for the client.

Epics: Story sizing which is the estimations done based on references.

Difference between definition of done and acceptance criteria: Definition of done: Helps to build quality (Building the product right) and Acceptance criteria: Helps to build functionality (Building the right product).

The session ended with a recap of all the topics that had been discussed.

Outcome:

Students have learned about agile software development, difference between software development life cycle models and its benefits, agile methodology-SCRUM.

Coming Up

Industry Institute Interface(3i)	December	3	2016
International Seminar	January	12	2017
Inter Collegiate Fest - SHELLS 2K17	February	2-3	2017
International Conference ICCTAG'17	March	2-3	2017



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