

U4L092

Maintenance of Computer Systems & Networks

Roll Call



An illustration of a man with glasses and a green shirt sitting on a chair, reading a book. The background features a blurred image of a modern building and several data visualization charts, including a pie chart, a bar chart, and a line graph. A large green arrow points from the left towards the right, passing behind the title box. A white plus sign is located in the bottom left corner, and a white minus sign is in the top right corner.

Recap of the Lesson



What is system maintenance?

System Maintenance

It refers to the ongoing process of keeping a computer system, network, or software application running smoothly, securely, and efficiently.



System Maintenance

It involves various tasks performed regularly to prevent issues, fix problems, and ensure the system continues to meet user or organizational needs.



Network System Maintenance

It refers to the ongoing tasks and procedures performed to ensure a computer network operates reliably, securely, and efficiently.



Network System Maintenance

It involves managing the hardware (like routers, switches, and servers), software (such as firewalls, operating systems), and services (like DNS, email, or cloud access) that allow devices to communicate and share resources.



Operating System Maintenance

It refers to the routine tasks and procedures performed to ensure that an operating system (like Windows, macOS, or Linux) continues to function efficiently, securely, and reliably.



Operating System Maintenance

This type of maintenance is critical because the OS is the backbone that manages hardware resources and provides a platform for all other software.



System Maintenance

Operating System Maintenance

- Install system updates promptly to patch security vulnerabilities
- Remove unnecessary programs that consume resources
- Manage startup applications to improve boot time
- Update device drivers regularly for optimal performance
- Perform regular system backups to protect against data loss

System Security Maintenance

It refers to the ongoing processes and actions taken to protect a computer system or network from unauthorized access, data breaches, malware, and other cyber threats. It ensures that the system remains safe, secure, and resilient against both external and internal vulnerabilities.



System Maintenance

Operating System Maintenance

- Keep antivirus software updated with the latest definitions
- Run regular malware scans to detect and remove threats
- Update your firewall settings to protect against network attacks
- Use strong, unique passwords for all accounts
- Enable automatic security updates for all software

File System Maintenance

It involves managing and optimizing how files are stored, accessed, and organized on a computer's storage device (like a hard drive or SSD). Its goal is to ensure data integrity, improve system performance, and prevent file corruption or loss.



System Maintenance

Optimizing Performance

- Monitor resource usage with Task Manager or Activity Monitor
- Optimize virtual memory settings for your specific hardware
- Clean the registry on Windows systems (use reputable tools only)
- Update device drivers to their latest stable versions
- Manage background processes to free up system resources

Performance Optimization

It refers to the process of improving the speed, efficiency, and responsiveness of a computer system, software application, or network. The goal is to ensure that resources (CPU, memory, disk, network) are used effectively, and that the system operates at its best possible level under current conditions.



System Maintenance

Performance Optimization

- Monitor resource usage with Task Manager or Activity Monitor
- Optimize virtual memory settings for your specific hardware
- Clean the registry on Windows systems (use reputable tools only)
- Update device drivers to their latest stable versions
- Manage background processes to free up system resources

System Maintenance

Network Maintenance

- Update network drivers to ensure compatibility
- Clean network cache to resolve connection issues
- Reset network settings when experiencing problems
- Monitor network performance using built-in tools
- Secure your wireless connection with strong encryption

Maintenance Tools and Software

Essential Tools For System Maintenance

Disk Clean up Utilities

- CCleaner
- Disk Cleanup (Windows)
- DaisyDisk (Mac)
- BleachBit

Anti Virus Software

System Monitoring

Maintenance Tools and Software

Essential Tools For System Maintenance

Disk Clean up Utilities

- Norton
- McAfee
- Bitdefender
- Kaspersky

Anti Virus Software

System Monitoring

Maintenance Tools and Software

Essential Tools For System Maintenance

Disk Clean up Utilities

- MSI Afterburner
- HWMonitor
- Core Temp
- Task Manager

Anti Virus Software

System Monitoring

Types of Preventive Maintenance

Planned Maintenance

Daily Back up

Monthly Back up

Yearly Back up

Run a malware scan to stay on top of virus prevention. If you have any real-time prevention tools even, then some viruses may slip by. Depending on how frequently you use the computer you can get away with doing this once a week; more frequent.

Types of Preventive Maintenance

Planned Maintenance

Daily Back up

Monthly Back up

Yearly Back up

Run a malware scan to stay on top of virus prevention. If you have any real-time prevention tools even, then some viruses may slip by. Depending on how frequently you use the computer you can get away with doing this once a week; more frequent computer users should do this daily.

Types of Preventive Maintenance

Planned Maintenance

Daily Back up

Monthly Back up

Yearly Back up

Never shut down by using the power button – always use the option from the start menu! Never leave your computer on overnight either to save electricity or to prevent wear and tear.

Types of Preventive Maintenance

Planned Maintenance

Daily Back up

Monthly Back up

Yearly Back up

Use the defragmentation tool to keep your PC running fast and efficiently. This tool puts files back together that are split apart into different folders in your PC over time.

Types of Preventive Maintenance

Planned Maintenance

Daily Back up

Monthly Back up

Yearly Back up

Scan your hard drive for errors to make sure there are no physical problems occurring. This doesn't check for viruses or malware but more so physical and logical problems.

Types of Preventive Maintenance

Planned Maintenance

Daily Back up

Monthly Back up

Yearly Back up

Clean out your disk drive every few weeks. Similar to defragmentation, these are small pieces of trash that quietly accumulate over time.

Types of Preventive Maintenance

Planned Maintenance

Daily Back up

Monthly Back up

Yearly Back up

Backup your hard drive as an image, so if your PC ever crashes you won't have to reinstall from scratch. This should be done twice a year, just to be safe. Either you, a friend, or a professional should do a thorough cleaning of the computer. This goes beyond simply using compressed air and opening it up to get rid of all of the smaller bits and pieces of dirt stuck in there.

Types of Preventive Maintenance

Planned Maintenance

Daily Back up

Monthly Back up

Yearly Back up

As needed:

Uninstall programs that you don't use anymore to free up space.

Types of Preventive Maintenance

Planned Maintenance

Daily Back up

Monthly Back up

Yearly Back up

As needed:

Practice safe browsing by not downloading files from or spending time on sites you aren't familiar with or may be untrustworthy since this is how people generally get malware.

Types of Preventive Maintenance

Planned Maintenance

Daily Back up

Monthly Back up

Yearly Back up

As needed:

Change passwords frequently as a general preventative measure against hackers.