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Editorial

We would like to wholeheartedly thank our honorable Chairman, Secretary, Executive Director and Principal for their continuous encouragement and constant support for bringing out the magazine. We profoundly thank our Head of the Department for encouraging and motivating us to lead the magazine a successful one right from the beginning. Ishare serves as a platform for updating and enhancing upcoming technologies in Information and Communication. We are grateful to all the contributors to this magazine so far. The magazine has been sent to almost 60 Institutions in and around Tamilnadu. So far we have received feedbacks and appreciations from various Institutions.

We would be very pleased to receive your feedbacks. Please send your feedbacks to ishare@ksrcas.edu

By,

Editorial Board

CONTENT

APPLE'S IOS 9 VS IOS 8: TEN NEW FEATURES

R. NIRMALA

ASSISTANT PROFESSOR IN COMPUTER SCIENCE

Apple announced a slew of features that will be coming to iPhones and iPad this year.

Curious about what new features we will get to see on our coveted Apple gadget, as well as the availability dates. Check out our round-up of the best iOS 9 features we can look forward to on our iPhones and iPads.

Siri goes proactive

One of the major overhauls in iOS 9 can be found with Siri. The digital voice assistant has received a colourful facelift, but it's what's going on behind the scene that is more interesting.

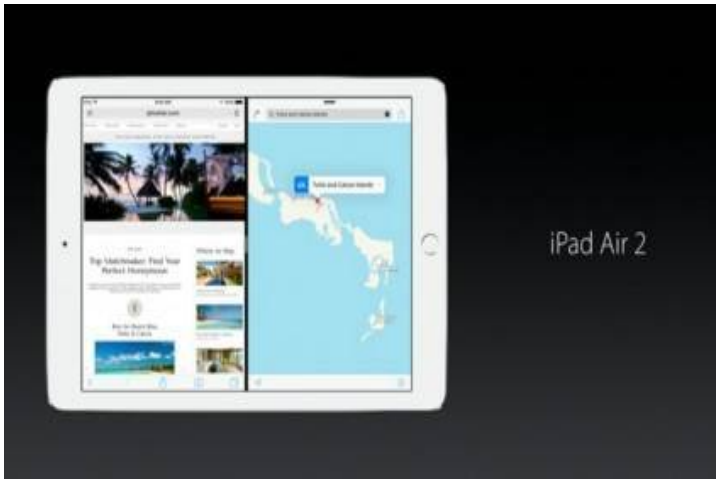
The new interface displays content in a better way, and Siri can now understand a wider range of requests on top of what was on offer in iOS 8. Siri has been, until now, a reactive service, but that's changed in iOS 9. It's now Apple's answer to Google Now, with context sensitive information based on time, date and location. It can, for example, intelligently recognize when you get to the gym and plug in your headphones you'll want your workout mix, and display it on your lock screen.

Battery performance

In iOS 8, there is no clear battery saving mode. You're left to your own devices to turn off data, Wi-Fi, Bluetooth etc to try and conserve power.

That changes in iOS 9 with the introduction of a "low power mode," which Apple claims will provide you with three additional hours of typical usage.

iOS 9 apparently improves general performance too, with Apple saying it gives you an extra one hour of full usage over devices running iOS 8.



Multitasking on iPad's

There are a few iPad-only new features incorporated into iOS 9. First up is the QuickType Keyboard, which adds handy copy, cut, paste tools to the suggestion bar, along with access to the camera, attachments and formatting.

Use two fingers on the keyboard and it becomes a track pad, allowing you to easily select the text you want -- something which is a little tricky in iOS 8.

There's also 'Slide Over', 'Split View' and 'Picture in Picture', which provide a range of multi-tasking options. The first two see two apps share the screen, the former just for a brief moment while the latter sees those apps sit side by side permanently. If you're familiar with Samsung's top end smartphones you'll recognize picture-in-picture, which allows you to pop out a video into a floating window.

App switching

Apple added contact shortcuts to the multi-tasking pane in iOS 8, but the large app previews means it's difficult to see just how many apps you have running.

This has been improved in iOS 9, with app previews now appearing as stacked cards, allowing you to flip through open applications far more easily and quickly, while getting a better overview on just how many you have open.

Spotlight Search

Apple's Spotlight Search on iPhone and iPad also benefits from the new and improved Siri, with app suggestions, keys contacts and other location and time specific info displayed on the main search page when you swipe left from your home screen.

You'll also spot videos in your search results, something which isn't available on iOS 8, which you can play without leaving the search screen.

Apple Pay

Unsurprisingly Apple Pay has been given a boost with iOS 9, but a word of warning -- it's still only supported on the iPhone 6 and 6 Plus (and Apple Watch).

Apple Pay on iOS 8 is compatible with a handful of US bank cards, but that support gets extended with iOS 9 to more providers including Discover, plus the service rolls out to users in the UK too. With iOS 9 you can also add store credit and debit cards, plus loyalty and reward cards too. These are stored in "Wallet", the new name for "Passbook" in iOS 9.

Apple Maps gets transit data

There's weren't any major changes to Apple Maps with iOS 8, just some minor tweaks here and there. iOS 9 on the other hand brings a significant upgrade to the app in the form of Transit.

Maps can now show you train, subway, bus and walking information, with routing options similar to Google Maps.

Support for older devices

Usually with a new iOS release older Apple devices are cast out into the cold with no update in sight, so it wasn't looking good for the iPad 2 and iPhone 4S.

That's not the case with iOS 9 however, as it will be coming to all the iPhones, iPads and iPods which received iOS 8. Therefore, iPhone

4S and above, iPad 2 and above, all iPad mini models, and iPod touch fifth-generation will get the latest software.

More free space

There's good news when it comes to downloading and installing iOS 9, as Apple has reduced its size. The iOS 8 over-the-air (OTA) update was a hefty 4.6GB download, which caused many users issues with space on their devices. Last year, Apple had received a lot of flak from all quarters for the iOS 8 update taking up too much space for the install files.

INTERNET EXPLORER

A.ANITHAMALAR

ASSISTANT PROFESSOR IN COMPUTER APPLICATIONS

Internet Explorer (formerly **Microsoft Internet Explorer** and **Windows Internet Explorer**, commonly abbreviated **IE** or **MSIE**) is a

series of graphical web developed by Microsoft and included as part of the Microsoft Windows line of operating systems, starting in 1995. It was first released as part of the add-on package Plus! for Windows 95 that year. Later versions were available as free downloads, or in service packs, and included in the OEM service releases of Windows 95 and later versions of Windows.

Internet Explorer is one of the most widely used web browsers, attaining a peak of about 95% usage share during 2002 and 2003. Its usage share has since declined with the launch of Firefox (2004) and Google Chrome (2008), as well as with the growing popularity of operating systems such as OS X, Linux and Android that do not run Internet Explorer. Estimates for Internet Explorer's overall market share range from 27.4% to 54.13%, as of October 2012 (browser market share is notoriously difficult to calculate). Microsoft spent over US$100 million per year on Internet Explorer in the late 1990s, with over 1000 people working on it by 1999.

Since its first release, Microsoft has added features and technologies such as basic table display (in version 1.5); XMLHttpRequest (in version 5), which aids creation of dynamic web pages; and Internationalized Domain Names (in version 7), which allow Web sites to have native-language addresses with non-Latin characters. The browser has also received scrutiny throughout its development for use of third-party technology (such as the source code of Spyglass

Mosaic, used without royalty in early versions) and security and privacy vulnerabilities, and both the United States and the European Union have alleged that integration of Internet Explorer with Windows has been to the detriment of other browsers.

The latest stable release is Internet Explorer 11, with an interface allowing for use as both a desktop application, and as a Windows 8 application.

Versions of Internet Explorer for other operating systems have also been produced, including an Xbox 360 version called Internet Explorer for Xbox and an embedded OEM version called Pocket Internet Explorer, later rebranded Internet Explorer Mobile, which is currently based on Internet Explorer 9 and made for Windows Phone, Windows CE, and previously, based on Internet Explorer 7 for Windows Mobile. It remains in development alongside the desktop versions. Internet Explorer for Mac and Internet Explorer for UNIX (Solaris and HP-UX) have been discontinued.

On April 26, 2014, Microsoft issued a security advisory relating to a vulnerability that could allow "remote code execution" in Internet Explorer versions 6 to 11. The vulnerability was resolved with a security update May 1, 2014.

History

The Internet Explorer project was started in the summer of 1994 by Thomas Reardon, who, according the Massachusetts Institute of

Technology Review of 2003, used source code from Spyglass,Inc. Mosaic, which was an early commercial web browser with formal ties to the pioneering NCSA Mosaic browser. In late 1994, Microsoft licensed Spyglass Mosaic for a quarterly fee plus a percentage of Microsoft's non-Windows revenues for the software. Although bearing a name similar to NCSA Mosaic, Spyglass Mosaic had used the NCSA Mosaic source code sparingly. Microsoft was sued by Synet Inc. in 1996 over the trademark infringement.

Early versions

The first version of Internet Explorer, **Microsoft Internet Explorer** (later referred to as **Internet Explorer 1**) made its debut on August 16, 1995. It was a reworked version of Spyglass Mosaic, which Microsoft licensed from spyglass Inc., like many other companies initiating browser development. It came with Microsoft Plus! For Windows 95 and the OEM release of Windows 95, and was installed as part of the *Internet Jumpstart Kit* in Plus! The Internet Explorer team began with about six people in early development. Internet Explorer 1.5 was released several months later for Windows NT and added support

for basic table rendering. By including it free of charge on their operating system, they did not have to pay royalties to Spyglass Inc, resulting in a lawsuit and a US$ 8 million settlement on January 22, 1997.

Windows Internet Explorer 8

Windows Internet Explorer 8 was released on March 19, 2009. It had been in development since August 2007 at the latest. On March 5, 2008, the first public beta (Beta 1) was released to the general public. On August 27, 2008, the second public beta (Beta 2) was released. It is supported in Windows XP SP2 and SP3, Windows Server 2003 SP2, Windows Vista, Window 7, and Windows Server 2008 on both 32-bit and 64-bit architectures. Internet Explorer 8 (IE8) RC1 was released on January 26, 2009. Internet Explorer 8 "Final" was released on March 19, 2009.

Security, ease of use, and improvements in RSS, CSS, and Ajax support are Microsoft's priorities for IE8. It includes much stricter compliance with web standards, including a planned full Cascading Style Sheets 2.1 compliance for the release version. All of these changes allowed Internet Explorer 8 to pass the Acid2 test. However, to prevent compatibility issues, IE8 also includes the IE7 rendering behavior. Sites that expect IE7 quirks can disable IE8's breaking changes by including a Meta element in the HEAD section of the HTML document. IE8 also includes numerous improvements to JavaScript support as well as

performance improvements, although it still does not pass the Acid3 test, with version 8.0 scoring 20/100. It includes support for accelerators, which allow supported web applications to be invoked without explicitly navigating to them; and Web Slices, which allows portions of a page to be subscribed to and monitored from a redesigned *Favorites Bar*. Other features include In private privacy features and the Smart Screen.

Windows Internet Explorer 9

Windows Internet Explorer 9 was released on March 14, 2011. Development for Internet Explorer 9 began shortly after the release of Internet Explorer 8. Microsoft first announced Internet Explorer 9 at PDC 2009, and spoke mainly about how it takes advantage of hardware acceleration in DirectX to improve the performance of web applications and quality of web typography. At MIX10, Microsoft showed and publicly released the first Platform Preview for Internet Explorer 9, a frame for IE9's engine not containing any UI of the browser.

Leading up to the release of the final browser, Microsoft released updated platform previews, each featuring improved JavaScript compiling (32-bit version), improved scores on the Acid3 test, as well as additional HTML5 standards support, approximately every 6 weeks. Ultimately, eight platform previews were released. The first public beta was released at a special event in San Francisco, which was themed around "the beauty of the web". The release candidate was released on February 10, 2011, and featured improved performance, refinements to

the UI, and further standards support. The final version was released during the South by Southwest (SXSW) music and film festival in Austin, Texas, on March 14, 2011.

Internet Explorer 9 is only supported on Windows Vista SP2, Windows 7, Windows Server 2008, and Windows Server 2008. It supports several CSS 3 properties (including border-radius, box-shadow, etc.), and embedded ICC v2 or v4 color profiles support via Windows Color System. The 32-bit version has faster JavaScript performance, this being due to a new JavaScript engine called "Chakra".

It also features hardware accelerated graphics rendering using Direct2D, hardware-accelerated text rendering using Direct Write, hardware-accelerated video rendering using Media Foundation, imaging support provided by Windows Imaging Component, and high fidelity printing powered by the XPS print pipeline. IE9 also supports the HTML5 video and audio tags and the web open Font Format. Internet Explorer 9 initially scored 95/100 on the Acid3 test, but has scored 100/100 since the test was updated in September 2011.

Internet Explorer was to be omitted from Windows 7 and Windows Server 2008 R2 in Europe, but Microsoft ultimately included it, with a browser option screen allowing users to select any of several web browsers (including Internet Explorer). Internet Explorer is now available on Xbox 360 with Kinect support, as of October 2012.

Internet Explorer 10

Internet Explorer 10 became generally available on October 26, 2012 alongside Windows 8 and Windows Server 2012. It became available for Windows 7 on February 26, 2013. Microsoft announced Internet Explorer 10 in April 2011 at MIX 11 in Las Vegas, releasing the first Platform Preview at the same time. At the show, it was said that Internet Explorer 10 was about 3 weeks in development. This release further improves upon standards support, including HTML5 Drag & Drop and CSS3 gradients. Internet Explorer 10 drops support for Windows Vista and will only run on Windows 7 Service Pack 1 and later. Internet Explorer 10 Release Preview was also released on the Windows 8 Release Preview platform.

Internet Explorer 11

Internet Explorer 11 is featured in a Windows 8.1 update which was released on October 17, 2013. It includes an incomplete mechanism for syncing tabs. It is a major update to its developer tools, enhanced scaling for high DPI screens, HTML5 pretender and prefetch, hardware-accelerated JPEG decoding, closed captioning, HTML5 full screen, and

is the first Internet Explorer to support WebGL and Google's protocol SPDY (starting at v3).

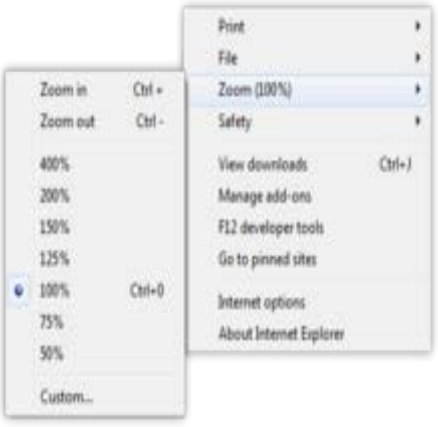
Windows 8.1 only: cryptography (WebCrypto), adaptive bitrate streaming (Media Source Extensions), Encrypted Media Extensions.

Internet Explorer 11 was made available for Window 7 users to download on November 7, 2013, with Automatic Updates in the following weeks.

Internet Explorer 11's user agent string now identifies the agent as "Trident" (the underlying layout engine) instead of "MSIE". It also announces compatibility with Gecko (the layout engine of Firefox).

Microsoft claims that Internet Explorer 11, running the WebKit SunSpider JavaScript Benchmark, is the fastest browser as of October 15, 2013.

Features



Internet Explorer has been designed to view a broad range of web pages and provide certain features within the operating system, including Microsoft Update. During the heyday of the browser wars,

Internet Explorer superseded Netscape only when it caught up technologically to support the progressive features of the time.

Standards support

Internet Explorer, using the Trident layout engine:

- Supports HTML 4.01, HTML 5, CSS Level 1, Level 2 and Level 3, XML 1.0, and DOM Level 1, with minor implementation gaps.
- Fully supports XSLT 1.0 as well as an obsolete Microsoft dialect of XSLT often referred to as *WD-xsl*, which was loosely based on the December 1998 W3C Working Draft of XSL. Support for XSLT 2.0 lies in the future: semi-official Microsoft bloggers have indicated that development is underway, but no dates have been announced.
- Almost full conformance to CSS 2.1 has been added in the Internet Explorer 8 release. The trident rendering engine in Internet Explorer 9 in 2011 scored highest of in the official W3C conformance text suite for CSS 2.1 of all major browsers.
- Supports XHTML in Internet Explorer 9 (Trident version 5.0). Prior versions can render XHTML documents authored with HTML compatibility principles and served with a text/html MIME-type.
- Supports a subset of SVG in Internet Explorer 9 (Trident version 5.0), excluding SMIL, SVG fonts and filters.

Internet Explorer uses DOCTYPE sniffing to choose between standards mode and a "quirks mode" in which it deliberately mimicks nonstandard behaviours of old versions of MSIE for HTML and CSS rendering on screen (Internet Explorer always uses standards mode for printing). It also provides its own dialect of ECMAScript called JScript. Internet Explorer had been subjected to criticism by Tim Berners-Lee over its limited support for SVG which is promoted by W3C.

Non-standard extensions

Internet Explorer has introduced an array of proprietary extensions to many of the standards, including HTML, CSS, and the DOM. This has resulted in a number of web pages that appear broken in standards-compliant web browsers and has introduced the need for a "quirks mode" to allow for rendering improper elements meant for Internet Explorer in these other browsers.

Internet Explorer has introduced a number of extensions to the DOM that have been adopted by other browsers. These include the innerHTML property, which provides access to the HTML string within an element; the XMLHttpRequest object, which allows the sending of HTTP request and receiving of HTTP response, and may be used to perform AJAX; and the design Mode attribute of the content Document object, which enables rich text editing of HTML documents . Some of these functionalities were not possible until the introduction of the W3C DOM methods. Its Ruby character extension to HTML is also accepted

as a module in W3C XHTML 1.1, though it is not found in all versions of W3C HTML.

Microsoft submitted several other features of IE for consideration by the W3C for standardization. These include the 'behaviour' CSS property, which connects the HTML elements with JScript behaviours (known as HTML Components, HTC); HTML+TIME profile, which adds timing and media synchronization support to HTML documents (similar to the W3C XHTML+SMIL), and the VML vector graphics file format. However, all were rejected, at least in their original forms; VML was subsequently combined with PGML (proposed by Adobe and Sun), resulting in the W3C-approved SVG format, currently one of the few vector image formats being used on the web, which IE did not support until version 9.

Other non-standard behavior's include: support for vertical text, but in a syntax different from W3C CSS3 candidate recommendation, support for a variety of image effects and page transitions, which are not found in W3C CSS, support for obfuscated script code, in particular Jscript.Encode. Support for embedding EOT fonts in web pages.

Favicon

Support for favicons was first added in Internet Explorer 5. Internet Explorer supports favicons in PNG, static GIF and native

Windows icon formats. In Windows Vista and later, Internet Explorer can display native Windows icons that have embedded PNG files.

Usability and accessibility

Internet Explorer makes use of the accessibility framework provided in Windows. Internet Explorer is also a user interface for FTP, with operations similar to that of Windows Explorer. POP-up blocking and tabbed browsing were added respectively in Internet Explorer 6 and Internet Explorer 7. Tabbed browsing can also be added to older versions by installing MSN search Toolbar or Yahoo Toolbar.

Cache

Internet Explorer caches visited content in the Temporary Internet Files folder to allow quicker access (or offline access) to previously visited pages. The content is indexed in a database file, known as Index.dat. Multiple Index.dat files exist which index different content—visited content, web feeds, visited URLs, cookies, etc.

Prior to IE7, clearing the cache used to clear the index but the files themselves were not reliably removed, posing a potential security and privacy risk. In IE7 and later, when the cache is cleared, the cache files are more reliably removed, and the index.dat file is overwritten with null bytes.

Caching has been improved in IE9.

Group Policy

Internet Explorer is fully configurable using Group Policy. Administrators of Windows Server domains (for domain-joined computers) or the local computer can apply and enforce a variety of settings on computers that affect the user interface (such as disabling menu items and individual configuration options), as well as underlying security features such as downloading of files, zone configuration, per-site settings, ActiveX control behaviour and others. Policy settings can be configured for each user and for each machine. Internet Explorer also supports Integrated Windows Authentication.

Architecture

The architecture of IE8: Previous versions had a similar architecture, except that both tabs and the UI were within the same process. Consequently, each browser window could have only one "tab process".

Internet Explorer uses a componentized architecture built on the Component Object Model (COM) technology. It consists of several major components, each of which is contained in a separate Dynamic-link library (DLL) and exposes a set of COM programming interfaces hosted by the Internet Explorer main executable, iexplore.exe:

- WinInet.dll is the protocol handler for HTTP, HTTPS and FTP. It handles all network communication over these protocols.

- URLMon.dll is responsible for MIME-type handling and downloads of web content, and provides a thread-safe wrapper around WinInet.dll and other protocol implementations.
- MSHTML.dll houses the Trident rendering engine introduced in Internet Explorer 4, which is responsible for displaying the pages on-screen and handling the Document Object Model of the web pages. MSHTML.dll parses the HTML/CSS file and creates the internal Dom tree representation of it. It also exposes a set of APIs for runtime inspection and modification of the DOM tree. The DOM tree is further processed by a layout engine which then renders the internal representation on screen.
- IEFrame.dll contains the user interface and window of IE in Internet Explorer 7 and above.
- ShDocVw.dll provides the navigation, local caching and history functionalities for the browser.
- BrowseUI.dll is responsible for rendering the browser user interface such as menus and toolbars.

Internet Explorer does not include any native scripting functionality. Rather, MSHTML.dll exposes an API that permit a programmer to develop a scripting environment to be plugged-in and to access the DOM tree. Internet Explorer 8 includes the bindings for the Active Scripting engine, which is a part of Microsoft Windows and

allows any language implemented as an Active Scripting module to be used for client-side scripting.

By default, only the JScript and VBScript modules are provided; third party implementations like Screaming Monkey (for ECMAScript 4 support) can also be used. Microsoft also makes available the Microsoft Silverlight runtime (not supported in WindoesRT) that allows CLI Languages, including DLR-based dynamic languages like Iron Python and Iron Ruby, to be used for client-side scripting.

Internet Explorer 8 introduces some major architectural changes, called *Loosely Coupled IE* (LCIE). LCIE separates the main window process (frame process) from the processes hosting the different web applications in different tabs (tab processes). A frame process can create multiple tab processes, each of which can be of a different integrity level; each tab process can host multiple web sites. The processes use asynchronous Inter-Process Communication to synchronize themselves. Generally, there will be a single frame process for all web sites.

In Windows Vista with Protected Mode turned on, however, opening privileged content (such as local HTML pages) will create a new tab process as it will not be constrained by Protected Mode.

Extensibility

Internet Explorer exposes a set of Component Object Model (COM) interfaces that allows add-ons to extend the functionality of the browser. Extensibility is divided into two types: Browser extensibility

and content extensibility. Browser extensibility involves adding context menu entries, toolbars, menu items or Browser Helper Objects (BHO). BHOs are used to extend the feature set of the browser, whereas the other extensibility options are used to expose that feature in the user interface. Content extensibility adds support for non-native content formats. It allows Internet Explorer to handle new file formats and new protocols, e.g. WebM or SPDY. In addition, web pages can integrate widgets known as ActiveX controls which run on Windows only but have vast potentials to extend the content capabilities; Adobe Flash Player and Microsoft Silverlight are examples. Add-ons can be installed either locally or directly by a web site.

Since malicious add-ons can compromise the security of a system, Internet Explorer implements several safeguards. Internet Explorer 6 with Service Pack 2 and later feature an Add-on Manager for enabling or disabling individual add-ons, complemented by a "No Add-Ons" mode. Starting with Windows Vista, Internet Explorer and its BHOs run with restricted privileges and are isolated from the rest of the system. Internet Explorer 9 introduced a new component — Add-on Performance Advisor.

Add-on Performance Advisor shows a notification when one or more of installed add-ons exceed a pre-set performance threshold. The notification appears in the Notification Bar when the user launches the browser. Windows 8 and Windows RT introduce a Metro-style version

of Internet Explorer that is entirely sandboxed and does not run add-ons at all. In addition, Windows RT cannot download or install ActiveX controls at all; although existing ones bundled with Windows RT still run in the traditional version of Internet Explorer.

Internet Explorer itself can be hosted by other applications via a set of COM interfaces. This can be used to embed the browser functionality inside a computer program or create Internet Explorer Shells.

Security

Internet Explorer uses a zone-based security framework that group's sites based on certain conditions, including whether it is an Internet- or intranet-based site as well as a user-editable whitelist. Security restrictions are applied per zone; all the sites in a zone are subject to the restrictions.

Internet Explorer 6 SP2 onwards uses the *Attachment Execution Service* of Microsoft Windows to mark executable files downloaded from the Internet as being potentially unsafe. Accessing files marked as such will prompt the user to make an explicit trust decision to execute the file, as executable originating from the Internet can be potentially unsafe. This helps in preventing accidental installation of malware.

Internet Explorer 7 introduced the phishing filter that restricts access to phishing sites unless the user overrides the decision. With version 8, it also blocks access to sites known to host malware.

Downloads are also checked to see if they are known to be malware-infected.

In Windows Vista, Internet Explorer by default runs in what is called *Protected Mode*, where the privileges of the browser itself are severely restricted—it cannot make any system-wide changes. One can optionally turn this mode off but this is not recommended. This also effectively restricts the privileges of any add-ons. As a result, even if the browser or any add-on is compromised, the damage the security breach can cause is limited.

Patches and updates to the browser are released periodically and made available through the Windows Update service, as well as through Automatic Updates. Although security patches continue to be released for a range of platforms, most feature additions and security infrastructure improvements are only made available on operating systems which are in Microsoft's mainstream support phase.

On December 16, 2008, Trend Micro recommended users switch to rival browsers until an emergency IE patch was released to fix a potential security risk which "could allow outside users to take control of a person's computer and steal their passwords". Microsoft representatives countered this recommendation, claiming that "0.02% of internet sites" were affected by the flaw.

On December 17, 2008, a fix to the security problem above became available, with the release of the Security Update for Internet

Explorer KB960714, which is available from Microsoft Windows Update's webpage. Microsoft has said that this update fixes the security risk found by Trend Micro the previous day.

In 2011, a report by Accuvant, funded by Google, rated the security (based on sandboxing) of Internet Explorer worse than Google Chrome but better than Mozilla Firefox.

Security vulnerabilities

Internet Explorer has been subjected to many security vulnerabilities and concerns: Much of the spyware, adware, and computer viruses across the Internet are made possible by exploitable bugs and flaws in the security architecture of Internet Explorer, sometimes requiring nothing more than viewing of a malicious web page in order to install them. This is known as a "drive-by install". There are also attempts to trick the user into installing malicious software by misrepresenting the software's true purpose in the description section of an ActiveX security alert.

A number of security flaws affecting IE originated not in the browser itself, but ActiveX-based add-ons used by it. Because the add-ons have the same privilege as IE, the flaws can be as critical as browser flaws. This has led to the ActiveX-based architecture being criticized for being fault-prone. By 2005, some experts maintained that the dangers of ActiveX have been overstated and there were safeguards in place. In

2006, new techniques using automated testing found more than a hundred vulnerabilities in standard Microsoft ActiveX components. Security features introduced in Internet Explorer 7 mitigated some of these vulnerabilities.

Internet Explorer in 2008 had a number of published security vulnerabilities. According to research done by security research firm Secunia, Microsoft did not respond as quickly as its competitors in fixing security holes and making patches available. The firm also reported 366 vulnerabilities in ActiveX controls, an increase from the prior year.

According to an October 2010 report in The Register, researcher Chris Evans had detected a known security vulnerability which, then dating back to 2008 had not been fixed for at least 600 days. Microsoft says that it had known about this vulnerability but it was of very low severity as the victim web site must be configured in a special way for this attack to be feasible at all.

In December 2010, researchers have been able to bypass the "Protected Mode" feature in Internet Explorer.

Vulnerability exploited in attacks on U.S. firms

In an advisory on January 14, 2010, Microsoft said that attackers targeting Google and other U.S. companies used software that exploits a security hole, which had already been patched, in Internet Explorer. The

vulnerability affected Internet Explorer 6 on Windows XP and Server 2003, IE6 SP1 on Windows 2000 SP4, IE7 on Windows Vista, XP, Server 2008 and Server 2003, and IE8 on Windows 7, Vista, XP, Server 2003, and Server 2008 (R2).

The German Government warned users against using Internet Explorer and recommended switching to an alternative web browser, due to the major security hole described above that was exploited in Internet Explorer. The Australian and French Government issued a similar warning a few days later. The first browser they recommended was Mozilla Firefox, followed by Google Chrome.

Major vulnerability across versions

On April 26, 2014, Microsoft issued a security advisory relating to CVE-2014-1776, a vulnerability that could allow "remote code execution" in Internet Explorer versions 6 to 11. On April 28, 2014, the United States Department of Homeland Security's United States Computer Emergency Readiness Team (US-CERT) released an advisory stating that the vulnerability could result in "the complete compromise" of an affected system. US-CERT recommended reviewing Microsoft's suggestions to mitigate an attack or using an alternate browser until the bug is fixed. The UK National Computer Emergency Response Team (CERT-UK) published advisory announcing similar concerns and for users to take the additional step of ensuring their antivirus software is

up-to-date. Symantec, a cyber-security firm, confirmed that "the vulnerability crashes Internet Explorer on Windows XP". The vulnerability was resolved on May 1, 2014, with a security update.

Market adoption and usage share

The adoption rate of Internet Explorer seems to be closely related to that of Microsoft Windows, as it is the default web browser that comes with Windows. Since the integration of Internet Explorer 2.0 with Windows 95 OSR 1 in 1996, and especially after version 4.0's release, the adoption was greatly accelerated: from below 20% in 1996 to about 40% in 1998 and over 80% in 2000.

Firefox 1.0 had surpassed Internet Explorer 5 in early 2005 with Firefox 1.0 at roughly 8 percent market share.

Approximate usage over time based on various usage share counters averaged for the year overall, or for the fourth quarter, or for the last month in the year depending on availability of reference.

According to StatCounter Internet Explorer's marketshare fell below 50% in September 2010. In May 2012 it was announced that Google Chrome overtook Internet Explorer as the most used browser worldwide.

Industry adoption

Browser Helper Objects are also used by many search engine companies and third parties for creating add-ons that access their services, such as search engine toolbars. Because of the use of COM, it

is possible to embed web-browsing functionality in third-party applications. Hence, there are a number of Internet Explorer shells, and a number of content-centric applications like RealPlayer also use Internet Explorer's web browsing module for viewing web pages within the applications.

Removal

While a major upgrade of Internet Explorer can be uninstalled in a traditional way if the user has saved the original application files for installation, the matter of uninstalling the version of the browser that has shipped with an operating system remains a controversial one.

The idea of removing a stock install of Internet Explorer from a Windows system was proposed during the United States Microsoft case. One of Microsoft's arguments during the trial was that removing Internet Explorer from Windows may result in system instability. Indeed, programs that depend on libraries installed by IE, including Windows help and support system, fail to function without IE. Before Windows vista, it was not possible to run Windows Update without IE because the service used ActiveX technology, which no other web browser supports.

Impersonation by malware

The popularity of Internet Explorer has led to the appearance of malware abusing its name. In January 28, 2011, a fake Internet Explorer browser calling itself "Internet Explorer – Emergency Mode" appeared along with the fake AVG antivirus and other fake antiviruses. It closely

resembles the real Internet Explorer, but has fewer buttons and no search bar. If a user launches any other browser such as Google Chrome, Mozilla Firefox, Opera, Safari, or the real Internet Explorer, this browser will pop-up instead. It also displays a fake error message, claiming that the computer is infected with malware and Internet Explorer has entered Emergency Mode. It blocks access to legitimate sites such as Google if

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infected users try to access them.

ATutor is an Open Source Web-based **Learning Management System (LMS)** used to develop and deliver online courses. Administrators can install or update ATutor in minutes, develop custom themes to give ATutor a new look, and easily extend its functionality with feature modules. Educators can quickly assemble, package, and redistribute Web-based instructional content, easily import prepackaged content, and conduct their courses online. Students learn in an accessible, adaptive, social learning environment.

ATutor's base in Open Source technology makes it a cost effective tool for both small and large organizations developing instructional content and delivering courses on the Web. **Comprehensive help** is

available through the **documentation**, through a number of support services, or through the community **forums**. Full language support is available through the **ATutor Translation Site**.

Accessibility

ATutor supports these accessibility standards:

- W3C WCAG 1.0
- W3C WCAG 2.0
- W3C ATAG 2.0
- US Section 508
- Italy Stanca Act
- IMS AccessForAll 2.0
- ISO/IEC 24751

Interoperability

ATutor supports these interoperability standards

- OpenSocial 1.0
- OAuth Authentication Protocol
- IMS Content Packaging 1.1.2+
- SCORM Content Packaging
- SCORM 1.2 LMS RTE3
- IMS Question Test Interoperability (QTI) 1.2/2.1
- IMS BasicLTI 1.0
- IMS Common Cartridge 1.0

- W3C XHTML 1.0

COMPUTER GAME REDUCES ISSUES ASSOCIATED WITH ADHD IN CHILDREN

D.RAJAGOPAL

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The software studied in the research syncs with a wireless headband that monitors brainwaves during game-play, and works by adjusting the level of difficulty and scoring system in order to target and train the attention control, working memory, and impulse-control. This neurocognitive training was administered in case studies of five elementary school students in China and resulted in overall improved behavior, assignment completion, and relationships with peers and teachers.

"The present study implies that the neurocognitive training can result in broader and more socially meaningful outcomes than improvement of **ADHD (Attention Deficit Hyperactivity Disorder)** symptoms," wrote study authors Han Jiang and Stuart Johnstone. **"Two reasons possibly explain the side effect. First, the increased attentive behavior in class and improved quality of schoolwork improved**

these children's social status. Second, game-driven and task-directed features of the training increased the children's confidence in doing tasks."

Prior to the study, all of the parents gave their children ratings indicating problems in the categories of hyperactivity, inattention, and acceptance by peers and teachers. After the training, parents rated their children's behavior at the normal level and teachers reported less frequency of ADHD symptoms. Additionally, four of the five groups of parents saw improvements in their child's interactions with teachers and peers. The study found that increases in teacher acceptance, such as public praise and greater inclusion in classroom activities, resulted in improved peer acceptance.

Jiang and Johnstone commented, "These findings indicate that once the children have received positive support and technical aids, they can achieve dramatic improvements. The outcomes have provided the foundation for a large randomized control trial which is currently underway in Australia, as well as two further controlled studies in China."

Types of ADHD:

- Combined ADHD: This involves symptoms of both inattentiveness and hyperactivity impulsivity.
- Inattentive ADHD: This is marked by impaired attention and concentration.

TOP 10 LEADERSHIP QUALITIES OF A PROJECT MANAGER

T. VADIVEL

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Inspires a Shared Vision

An effective project leader is often described as having a vision of where to go and the ability to articulate it. Visionaries thrive on change and being able to draw new boundaries. It was once said that a leader is someone who "lifts us up, gives us a reason for being and gives the vision and spirit to change." Visionary leaders enable people to feel they have a real stake in the project. They empower people to experience the vision on their own.

A GOOD COMMUNICATOR

The ability to communicate with people at all levels is almost always named as the second most important skill by project managers and team members. Project leadership calls for clear communication about goals, responsibility, performance, expectations and feedback. There is a great deal of value placed on openness and directness. The project leader is also the team's link to the larger organization. The leader must have the ability to effectively negotiate and use persuasion when necessary to ensure the success of the team and project. Through effective communication, project leaders support individual and team

achievements by creating explicit guidelines for accomplishing results and for the career advancement of team members.

INTEGRITY

One of the most important things a project leader must remember is that his or her actions, and not words, set the modus operandi for the team. Good leadership demands commitment to, and demonstration of, ethical practices. Creating standards for ethical behavior for oneself and living by these standards, as well as rewarding those who exemplify these practices, are responsibilities of project leaders.

Leadership motivated by self-interest does not serve the wellbeing of the team. Leadership based on integrity represents nothing less than a set of values others share, behavior consistent with values and dedication to honesty with self and team members. In other words the leader "walks the talk" and in the process earns trust.

ENTHUSIASM

Plain and simple, we don't like leaders who are negative - they bring us down. We want leaders with enthusiasm, with a bounce in their step, with a can-do attitude. We want to believe that we are part of an invigorating journey - we want to feel alive. We tend to follow people with a can-do attitude, not those who give us 200 reasons why something can't be done.

Enthusiastic leaders are committed to their goals and express this commitment through optimism. Leadership emerges as someone

expresses such confident commitment to a project that others want to share his or her optimistic expectations. Enthusiasm is contagious and effective leaders know it.

EMPATHY

What is the difference between empathy and sympathy? Although the words are similar, they are, in fact, mutually exclusive. According to Norman Paul, in sympathy the subject is principally absorbed in his or her own feelings as they are projected into the object and has little concern for the reality and validity of the object's special experience. Empathy, on the other hand, presupposes the existence of the object as a separate individual, entitled to his or her own feelings, ideas and emotional history (Paul, 1970). As one student so eloquently put it, "It's nice when a project leader acknowledges that we all have a life outside of work."

COMPETENCE

Simply put, to enlist in another's cause, we must believe that that person knows what he or she is doing. Leadership competence does not however necessarily refer to the project leader's technical abilities in the core technology of the business. As project management continues to be recognized as a field in and of itself, project leaders will be chosen based on their ability to successfully lead others rather than on technical expertise, as in the past. Having a winning track record is the surest way to be considered competent. Expertise in leadership skills is another

dimension in competence. The ability to challenge, inspire, enable, model and encourage must be demonstrated if leaders are to be seen as capable and competent.

ABILITY TO DELEGATE TASKS

Trust is an essential element in the relationship of a project leader and his or her team. You demonstrate your trust in others through your actions - how much you check and control their work, how much you delegate and how much you allow people to participate. Individuals who are unable to trust other people often fail as leaders and forever remain little more that micro-managers, or end up doing all of the work themselves. As one project management student put it, "A good leader is a little lazy." An interesting perspective!

COOL UNDER PRESSURE

In a perfect world, projects would be delivered on time, under budget and with no major problems or obstacles to overcome. But we don't live in a perfect world - projects have problems. A leader with a hardy attitude will take these problems in stride. When leaders encounter a stressful event, they consider it interesting, they feel they can influence the outcome and they see it as an opportunity. "Out of the uncertainty and chaos of change, leaders rise up and articulate a new image of the future that pulls the project together." (Bennis 1997) And remember - never let them see you sweat.

TEAM-BUILDING SKILLS

A team builder can best be defined as a strong person who provides the substance that holds the team together in common purpose toward the right objective. In order for a team to progress from a group of strangers to a single cohesive unit, the leader must understand the process and dynamics required for this transformation. He or she must also know the appropriate leadership style to use during each stage of team development. The leader must also have an understanding of the different team players styles and how to capitalize on each at the proper time, for the problem at hand.

PROBLEM SOLVING SKILLS

Although an effective leader is said to share problem-solving responsibilities with the team, we expect our project leaders to have excellent problem-solving skills themselves. They have a "fresh, creative response to here-and-now opportunities," and not much concern with how others have performed them.

PLACEMENT RELATED WEBSITES

K.RAJKUMAR

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JOB PORTALS:

- **www.naukri.com**
- **www.monsterindia.com**
- **www.jobstreet.com**
- **www.jobsahead.com**
- **www.timesjobs.com**

APTITUDE SKILLS:

- **www.aptitude9.com**
- **www.aptitudecoach.com**
- **www.way2freshers.com**
- **www.placementpapers.net**
- **www. ittestpapers.com**
- **www. Freshersworld.com**
- **www.freshershome.com**
- **www.vyoms.com**
- **www. Indiabix.com**
- **www.123eng.com**
- **www.techprepartion.com**
- **www.kent.ac.u**
- **www.centraltest.com**
- **www.pskills.org**
- **www.skill-guru.com**
- **www.mapmytalent.in**

- **www.queendom.com**

TECHNICAL SKILLS:

- **www.brainbench.com**
- **www.freeskills.com**
- **www.programmingsimplified.com**
- **www.wiziq.com**
- **www.a4academics.com**
- **www.placement.freshersworld.com**
- **www.prep.youth4work.com**
- **www.aptitude.students3k.com**
- **www.proprofs.com**
- **www.pskills.org**
- **www.jbigdeal.com**
- **www.placementyogi.com**
- **www.careertest.in**
- **www.durgajobs.com**
- **www.cquestions.com**
- **www.sanfoundry.com**

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