DEPARTMENT OF ATOMIC ENERGY

Domain Knowledge of Information Technology

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Computer and Information Systems Division, DAE

Table of Content

Hardware and Software

Hardware

Hardware is best described as any physical component of a computer system that contains a circuit board, ICs, or other electronic components and systems. Hardware has physical dimension and weight. Whether it is a monitor, tablet, or smartphone, it is hardware. It is also written as HW or H/W.

Without any hardware, computers would not exist, and software could not be used. The above picture is of a webcam, an example of an external hardware. This hardware device allows users to take videos or pictures, and transmit them over the Internet.

External hardware examples

External hardware is the hardware found outside of the computer. Hardware includes, but is not limited to, display monitor, Keyboard, Mouse, Printer, Projector, Scanner, Joystick, Speakers, Microphone, USB (pen) drive etc.

Internal hardware examples

Internal hardware is the hardware found inside of the computer. Examples include, but are not limited to, computer microprocessor, hard disk, motherboard, network card, power supply, RAM, sound card, video card etc.

What are hardware upgrades?

A hardware upgrade is any new hardware replacement or additional hardware that improves performance. An example of a common hardware upgrade is a RAM upgrade, where the user increases the computer's total memory. Another example is a video card upgrade, which is the act of removing an old video card and replacing it with a newer, more powerful model for increasing performance of applications like AutoCAD, Photoshop or other graphics related applications.

Where can I buy computer hardware?

There many locations to buy computer hardware. Many local computer retail stores and repair shops have hardware available in stock that can be purchased immediately. However, for more options and lower prices in most cases, it is generally better to buy hardware online where the purchase can be made directly from the Original Equipment Manufacturer (OEM).

Software

Sometimes abbreviated as SW and S/W, software is a collection of instructions that enable the user to interact with a computer, its hardware, or perform tasks. Without software, most computers would be useless. For example, without Internet browser software, one cannot surf the Internet. Software is not a physical entity with dimension of weight, but it affects the working of hardware.
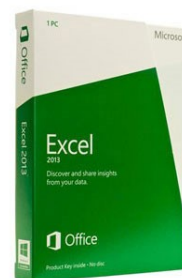
Software that performs a specific task is called a Program. The picture shows a Microsoft Excel box, an example of a spreadsheet software program.

Examples and types of software

Given below is a list of the different kinds of software with examples of related programs. It should be noted that although software is thought of as a program, it can be anything that runs on a computer.

Software Type	Examples	Is it a Program?
Antivirus	AVG, McAfee, Norton	Yes
Audio / Music	Apple iTunes and WinAmp	Yes
Communication	Skype, Yahoo Messenger	Yes
Database	Microsoft Access, MySQL	Yes
Device drivers	Printer driver, scanner driver	No
E-mail	Microsoft Outlook, Mozilla Thunderbird	Yes
Game	Call of Duty, Quake, and World of Warcraft	Yes
Internet Browser	Mozilla Firefox, Google Chrome, and Microsoft Internet Explorer	Yes
Movie player	VLC and Windows Media Player	Yes
Operating System	Microsoft Windows, Linux, UNIX, Google Android, Apple iOS, Apple macOS	No
Photo/Graphics	Adobe Photoshop and CorelDRAW	Yes
Presentation	Microsoft PowerPoint	Yes
Programming language	C++, Java, Perl, PHP, Python, Visual Basic	Yes
Simulation	Flight simulator and SimCity	Yes
Spreadsheet	Microsoft Excel	Yes
Utility	Screen saver, Disk Compression and Cleanup, Registry cleaner	No
Word processor	Microsoft Word	Yes

How do you get software?

Software can be purchased at a retail computer store or online and come in a box containing disks like CD, DVD, or Blu-ray. It generally accompanies manuals, warranty, and other documentation. Software can also be downloaded to a computer over the Internet which is downloaded and run to start the installation process.

Are there free software?

There are also a lot of free software programs available that are separated into different categories. Shareware or trial software is software that gives you a few days to try the software before buying the program. Freeware is completely free software that never requires payment, as long as it is not modified. Open source software is similar to freeware. Not only is the program free, but the source code is also available to everyone and can be modified to suit requirements.

How do you use computer software?

Once the software is installed on the computer hard drive, the program can be used anytime by finding the program on the computer. On a Windows computer, a program icon is added to the Start menu or Start screen, depending on the version of Windows.

How to maintain software

After the software is installed on the computer, it may need to be updated to keep up with the newest releases and/or fix any errors. Updating a program can be done using software patches which are released online by the original developer.

How is software created and how does it work?

A computer programmer or a team of programmers write the instructions using a programming language, defining how the software should operate on a given set of input data. The program may then be interpreted, or compiled into machine code which the host computer runs.

When I save a document, is that file also considered software?

While creating or editing a file using software — a Microsoft Word document, for instance, or a Photoshop image — that document or image file is considered a "resource" or "asset" used by the software. However, the file itself is not considered "software" even though it is an essential part of what software is doing. Such document or image files are generally called as data or soft copy.

How expensive is software?

The price for certain applications can vary widely. For example, there are games on that cost less than Rs.100 and advanced programs, such as advanced engineering design and development can cost several lakh of Rupees. Some software programs are also available on monthly payment basis.

Basic of Operations System

An Operating System (OS) is a set of programs which acts as an interface between the user and the computer's hardware and software resources. It enables the computer hardware to communicate and operate with the computer software. Without a computer OS, a computer and software programs would be useless.

When computers were first introduced, the user interacted with them using a command line interface, which required commands. Today, almost every computer is using a GUI (Graphical User Interface) OS that is much easier to use and operate. The picture shows Microsoft Windows XP in its original packaging.

Need of Operating System

Salient requirements to have an operating system are as given below:

Platform for application programs: OS provides a platform, on top of which, other programs, called application programs can run.

Managing devices: These application programs help the users to perform a specific task easily. It acts as an interface between the computer and the user. OS also allows the computer to manage its own resources such as memory, monitor, keyboard, printer etc.

Providing user interface: OS provides the user interface to control and manage the hardware, software and network resources of the computer.

Multitasking: OS also provides multitasking facility that allows the users to perform multiple tasks together.

Functions of Operating System

Some of the prominent functions of an operating system can be broadly outlined as:

Process Management: The OS takes manages allotment of CPU time to different processes. This is also known as scheduling; it ensures efficient use of processing power.

Device Management: The OS communicates with hardware and the attached devices and maintains the connectivity and data flow between them.

Memory management: A program is loaded in the main memory for execution. The OS ensures that memory is freed and is available for other programs after execution is over.

File Management: Any data on a computer is stored in the form of files and the OS manages them using File Allocation Table (FAT) and hard-disk partitioning.

User Interface: The OS provides graphical user interface using which the user navigates through various functions and locates resources like files or folders on the computer.

Other Tasks: The OS carries out several other tasks like spooling printing tasks or buffering online videos for optimal use of computer and networking resources.

Types of Operating System

OS are broadly divided into two categories, viz., General Purpose OS and the Real Time OS. The latter is beyond the scope of this reference material. The following General Purpose OS are commonly used across the world on a variety of devices.

Windows: Developed by Microsoft, it is the most commonly used OS and is compatible with personal computers (PCs). First version Windows 1.0 was launched in 1985.

MacOS: MacOS developed by Apple is exclusively for Macintosh machines, also developed by Apple. Its first version, Mac OS X 10.0., was launched in 2000.

Linux: Developed by Linus Torvalds in 1991, Linux is the most widely used open source operating system. Several versions developed by other developers are commonly used.

Ubuntu: A popular variant of Linux used with PC and IBM compatible computers.

Android: Developed by Google, Android is used with Android compatible phones and tablets. Android 1.0, the first commercial version of the software, was released in 2008.

iOS: Developed in 2016 exclusively for Apple's iPhone and iPad devices. 2019 onwards, iOS is made for iPhones only; a new iPadOS is developed for iPad devices separately.

OxygenOS: An Android-based operating system developed by smartphone manufacturer OnePlus exclusively for their smartphones. First version was introduced in 2015.

Office Automation Tools

Office automation is a collection of computer hardware and office productivity software tools to develop, store, edit, and processes information for accomplishing day-to-day office tasks. Office automation helps in optimizing or automating existing office procedures. Network is also an integral component of such automation and allows sharing of resources like scanning and printing devices along with also providing a backbone for web-based software applications and services like management of employee database etc, attendance management system, salary and bill processing etc.

Office Productivity Software Tools

The most commonly used office productivity tool is the Microsoft Office Suite that consists of applications for developing documents, presentations, graphs and databases.

Microsoft Word

Microsoft Word allows users to create documents, reports, letters etc. Unlike a plain text editor, Microsoft Word has features including text and font formatting, advanced page layout with images, spelling and grammar check etc.

What type of files can Microsoft Word create and use?

Early versions of Microsoft Word primarily created and used the .doc file extension, while newer versions of Word create and use the .docx file extension. More recent versions of Microsoft Word can create following additional types of files: .htm, .html, .mht and .mhtml for HTML support; .odt for Open Office Support; .pdf for Adobe Acrobat Support; .xml for Extensible Markup Language support etc.

Is Microsoft Word free to use?

Microsoft Word is not free. It is a part of Microsoft Office Suite or can be purchased separately as a standalone software application. Microsoft Word is available for Microsoft Windows, Apple macOS, Android, and Apple iOS. It can also run on the Linux operating system using WINE, the free and open-source compatibility software that aims to allow computer programs developed for Microsoft Windows to run on Unix-like operating systems.

There are many free word processors available, like OpenOffice Word which is a part of Apache OpenOffice and LibreOffice, both open-source office productivity software suites. Documents created in Microsoft Word and open-source word processors are interoperable.
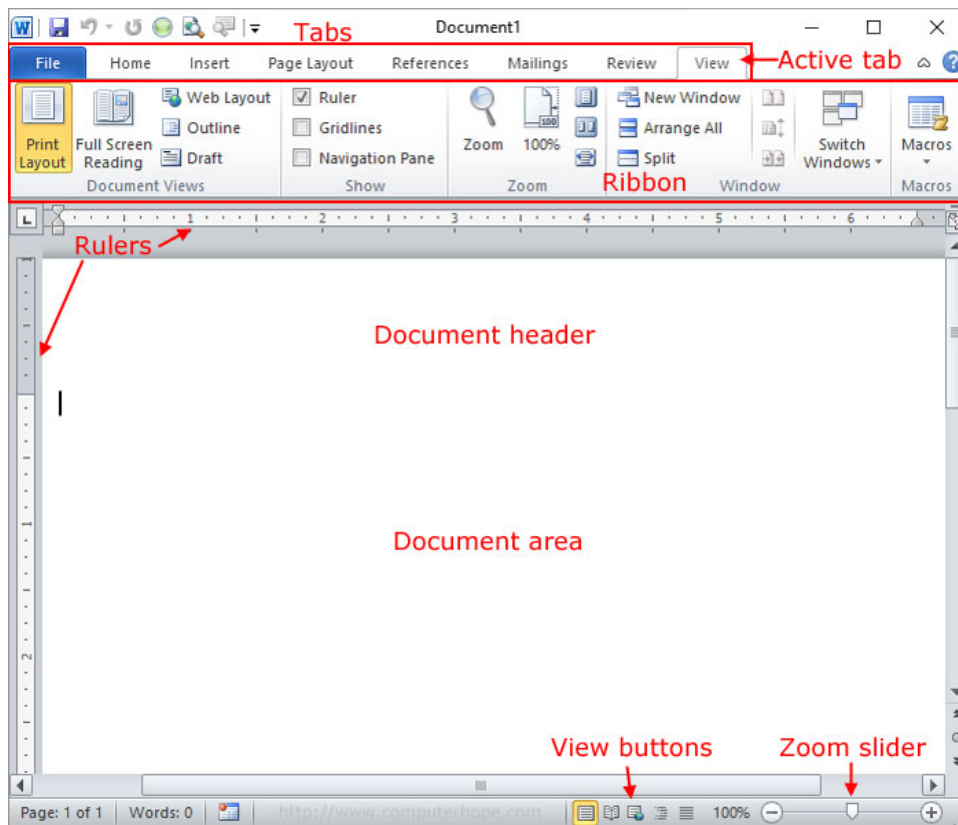
A typical editing window of Microsoft Word application

Microsoft Excel

Excel is a software program from Microsoft that is part of the Microsoft Office suite of productivity software developed by Microsoft. Excel was first released in 1985.

Unlike a word processor, such as Microsoft Word, the Excel documents consist of columns and rows of data, made up of individual cells. Each of these cells can contain either text or numerical values that can be calculated using formulas.

What is Excel used for?

General uses of Excel include cell-based calculation, tables, and various graphing tools. For instance, with an Excel spreadsheet, it is possible to create a monthly budget, track office expenses, or sort and organize large amounts of data. Each of the rows, columns, and cells can be modified in many ways, including the background color, number or date format, size, text font, layout, etc.
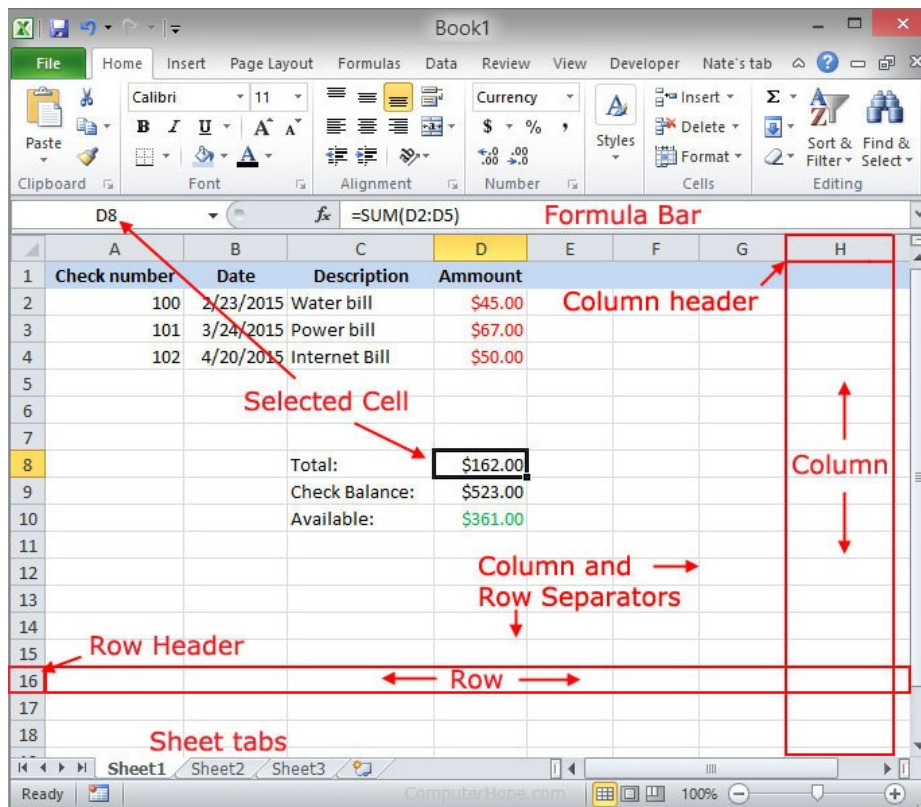
A typical editing window of Microsoft Excel application

Microsoft PowerPoint

PowerPoint is a Microsoft presentation program that creates a slide show of important information, charts, and images to display during a presentation. It is most often used for office for informative presentations.

What is PowerPoint used for?

All information in a PowerPoint presentation is placed on Slides. Each Slide may contain only text, or they can include pictures, videos, or animated text and images. Text may be formatted in the same ways as in Microsoft Word, with custom color, size, and font. These slides can be presented in the form of a slide show using monitor or projector.

Benefits of PowerPoint

It is widely considered as the standard for presentation software and includes several features, like transitions, animations, layouts, templates, and more. It offers the option to export its slides to alternative file formats, including images, video, documents etc.
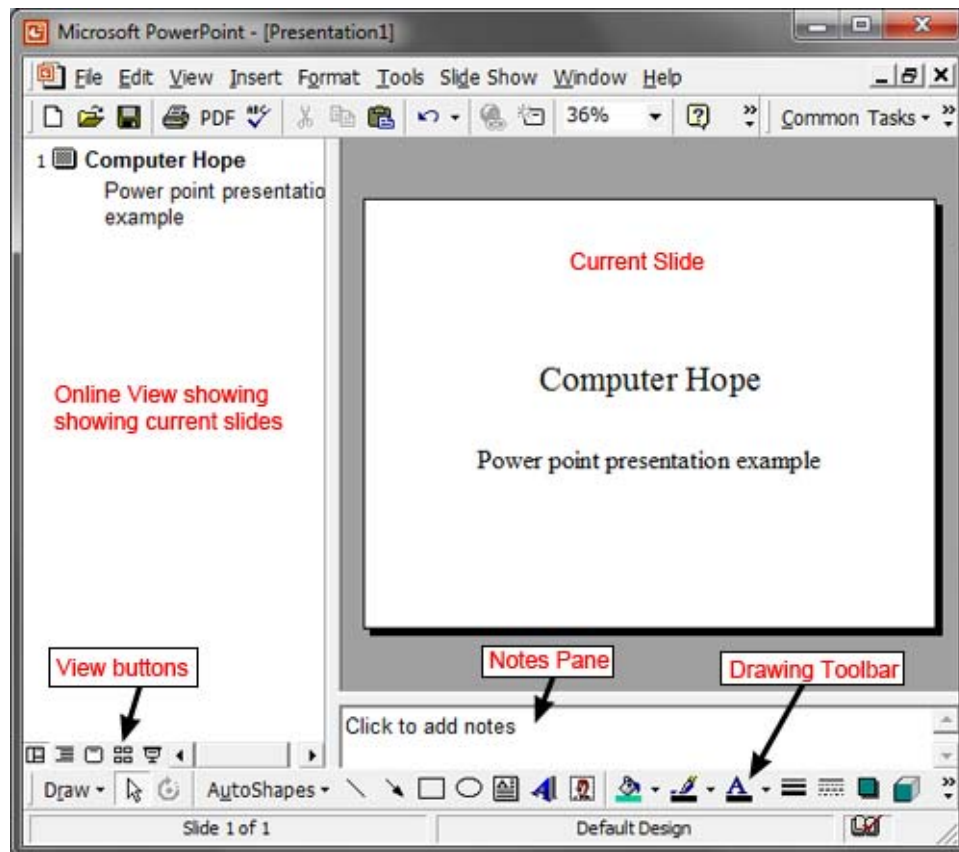
A typical editing window of Microsoft PowerPoint application

Other tools in Microsoft Office Suite include Microsoft Outlook, used for email and calendar management; Microsoft Access, a database management program; and Microsoft OneNote, a note-taking application.

All the tools in the Suite are developed so the content from one can be imported into the other thereby facilitating several ways to presenting the information more clearly. For example, a document in Microsoft Word or slides in Microsoft PowerPower presentations may contain a graph created using Microsoft Excel.

Safe practices of Social Networking

A social network is a website that brings people together to talk, share ideas and interests, or make new friends. This type of collaboration and sharing is known as social media. Unlike traditional media that is created by no more than ten people, social media sites contain content created by hundreds or even millions of different people. Sites like Facebook and Twitter can be a great way to connect with people. However, as the information is publically accessible, exercising safety is very important while sharing information on social networks.

Safety Tips

Manage privacy settings: As the first stop, learn about and use the privacy and security settings on social networking sites. They help control who-sees-what and manage the online reputation in a positive way.

Remember once posted, always posted: Even after the information is deleted and not visible to visitors, it remains with the social networking company, which if not guarded properly, can be accessed by other 3rd party agencies.

Keep personal info personal: The more information is posted on social networking site, post, the easier it may be for someone to use that information to steal identity, access data, or commit other crimes such as stalking. Information such as details of office projects and other information related to discharge of duties should never be shared.

Protect the devices: Maintain proper custody of computer and other devices which are used to access social networking sites. Keep the OS, web browser, and other software up-to-date by applying security-patches which are released by trusted sources.

Use strong passwords: Make sure that the password is long and consists of some combination of letters, numbers, and special characters (for example, +, @, #, or $).

Be cautious of unsolicited links: Sometimes links offering money and other items, even if they appear to be sent by known persons, can be part of a phishing attack. Contact the sender to verify the validity of the link.

Know what action to take: If someone is harassing or threatening you, remove them from the friends list, block them, and report them to the site administrator. Depending on severity of such a risk, inform the cyber-police cell of the State.

If all fails: If the account has been compromised, alert the social contacts and the office about the event. Lodge a complaint with the cybercrime cell of the Police. Information on lodging a complaint can be accessed at https://cybercrime.gov.in/.

Facebook is one of the most widely used social networking platforms. An illustration of Facebook privacy settings is as given below:
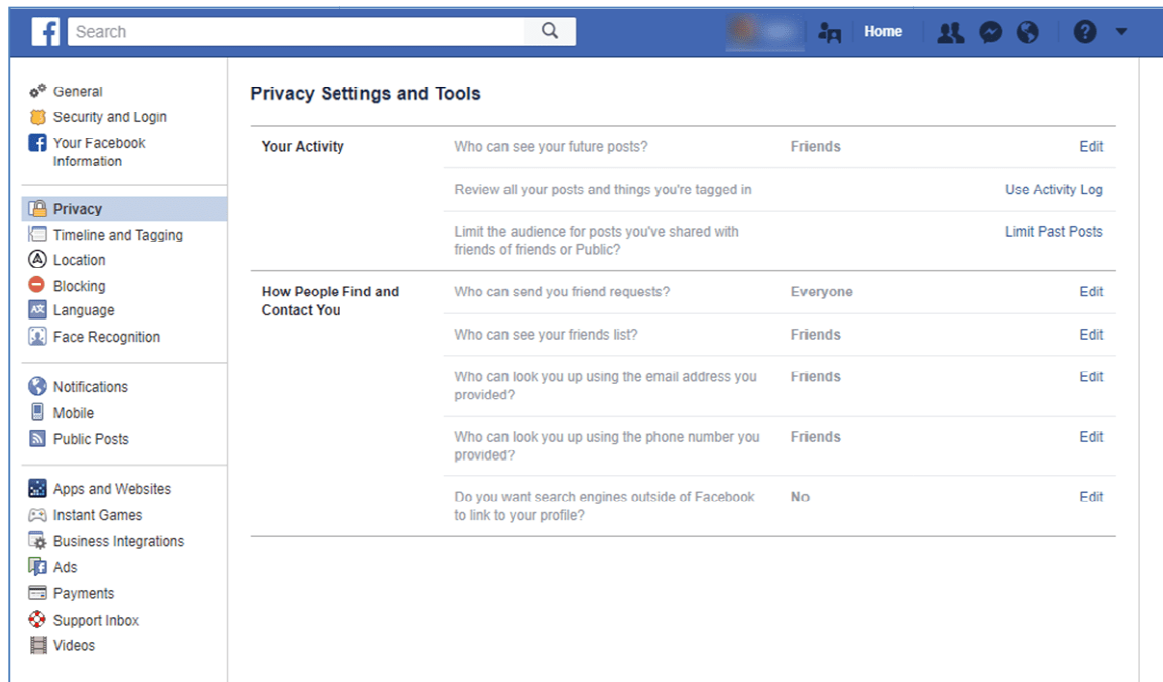
1. Log in to Facebook, click the **Settings** menu.
2. Select **Privacy** to view and edit who can see the photos, activity and information.
3. Select **Apps and Websites** to control access to the Facebook account by applications and websites
4. Select **Blocking** to block specific users or application invitations.

What does Social Networking site know about me?

Social networking sites like Facebook are a great place to connect with friends and family online. However, it is also very easy for people to over share personal information about themselves or others. Before sharing something on a social network or any place on the Internet, make sure it is something you wouldn't mind if everyone saw. Everything you share on the Internet should be thought of as public because it is possible for something you believe is shared privately to be leaked out publicly. If you're thinking about sharing something you think could offend someone or embarrass you, maybe consider not putting it on the Internet. Always think before you share something.

Basic Network Security

Network security comprised of hardware and software systems along with set of best practices that help keep data secured by utilizing passwords, encryption, and controlled access of data. While security does not guarantee that data cannot be compromised, extra steps help in preventing data from being compromised.

The first level of defence against any data security breach is the use of Antivirus software and Firewall settings on the network. Antivirus software installed on user PCs to prevent malicious programs from running on the PC. Firewalls settings are special configuration settings on the servers that prevent exposure to malicious websites.

Antivirus Software

Alternatively referred to as AV, an antivirus programme is a software utility designed to protect computer or network against computer viruses. If a virus is detected, the computer displays a warning asking what action should be done, often giving the options to quarantine, remove, ignore, or move the file to the vault.

Virus poses a threat to date: If the computer is infected with a virus without an antivirus program installed, any number of malicious actions could occur - it may delete files, prevent access to files, send spam, spy on you, or perform other malicious actions. In some situations, a computer may not be compatible with the computer and the virus would only be used to spread to other computers.

Examples of antivirus programs: There are various antivirus products available for computers, servers, and even mobile phones. New versions of Microsoft Windows Operating System include Windows Defender, which with the latest versions of Windows can defend against computer viruses. Other well-known antivirus programs include QuickHeal, TrendMicro, Norton, McAfee, and popular free antivirus programs include Avast and AVG.

Periodic Updates: Antivirus programs have definitions that tell the antivirus program how to detect and clean any new viruses that may have been released. If a new virus is released and antivirus isn't updated, it cannot detect the virus and the virus may infect the computer. Most antivirus programs automatically connect to the Internet and download the latest definitions or issue warning if it's not up-to-date.

Firewalls

A firewall is a software utility or hardware device that acts as a filter for data entering or leaving a network or computer. You could think of a firewall as a security guard that decides who enters or exits a building. A firewall works by blocking or restricting

network ports. Firewalls are commonly used to help prevent unauthorized access to both company and home networks.

Software firewalls: Software firewalls are designed to protect a computer by blocking certain programs from sending and receiving information from a local network or the Internet. By default, most programs are blocked by the firewall but can be excluded through the firewall settings.

Hardware firewalls: Hardware firewalls are found on most network routers and can be configured through the router setup screen.

Salient aspects and best practices to keep computers and personal information safe while connected to the Internet are listed in the following sections.

Best Practices for Password Protection

Use a strong password: Websites that store confidential data, such as an online bank site, need to use strong passwords. It is advisable to use a different password for each website that requires a login.

Consider two-factor authentication: Two-factor authentication adds additional protection by requiring an additional step in verifying a login. With two-factor authentication, after verifying the password, if the service does not recognize the computer, it sends SMS containing an OTP / Access Code on phone. If someone had the password but did not have the phone, even with a valid password, they cannot access the account. Most account passwords can be reset using the forgot-password feature, which sends a new password or link to reset the password to the e-mail address on file. If anyone has access to the e-mail account, they could get the new password for the account. Therefore, two-factor authentication should be enabled on e-mail account.

Be cautious where you're logging in from: The place of work may necessitate sharing of computers. Do not store any passwords in the browser if the computer is shared with other co-workers. When on a wireless network like Wi-Fi, realize that all information sent to and from the computer can be intercepted and read by someone nearby. Prevent this from happening by only logging onto a secure network using WEP or WPA (only use WEP if WPA is not available).

Secure saved passwords: Make sure to store passwords and login information in a secure area. Never write login information on a sticky note or in a text file that is not encrypted.

Best Practices for Email-based Threats

Always be cautious of e-mail links and attachments: One of the most common methods of spreading viruses and malware is through e-mail attachments and hyperlinks sent through e-mail. Always be extremely cautious when dealing with any attachments or

links in e-mails you've received from anyone (even friends and family). Never transmit confidential data over e-mail, such as passwords, credit card information, etc. E-mail messages are not encrypted, and if intercepted by a third-party, it could be read.

Be aware of phishing scams: Familiarize with phishing scams and techniques, which trick you into divulging the account information. Online banking sites, PayPal, eBay, Amazon, and other popular sites that require logins are popular targets.

Best Practices for Software Maintenance

Keep operating system and software up-to-date: Many of the updates that are released by developers of operating systems are related to computer security-related issues. Make sure the operating system is always running the latest updates and that you're running an operating system that is still supported by the developer. Older operating systems like Microsoft Windows XP are no longer supported by Microsoft and therefore no longer get updates.

Consider using an alternative browser: Older versions of Internet Explorer are notoriously insecure. If you are using Internet Explorer as the browser, consider an alternative browser such as Google Chrome or Mozilla Firefox. If you are running Windows 10 and want to continue to use a Microsoft browser, consider using Microsoft Edge instead of Internet Explorer.

Update Internet browser plug-ins: Often many attackers find security vulnerabilities through browser plug-ins, such as Adobe Flash. Make sure all installed Internet plug-ins are up-to-date.

Protect against malware, spyware, and viruses: Protect the computer from viruses by installing an antivirus program on the computer. If you do not want to install antivirus protection and the computer is running a newer version of Windows, at least have Windows Defender running on the computer. Also, having a malware protection program on the computer, such as Malwarebytes, is also a good method of protecting the computer against malware and spyware.

Best Practices for Internet Browsing

Don't always trust what you read online: Realize that it's possible for anyone to create a website on the Internet and that someone may only be creating a site for malicious intentions. For example, a website could be created to help spread fear, lies, or malware.

Verify data being shared is encrypted: When working on confidential information over the Internet, such as usernames, passwords, or accounts and finance related information, ensure that the website is secure. To verify this, look for a small lock (Internet browser security lock) icon in the browser window or next to the address bar. URL of such secured websites begin with **https://**

While the lock is in the locked position, data is encrypted, which helps prevent anyone from understanding the data if it's intercepted. When no lock is visible or the lock is in unlocked position, all information is plain text and could be read if intercepted. If a web page is not secure, such as an online forum, use a password you wouldn't use with protected sites, such as online banking / accounting website.

Use caution when accepting or agreeing to prompts: When you're prompted to install any program or add-on, make sure to read and understand the agreement before clicking on the Ok button. If you do not understand the agreement or feel it is not necessary to install the program, cancel or close the window. Additionally, when installing any program, watch for any check box that asks if it's ok to install a third-party program, toolbar, etc. These are never required and often cause more issues than good. Leave these boxes unchecked.

Hacker

A hacker is a term that first started being used in the 1960s and described a programmer or someone who could gain unauthorized access to computer systems. Later the term evolved into an individual who had an advanced understanding of computers, networking, programming, or hardware, but may or may not have any malicious intent.

A malicious hacker is usually referred to as a malicious user, black hat, or criminal hacker. These terms describe any individual who illegally breaks into computer systems to damage or steal information.

Why do people hack: Most computer hackers hack because of curiosity or for seeking self-gratification by challenge restrictions or to test technical ability. Other reasons can include hacking for profit, political gains, revenge, and destruction.

Are all hackers bad: General media often promotes the stereotype of hackers as malicious, anti-social, anti-establishment programmers. In reality, most hackers are curious about how computers, hardware, networks, or programs work. When they hack, they are experimenting, innovating, learning, and developing new technologies. To distinguish between "good" and "bad" hackers, malicious hackers are referred to as "black hats." Honest hackers with good intentions are referred to as "White hats."

Basic Knowledge of Internet

Alternatively referred to as the net or web, the Internet (interconnected network) was initially developed to aid in the progress of computing technology by linking academic computer centers. The Internet we use today started being developed in the late 1960s with the start of ARPANET and transmitted its first message in 1969. Today, The Internet is the world's largest network because it's a collection of computers and servers that are connected to each other globally using routers and switches. The Internet works the same way a network would in a home or office but has millions of more computers, routers, and switches.

<div align="right">

What is the Internet?

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The Internet contains billions of web pages created by people and companies from around the world, making it a limitless place to locate information and entertainment. The Internet also has thousands of services that help make life more convenient. For example, many financial institutions offer online banking that enables a user to manage and view their account from different locations. Certain salient aspects of the Internet are given below:

- The Internet and the WWW are not the same.
- The Internet is explored using a browser and the act of browsing the Internet is commonly referred to as surfing.
- Users browse websites and web pages by following hyperlinks that point to an address more commonly referred to as a URL.
- Finding information on the Internet is achieved by using a search engine. Examples include Google, Bing or DuckDuckGo search engines.
- Files, pictures, songs, and video can be shared by downloading (receiving) and uploading (sending).
- The Internet uses is accessed using a dial-up modem, broadband, 3G or 4G network connected through an ISP, the Internet Service Provider.

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The World Wide Web or WWW

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Short for World Wide Web, WWW, W3, or web is a graphical interface for the Internet that was first introduced to the public in 1991 by Tim Berners-Lee and a short while later it became available to everyone.

The WWW consists of billions of pages linked to each other that contain text, hyperlinks, graphics, multimedia files, and other interactive software that are accessed using a browser. In addition to browsing the Internet with a browser, the Internet has the services like: Chat, E-mail, Forums, File Transfer, Gaming, Social network, VoIP etc.

Domain Names

When referring to a computer network, a domain is a group of resources assigned to a specific group of individuals. When referring to an Internet address or name, a domain or domain name is the location of a website. For example, the domain name "google.com" points to the IP address "216.58.216.164" which is an addressing format used by servers. Generally, it's easier to remember a name rather than a long string of numbers.

Top and second level domain: In the above example of the "google.com" domain name, there are two parts of the domain name. First is "google," which is referred to as the SLD (second-level domain) and ".com," which is the TLD (top-level domain).

Website URL or Address

Also known as a web address, a URL (Uniform Resource Locator) is a standardized naming convention for addressing documents accessible over the Internet. An example of a URL is https://www.dae.gov.in, which is the URL for the website of Department of Atomic Energy.

http:// stands for Hypertext Transfer Protocol. It lets the browser to know which protocol it is going to use to access the information specified in the domain. **https://** is stands for "Hypertext Transfer Protocol Secure" and indicates that information transmitted over HTTP is encrypted and secure. After the http or https is the colon and two forward slashes (//) that separate the protocol from the remainder of the URL.

Web Browser

Alternatively referred to as a web browser or Internet browser, a browser is a software program to present and explore content on the World Wide Web. These pieces of content, including pictures, videos, and web pages, are connected using hyperlinks and classified with URIs (Uniform Resource Identifiers). There have been many different web browsers that have come and gone over the years. The first, named World Wide Web (later changed to Nexus), was invented by Tim Berners-Lee in 1990.

At first the Internet browser, if connected to the Internet, loads homepage or shows a start screen. One can browse the Internet by following hyperlinks or use a search engine to search for what you would like to find. Current Internet browsers are Google Chrome, Microsoft Edge, Microsoft Internet Explorer, Microsoft Edge, Mozilla Firefox, Opera, Apple Safari, Amazon Silk etc.

Web Browser Controls or User Interface

Home Button: The Home button is used to return users to their default web page; the same page that loads when the browser is first opened.

Back Button: The back button moves the content backward by one page. It only works if any hyperlink is visited from the default page at least once. On the home or default page when the browser is first opened, the back button is inactive or grayed out.

Forward Button: The forward button moves the content forward by one page. It only works if used the back button has been used previously at least once. If you have not gone back, and the browser shows a forward button, it will be grayed out.

Stop Button: The stop button no longer exists in the majority of modern web browsers. However, its function (to stop a web page from loading) may still be executed by pressing the Esc key.

Refresh or Reload Button: This button refreshes the content shown in the browser. Depending on the browser settings, refresh operation may reload the webpage from the source server or may show a local copy of the page from the cache memory.

Cache Memory: The browser stores some or all parts of each page visited on the computer. This feature is useful as it allows users to not have to download the full page each time they visit the same site. This action is called caching and the memory is called cache memory.

Clearing Cache Memory: Pressing the Ctrl+F5 on Microsoft browsers refreshes the content by reloading the page from the server. It also clears the previously stored copy of the webpage and the action is called as clearing the cache memory. It is sometimes required if the information is not getting updated as expected by the user.

Web Server, Hosting

A server is a software or hardware device that accepts and responds to requests made over a network. On the Internet, the term "server" commonly refers to the computer system that receives requests for a web files and sends those files to the client. Servers manage network resources like control access to a network, send/receive e-mail, manage print jobs, or host a website.

Cookie

First introduced 1994, a cookie is a small amount of text-only data saved on computer while browsing a certain website. This information can be used by websites to help create custom pages on return visits or save login information locally.