Browser Security

Objective

- Web browser
- Understanding the usage of Web browsers
- Types of web browsers
- Risks towards web browser
- Securing web browser
- How to secure web browser?

- Web browser is used to gain and access the information and also resources on the World Wide Web.

- It is a software application used to trace and display the web pages

Why Secure Your Browser

- Today, web browsers such as Internet Explorer, Mozilla Firefox, and Apple Safari (to name a few), are installed on almost all computers.
- Because web browsers are used so frequently, it is vital to configure them securely.
- Often, the web browser that comes with an operating system is not set up in a secure default configuration.
- Not securing your web browser can lead quickly to a variety of computer problems:
  - Spyware being

- Ideally, computer users should evaluate the risks from the software they use.

- Many computers are sold with software already loaded.

- Whether installed by a computer manufacturer, operating system maker

- The first step in assessing the vulnerability of your computer is to find out what software is installed and how one program will interact with another.

Various Threats from software attacks

- Many users have a tendency to click on links without considering the risks of their actions.
- Web page addresses can be disguised or take you to an unexpected site.
- Many web browsers are configured to provide increased functionality at the cost of decreased security.
- New security vulnerabilities may have been discovered since the software was configured and packaged by the manufacturer.
- Computer systems and software packages may be bundled with additional software, which increases the number of vulnerabilities that may be attacked.

- Third-party software may not have a mechanism for receiving security updates.
- Many websites require that users enable certain features or install more software, putting the computer at additional risk.
- Many users do not know how to configure their web browsers securely.
- Many users are unwilling to enable or disable functionality as required to secure their web browser.

Web Browser Features and Risks

- Attackers focus on exploiting client-side systems (your computer) through various vulnerabilities.
- They use these vulnerabilities to take control of your computer, steal your information, destroy your files, and use your computer to attack other computers.
- A low-cost way attackers do this is by exploiting vulnerabilities in web browsers.
- An attacker can create a malicious web page that will install Trojan software or spyware that will steal your information

- Rather than actively targeting and attacking vulnerable systems, a malicious website can passively compromise systems as the site is visited.
- A malicious HTML document can also be emailed to victims. In these cases, the act of opening the email or attachment can compromise the system.

- The URL represents
  http://www.infosecawareness.in
- Each URL is divided into different sections

Usage of Web browsers

- Web browser is a software application that runs on internet and allows viewing the web pages, as well as content, technologies, videos, music, graphics, animations and many more.

Types of web browsers

- There are different types of web browsers available with different features.
- A web browser is a tool used not only on the personal computers but it also used on mobile phones to access the information.

Popular web browsers

- Internet Explorer
- Mozilla Fire fox
- Google Chrome
- Safari
- Many More

Risks towards web browser

- There are increased threats from software attacks taking advantage of vulnerable web browsers.
- The vulnerabilities are exploited and directed at web browsers with the help of compromised or malicious web sites

How to secure your web browser

- Security zone
- Trusted sites
- In private browsing
- Tracking options
- Many more

IE security Features

- Browse in in private mode
- Smart screen filter
- ActiveX filter
- Tracking protection
- Delete browsing history

Firefox Security features

- Tracking
- Security zone
- Block forged websites
- Many more

- **ActiveX** is a technology used by Microsoft Internet Explorer on Microsoft Windows systems.
- ActiveX allows applications or parts of applications to be utilized by the web browser.
- A web page can use ActiveX components that may already reside on a Windows system, or a site may provide the component as a downloadable object.
- This gives extra functionality to traditional web browsing, but may also introduce more severe vulnerabilities if not properly implemented.

- ActiveX has been plagued with various vulnerabilities and implementation issues.
- One problem with using ActiveX in a web browser is that it greatly increases the attack surface, or “attack ability,” of a system.
- Installing any Windows application introduces the possibility of new ActiveX controls being installed.

- **Java** is an object-oriented programming language that can be used to develop active content for websites.
- A Java Virtual Machine, or JVM, is used to execute the Java code, provided by the website.
- Some operating systems come with a JVM, while others require a JVM to be installed before Java can be used.
- Java applets are operating system independent.

- **Plug-ins** are applications intended for use in the web browser.
- Netscape has developed the NPAPI standard for developing plug-ins, but this standard is used by multiple web browsers, including Mozilla Firefox and Safari.
- Plug-ins are similar to ActiveX controls but cannot be executed outside of a web browser.
- Adobe Flash is an example of an application that is available as a plug-in.
- Plug-ins can contain programming flaws such as buffer overflows

- **Cookies** are files placed on your system to store data for specific websites.
- A cookie can contain any information that a website is designed to place in it.
- Cookies may contain information about the sites you visited, or may even contain credentials for accessing the site.
- Cookies are designed to be readable only by the website that created the cookie.
- Session cookies are cleared when the browser is closed, and
- Persistent cookies will remain on the computer

JavaScript, also known as ECMAScript, is a scripting language that is used to make websites more interactive.

There are specifications in the JavaScript standard that restrict certain features such as accessing local files.

VBScript is another scripting language that is unique to Microsoft Windows Internet Explorer.

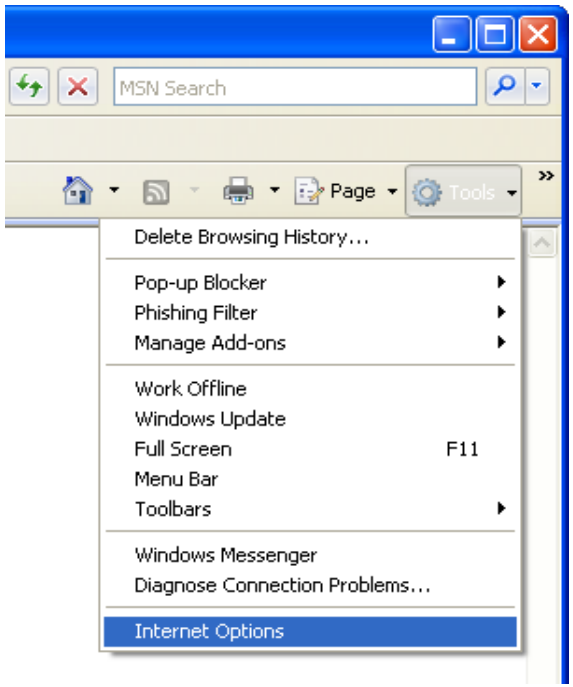
VBScript is similar to JavaScript, but it is not as widely used in websites because of limited compatibility with other browsers.

How to Secure Your Web Browser

- Microsoft Internet Explorer (IE) is a web browser integrated into the Microsoft Windows operating system

Here are steps to disable various features in Internet Explorer

In order to change settings for Internet Explorer, select Tools then Internet Options…



How do you access Internet?

- Web Browser
  - It is a software application used to trace and display the web pages.

Search Engines

- Search engines provide information with fast, easy access to any kind of material on the internet.
  - Google
  - Yahoo
  - Bing
  - Many more

Risk by Search Engine

- It can be easy to access the inappropriate material on the internet.
- Accidentally you may be redirected to unsecured sites.

Risk by Web Searches

Toon porn traps naive tweens

August 27th, 2009

By Our Correspondent

There was a time when parents worried about the effects of violent video games on their kids. But now, friendly Mickey, silly Tom and Jerry and hilarious Popeye could warrant a warning label. The growing popularity of 'toon porn' (animated porn featuring Disney and other children's cartoon characters) could turn an innocent Google search into an undesirable situation for parents and kids, with 37,80,000 toon porn links being thrown up at the click of a mouse. Because of the deliberately misleading labelling, 'safe search' is sometimes rendered ineffective and net-sawy kids, looking online for links to their favourite characters run the risk of being exposed to toon porn websites and images. Once ingenuous curiosity kicks in, download buttons are hit and children as young as nine become consumers of this very adult content. Experts confirm this could lead to not just warped notions about sex, but also behavioural problems.

Ranjana Haladkar, director, Roshni, confirms the alarming trend, "We often receive calls from children in their early teens, who have trouble concentrating on their academics. The reason they confess is because their thoughts are constantly on issues related to sex. These kids are usually exposed to porn."

In one such recent case, a doctor couple in the city was shocked to discover that their 11-year-old son was visiting adult websites in their absence. The youngster (who had a room to himself after his brother moved out), would surf porn websites late into the night and acquired nearly 8GB of pornographic downloads. His addiction came to light when the once academically brilliant and outgoing boy began failing his subjects and preferred staying indoors all the time. Things came to such a head that he threatened to commit suicide when his parents terminated the Internet connection. It took several counselling sessions to help him get rid of his obsession with porn.

Children using the internet unsupervised find it easy to access adult websites. "We were shocked when we discovered our 10-year-old neighbour was addicted to porn. What started off with toon porn graduated to adult

How to avoid ?

- Safe search filtering

Safe Search in Yahoo

YAHOO! SEARCH Welcome, Sign Out - Yahoo! - Search Home - Help

Search Preferences

SafeSearch

Save Cancel

SafeSearch Filter

Applies when I'm signed in:

- (•) Filter out adult Web, video, and image search results - *SafeSearch On*
- ( ) Filter out adult video and image search results only - *SafeSearch On*
- ( ) Do not filter results (results may include adult content) - *SafeSearch Off*

Learn more

SafeSearch lock

Applies when anyone using this computer is signed out or signed in as under 18:

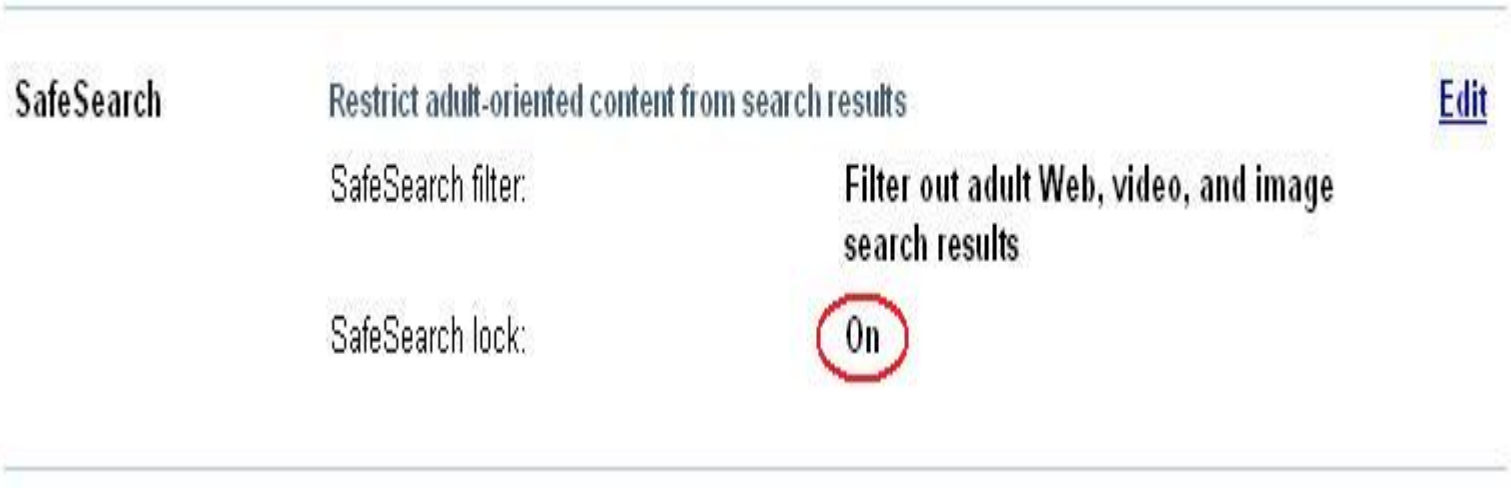
- [x] Lock SafeSearch setting to filter out adult Web, video, and image search results

Note: Any user signed in on your computer as 18 or older can change this setting. We recommend periodically checking the SafeSearch Lock settings.

Advisory: Yahoo! SafeSearch is designed to filter out explicit, adult-oriented content from Yahoo! Search results. However, Yahoo! cannot guarantee that all explicit content will be filtered out.

Learn more about protecting children online.

Safe search in Yahoo



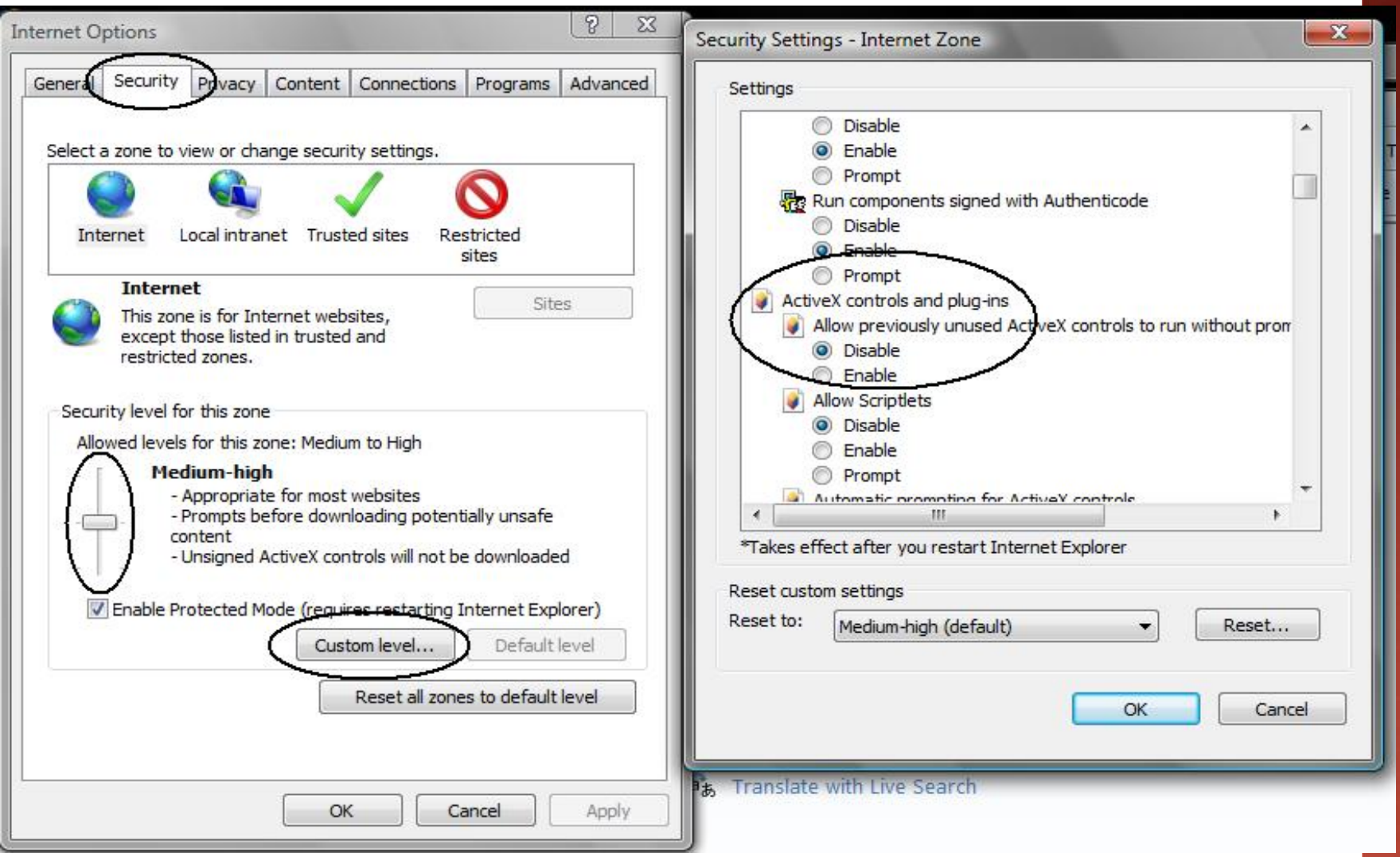
Remember

- Non of these filtering are 100% accurate –sometimes unsuitable content may still slip through.

Web Browsers Risks

- **ActiveX**
  - Used on Microsoft Windows systems. ActiveX allows applications or parts of applications to be utilized by the web browser.
- **Cross-Site Scripting**
  - Referred as XSS, is a vulnerability in a web site that permits an attacker to leverage the trust relationship that you have with that site.
- **Cookies**
  - Contains the information about the sites you visited.
- **Pop-up**
  - It is a form of online advertisements when a web site is open by web browser.
- **Unsecured sites**
  - Not all the sites are legitimate sites

How to Disable ActiveX in IE 8



http://www.indg.gov.in/ - Windows Internet Explorer

http://www.indg.gov.in/

how to check in history in IE7

Google | Go | Bookmarks | 1 blocked | Check | AutoLink | AutoFill | Send to | Settings

how to check in history in IE7 | Favorites | PC Health | Spaces

Search Web | Mail | My Yahoo! | Basketball | Games | Music | Answers

http://www.indg.gov.in/ | Page | Tools

This website wants to run the following add-on: 'MSXML 5.0' from 'Microsoft Corporation'. If you trust the website and the add-on and want to allow it to run, click here...

Log in | Join

indg INDIA
DEVELOPMENT GATEWAY

RuralEnergy

Internet Explorer - Security Warning

Do you want to run this ActiveX control?

Name: MSXML 5.0

Publisher: Microsoft Corporation

Run | Don't Run

This ActiveX control was previously added to your computer when you installed another program, or when Windows was installed. You should only run it if you trust the publisher and the website requesting it. What's the risk?

Home

- Rural India
- National Farmers Commission
- Right to Information
- InDG Team
- Events

Latest News

First time Puducherry Govt. implements e-Administration

India Develo Gatew

InDG (In specific country r National portal of es, with specific objective of reaching the 'un-reached' rural communities of India, especially women and poor.

The Gateway aims to provide credible information products and services that respond to the real and strategic needs of the rural communities, especially the marginalised and poor, in their local language. It will catalyse the use of ICT tools for knowledge sharing, leading to development. The Gateway essentially uses local Indian languages to communicate with the majority of Indian population. English will also be used. The Gateway presently focuses on few key areas – namely, Health (including Water and Sanitation), Primary Education, Agriculture and Allied Activities, Rural Energy and Environment, and e - Governance. InDG will continuously update and add areas of crucial importance to rural development

search

Login Name

Password

log in

Forgot your password?

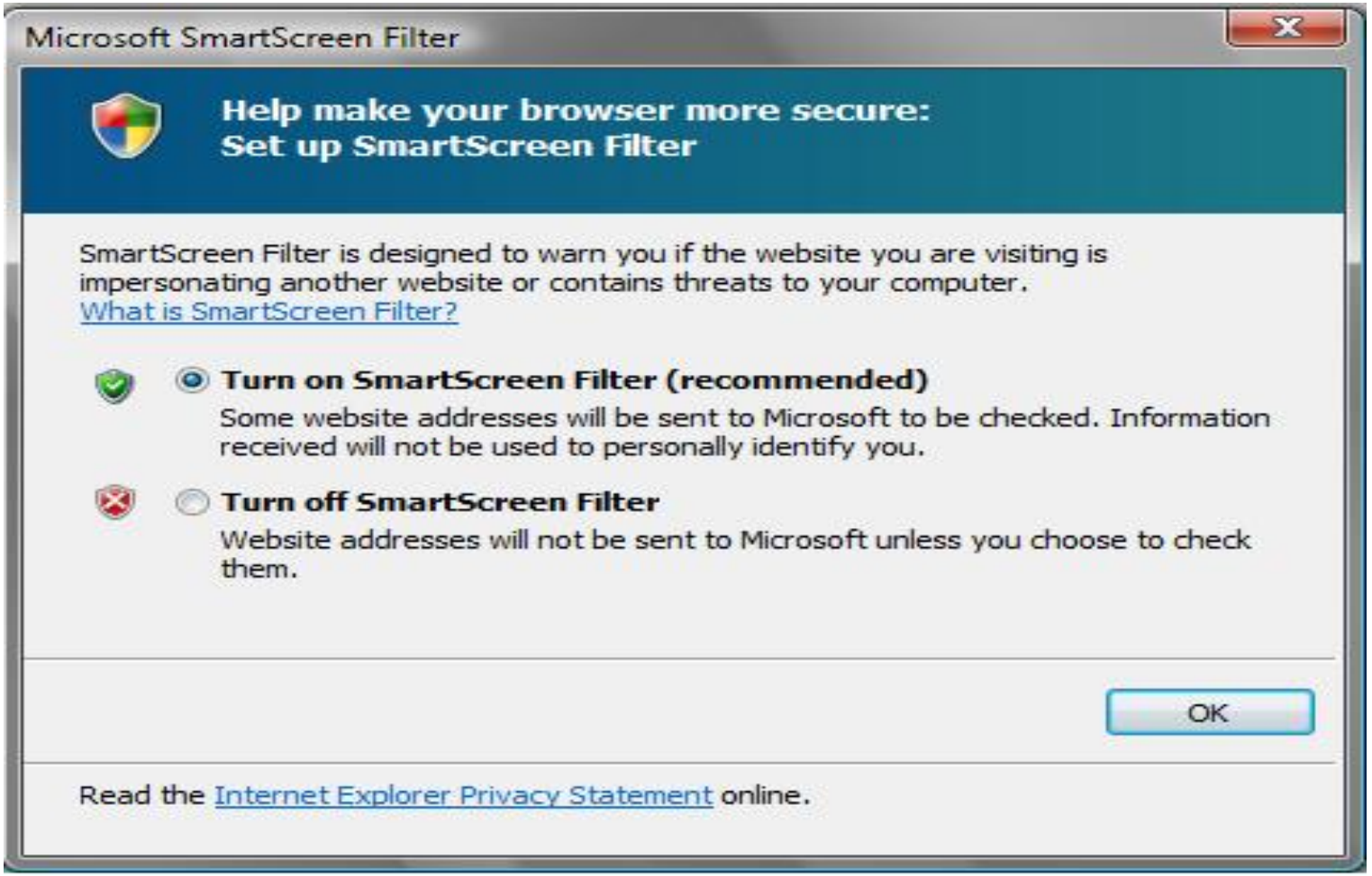
New user?

(10 items remaining) Downloading picture http://203.199.132.48:8099/cedu1.jpg...

Internet | 100%

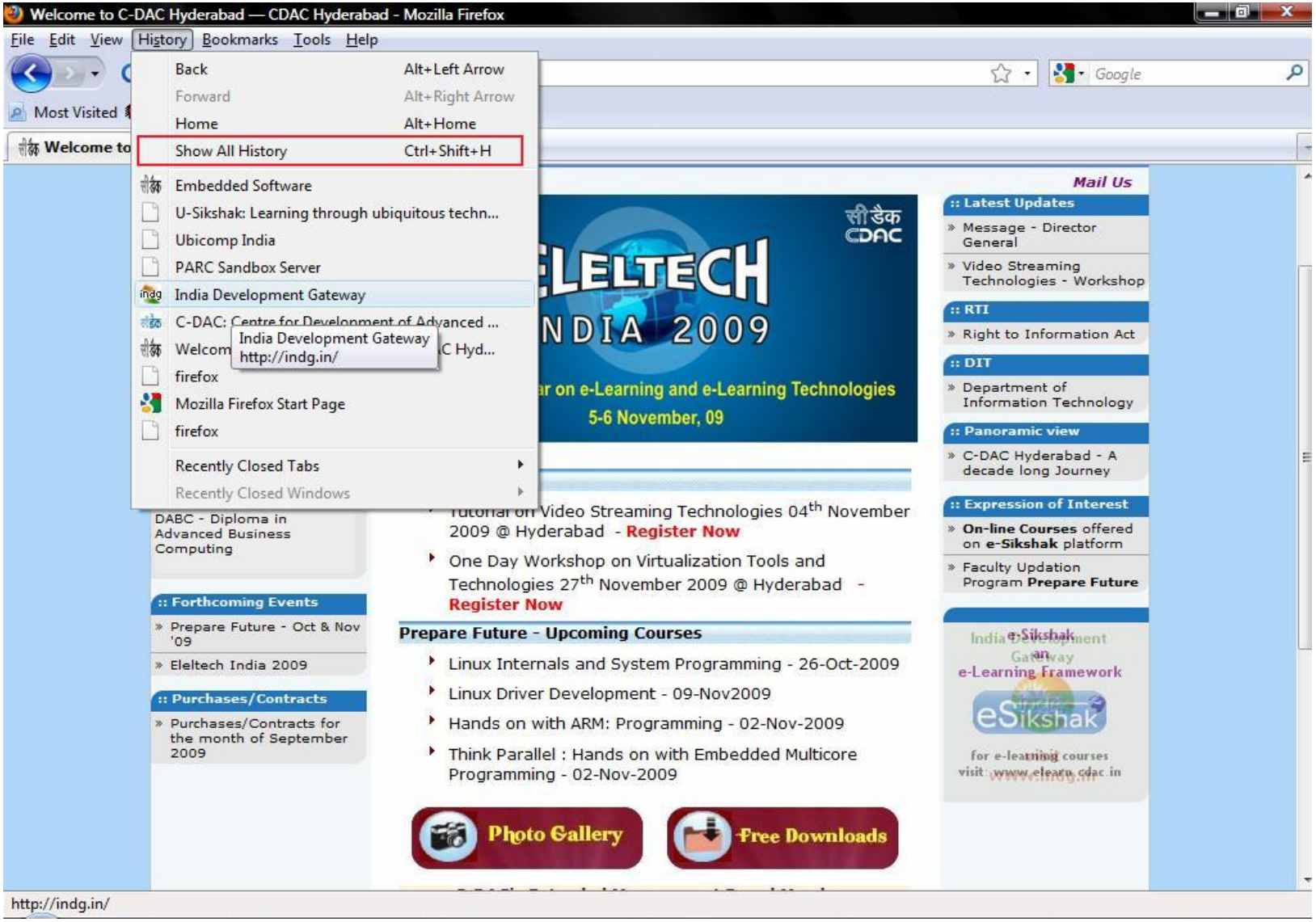
Start | 2 Windows Explorer | 5 Internet Expl... | Protect Your Family | Presentation1 | untitled - Paint | 3 Firefox | EN | 10:07 AM

SmartScreen Filter in IE 8

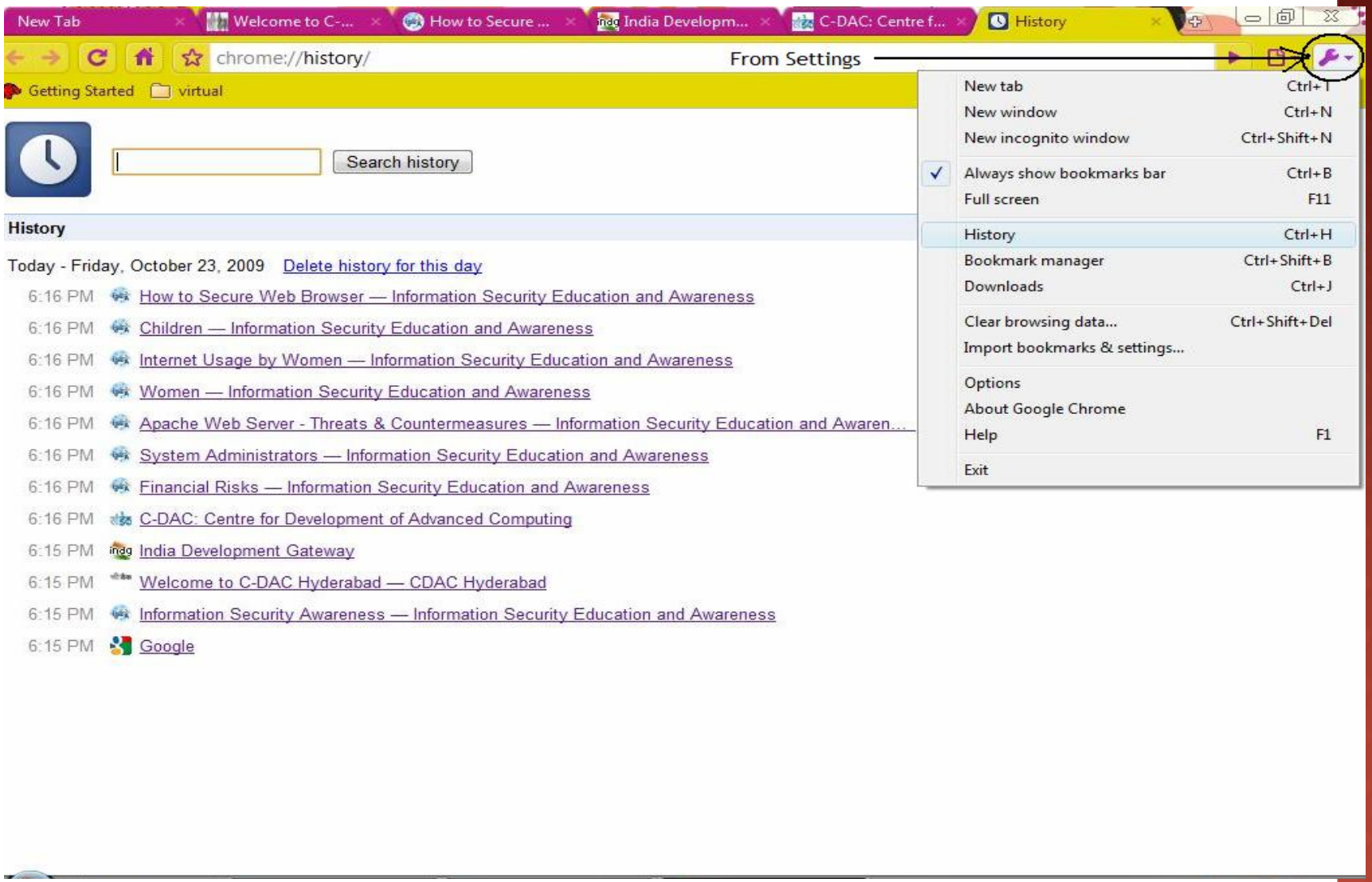


Browser History In IE 8

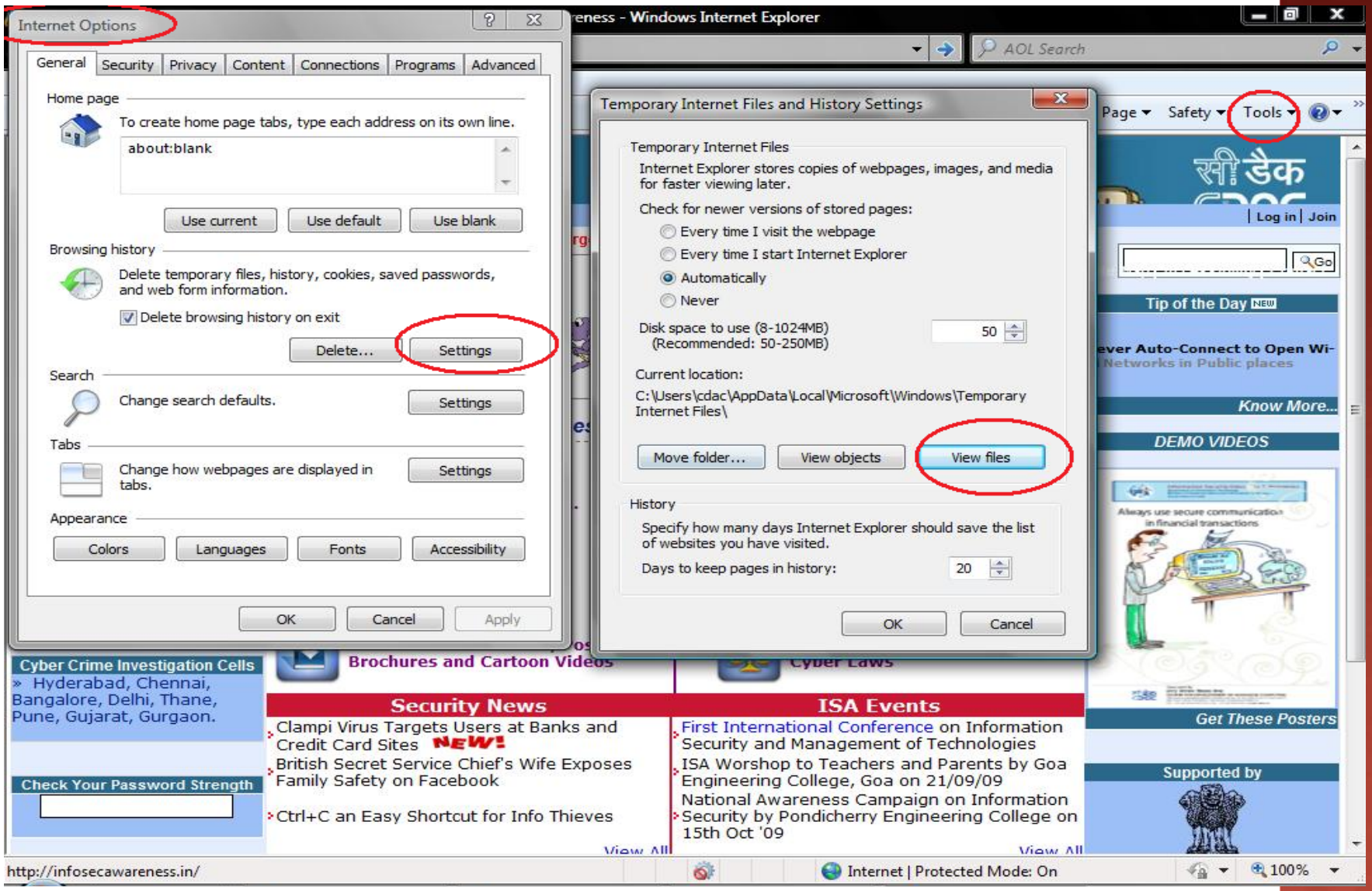
Browser History in Firefox



Browser History in Chrome



Temporary Files in IE 8



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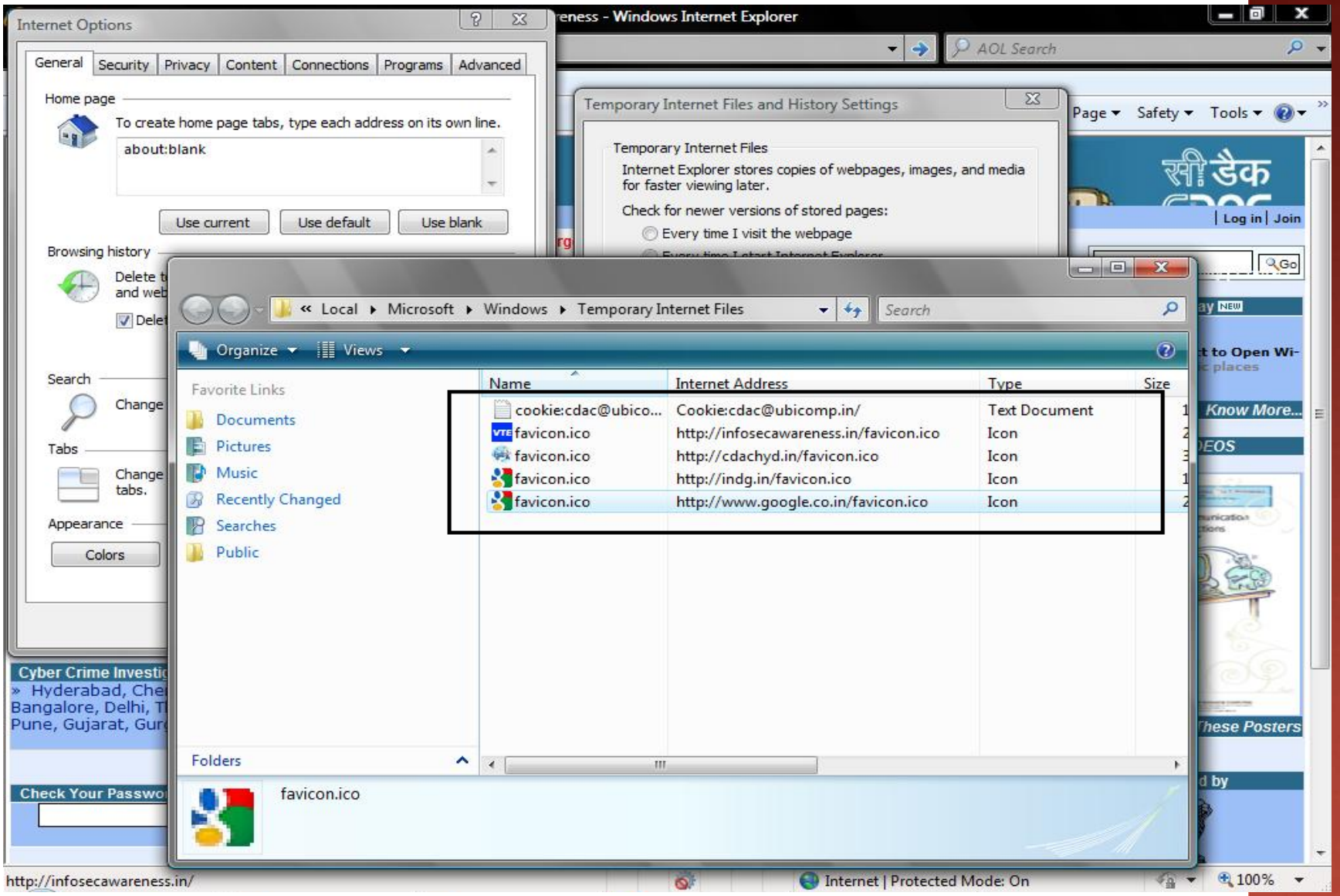
Internet Options
General
Security
Privacy
Content
Connections
Programs
Advanced
Home page
To create home page tabs, type each address on its own line.
about:blank
Use current
Use default
Use blank
Browsing history
Search
Change
Tabs
Change tabs.
Appearance
Colors
Temporary Internet Files and History Settings
Temporary Internet Files
Internet Explorer stores copies of webpages, images, and media for faster viewing later.
Check for newer versions of stored pages:
Every time I visit the webpage
Windows Internet Explorer
AOL Search
Page
Safety
Tools
Log in | Join
Local ▸ Microsoft ▸ Windows ▸ Temporary Internet Files
Search
Organize
Views
Favorite Links
Documents
Pictures
Music
Recently Changed
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Cookie:cdac@ubicomp.in/
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