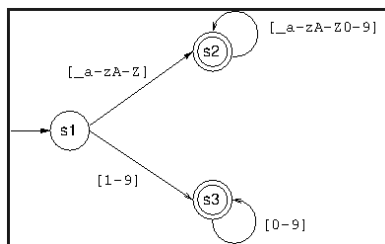


## 2. What new technology competencies should the IT graduate be anticipating and searching out to master either in college, a training program, opportunities provided online, or by self-mastery (reading a book, or IT content-specific website)?

Our IT professionals offered a wide array of thoughts on new technology trends and the associated competencies needed to both familiarize and begin the mastery process. Below these insights are enclosed in quotes. The names of the IT professionals are not associated with the quotes; however, all of these professionals serve on the Center of Excellence's IT Industry Professional Advisory Board.

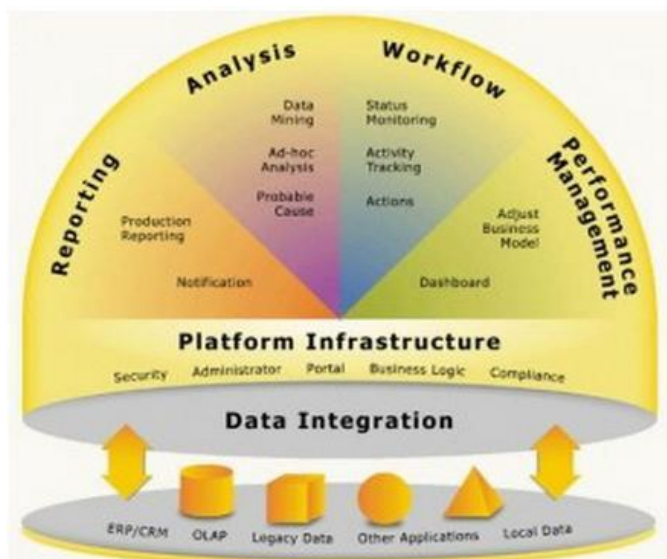


**Comparative Programming:** “Programmers need to be prepared to use several languages over their careers. Too many programmers are stuck in a belief that one language is superior to all others. The different languages should be viewed as a set of different tools for different jobs.

- *Understanding how to program is key, thus, this is where adaptability can be incorporated into the two-series programming courses most CTC IT programs require in their IT or CS degrees.”*

**Comparative Programming Language Analysis:** “Comparative programming language analysis seeks to classify programming languages into different types based on their characteristics; broad categories of programming languages are often known as programming paradigms.” (Source: [Wikipedia](#))

It's critical to note that while comparative programming is recommended, this should happen **after** an IT student has mastered programming concepts using one language.



### “Integration with Outside Technical

**Systems:** The future will be defined by data and interactions flowing in new and unexplored ways between seemingly disparate groups of people.” Changes occurring around data integration are moving quickly. A good overview of this is given [here](#), by [Datmeer.com](#). **Data Integration Ecosystem of the Future**, March 25, 2013, provides a comprehensive overview of what it’s about and where it’s going. This is a preview of Joe Nicholson’s analysis of data integration and its exponential growth creating new occupations and technology solutions, “New types of data, rapidly evolving data sources and high volumes of data make traditional data integration obsolete. Big data discovery differs significantly from traditional BI in that it looks to iteratively reveal unknown patterns, relationships and insights across all available data rather than focus on a simple question and answer paradigm.”

**Data integration** involves combining data residing in different sources and providing users with a unified view of these data. This process becomes significant in a variety of situations, which include both commercial (when two similar companies need to merge their databases) and scientific (combining research results from different bioinformatics repositories, for example) domains. Data integration appears with increasing frequency as the volume and the need to share existing data explodes. It has become the focus of extensive theoretical work, and numerous open problems remain unsolved. In management circles, people frequently refer to data integration as "Enterprise Information Integration" (EII). (Source: [Wikipedia](#))



“Too many IT workers are always chasing ‘new’, which leads them to learn a lot of things that never get used.

- *That time would be better spent getting deeper skills on more widely used and marketable technologies.”*

The following were listed as marketable technologies:

- Big Data (searching, mining)
- Cloud Computing and Models
- [Configuration Management](#) (Puppet, Saltstack, Cfengine, Chef, Systems Center)
- Data Analytics & Reporting
- Mobile Computing (Devices and Remote Access)
- Security (Tools and Administration)
- Security + Compliance
- Server Automation/Management (a comprehensive management of hardware, operating systems, and applications to ensure data center management efficiency.)
- Software [Tools](#) for Website Applications
- Software Defined Networking ([SDN](#))
- Virtualization (VMware, Hyper-V, XEN)

**Adobe Illustrator tutorial: Design a magazine infographic**

Paul But has created an infographic about Doctor Who's most hated enemy – the Daleks – and reveals techniques on how to produce stylish and intelligible infographics.

By Paul But

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Intro

Paul But loves creating infographics documenting popular culture, as he believes a strong relationship between the viewer and the content is a great thing to have. Inspired by the Question Datablog, which had documented the appearance of enemy monsters in Doctor Who, Paul decided to make a graphic about the TV show's most hated enemy – the Daleks – and give some tips and techniques on how to produce stylish and intelligible infographics.

This tutorial is about creating a circular-style bar graphic using basic Illustrator techniques. You'll also learn about a few shortcuts to streamline the procedure and avoid future problems.

**Time to complete**  
Under an hour of practical work; most of the time goes into preparation

**Software**  
Adobe Illustrator CS3 or later



**“Try to learn a series of languages and frameworks through website tutorials, personal projects, internships.”** IT is often viewed as a commitment to lifelong learning. Every IT professional either asserts, or agrees with this statement.



**“Get as much real-world experience in things that interest you.”** Look up ways to create IT projects through everyday experiences, hobbies, or group activities, etc. Just doing a web search, the above image will take an IT student to ***Dream in Code*** ([Dreamincode.net](http://Dreamincode.net)) where one can find a comprehensive list of coding projects to tackle.

***Building an IT Career-Ready Washington: 2015 and Beyond  
The Ideal IT Student, Maureen A. Majury, M.Ed.***

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