

Assignment

by Joe Doyle

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OPERATING SYSTEMS ASSIGNMENT



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HND Web Development

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Key Functions of General Operating Systems

[1]A general operating system is a software program that manages a computer's hardware and software resources and provides common services for computer programs. Some of the key functions of a general operating system include:

- **Process management:** The operating system manages the execution of multiple processes on a computer. It allocates resources such as memory and CPU time to each process and ensures that they run smoothly without interfering with each other.
- **Memory management:** The operating system manages the computer's memory, including allocating and deallocating memory for processes, managing virtual memory, and implementing memory protection.
- **File management:** The operating system manages files and directories on a computer's storage devices. It provides functions for creating, deleting, moving, and renaming files and directories, as well as functions for reading and writing data to files.
- **Device management:** The operating system manages input/output devices such as keyboards, mice, and printers. It provides device drivers that enable programs to interact with these devices.
- **Security management:** The operating system provides security features to protect the computer and its data from unauthorized access. It provides user authentication, file permissions, and access control mechanisms.
- **Networking:** The operating system provides networking features to enable communication between computers. It provides protocols for sending and receiving data over the network, as well as functions for configuring network settings.
- **User interface:** The operating system provides a user interface that enables users to interact with the computer. This may include a command-line interface or a graphical user interface.

Use of Windows OS CLI commands

The Windows operating system has a command-line interface (CLI) that allows users to perform various tasks using text commands. Here are some commonly used Windows CLI commands and their uses:

- **cd** - Changes the current directory.
- **dir** - Displays a list of files and folders in the current directory.
- **type** - Displays the contents of a file on the screen.
- **md** - Creates a new directory.
- **copy** - Copies one or more files from one location to another.
- **del** - Deletes one or more files.
- **ipconfig** - Displays the current IP configuration for all network adapters.
- **netstat** - Displays active network connections and their status.
- **Ping** - Tests connectivity to a network host by sending ICMP echo packets.
- **tasklist** - Displays a list of currently running processes.

```

C:\Users\joebo>dir
Volume in drive C is Windows
Volume Serial Number is E604-4202

Directory of C:\Users\joebo

17/03/2023  10:18    <DIR>          .
28/09/2022  16:40    <DIR>          ..
15/10/2021  16:35             6,893 -1.14-windows.xml
27/01/2022  23:27    <DIR>          .dotnet
12/11/2021  14:51             176 .packettracer
11/11/2021  12:23    <DIR>          .VirtualBox
17/09/2021  13:19    <DIR>          3D Objects
12/11/2021  14:57    <DIR>          Cisco Packet Tracer 8.0.1
28/09/2022  17:40    <DIR>          Contacts
27/01/2022  23:31    <DIR>          Documents
31/03/2023  12:19    <DIR>          Downloads
28/09/2022  17:40    <DIR>          Favorites
28/09/2022  17:40    <DIR>          Links
16/03/2023  17:19    <DIR>          Music
30/03/2023  12:36    <DIR>          OneDrive
30/03/2023  12:36    <DIR>          OneDrive - University of Wales Trinity Saint David
28/09/2022  17:40    <DIR>          Saved Games
28/09/2022  17:40    <DIR>          Searches
16/03/2023  12:24    <DIR>          source
28/09/2022  17:40    <DIR>          Videos
05/11/2021  16:18    <DIR>          VirtualBox VMs
               2 File(s)              7,069 bytes
               19 Dir(s)  54,861,959,168 bytes free

C:\Users\joebo>

```

```

C:\Users>ipconfig

Windows IP Configuration

Ethernet adapter Ethernet:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Ethernet adapter Ethernet 2:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Wireless LAN adapter Local Area Connection* 1:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Wireless LAN adapter Local Area Connection* 2:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Wireless LAN adapter WiFi:

    Connection-specific DNS Suffix  . : customer.ask4.lan
    Link-local IPv6 Address . . . . . : fe80::15eb:ea5e:ebdd:2330%13
    IPv4 Address. . . . . : 10.176.13.124
    Subnet Mask . . . . . : 255.255.240.0
    Default Gateway . . . . . : 10.176.0.1

Ethernet adapter Bluetooth Network Connection:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Ethernet adapter vEthernet (Default Switch):

    Connection-specific DNS Suffix  . :
    Link-local IPv6 Address . . . . . : fe80::fad5:e65c:4adb:3cad%24
    IPv4 Address. . . . . : 172.26.112.1

```

```

Wireless LAN adapter WiFi:

    Connection-specific DNS Suffix  . : customer.ask4.lan
    Link-local IPv6 Address . . . . . : fe80::15eb:ea5e:ebdd:2330%13
    IPv4 Address. . . . . : 10.176.13.124
    Subnet Mask . . . . . : 255.255.240.0
    Default Gateway . . . . . : 10.176.0.1

Ethernet adapter Bluetooth Network Connection:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Ethernet adapter vEthernet (Default Switch):

    Connection-specific DNS Suffix  . :
    Link-local IPv6 Address . . . . . : fe80::fad5:e65c:4adb:3cad%24
    IPv4 Address. . . . . : 172.26.112.1
    Subnet Mask . . . . . : 255.255.240.0
    Default Gateway . . . . . :

C:\Users>

```

```
C:\Users>whoami
laptop-6cdq5pdq\joebo

C:\Users>
```

```
C:\Users>ping

Usage: ping [-t] [-a] [-n count] [-l size] [-f] [-i TTL] [-v TOS]
          [-r count] [-s count] [[-j host-list] | [-k host-list]]
          [-w timeout] [-R] [-S srcaddr] [-c compartment] [-p]
          [-4] [-6] target_name

Options:
  -t          Ping the specified host until stopped.
              To see statistics and continue - type Control-Break;
              To stop - type Control-C.
  -a          Resolve addresses to hostnames.
  -n count    Number of echo requests to send.
  -l size     Send buffer size.
  -f          Set Don't Fragment flag in packet (IPv4-only).
  -i TTL      Time To Live.
  -v TOS      Type Of Service (IPv4-only. This setting has been deprecated
              and has no effect on the type of service field in the IP
              Header).
  -r count    Record route for count hops (IPv4-only).
  -s count    Timestamp for count hops (IPv4-only).
  -j host-list Loose source route along host-list (IPv4-only).
  -k host-list Strict source route along host-list (IPv4-only).
  -w timeout  Timeout in milliseconds to wait for each reply.
  -R          Use routing header to test reverse route also (IPv6-only).
              Per RFC 5095 the use of this routing header has been
              deprecated. Some systems may drop echo requests if
              this header is used.
  -S srcaddr  Source address to use.
  -c compartment Routing compartment identifier.
  -p          Ping a Hyper-V Network Virtualization provider address.
  -4          Force using IPv4.
  -6          Force using IPv6.

C:\Users>
```

```
C:\Users>netstat
```

Active Connections

Proto	Local Address	Foreign Address	State
TCP	10.176.13.124:49170	13.107.138.8:https	ESTABLISHED
TCP	10.176.13.124:49254	13.107.138.8:https	ESTABLISHED
TCP	10.176.13.124:49460	52.108.89.13:https	ESTABLISHED
TCP	10.176.13.124:49500	a2-19-161-65:https	CLOSE_WAIT
TCP	10.176.13.124:49501	a2-19-161-65:https	CLOSE_WAIT
TCP	10.176.13.124:49502	a2-19-161-65:https	CLOSE_WAIT
TCP	10.176.13.124:49503	a2-19-161-65:https	CLOSE_WAIT
TCP	10.176.13.124:49504	a2-19-161-65:https	CLOSE_WAIT
TCP	10.176.13.124:49505	a2-19-161-65:https	CLOSE_WAIT
TCP	10.176.13.124:50905	13.107.136.8:https	ESTABLISHED
TCP	10.176.13.124:51062	192.229.221.95:http	CLOSE_WAIT
TCP	10.176.13.124:51063	152.199.23.72:https	CLOSE_WAIT
TCP	10.176.13.124:51064	152.199.23.72:https	CLOSE_WAIT
TCP	10.176.13.124:52998	13.107.136.8:https	ESTABLISHED
TCP	10.176.13.124:53187	52.108.196.24:https	ESTABLISHED
TCP	10.176.13.124:53210	52.108.50.36:https	ESTABLISHED
TCP	10.176.13.124:53213	52.108.80.31:https	ESTABLISHED
TCP	10.176.13.124:53218	13.107.136.8:https	ESTABLISHED
TCP	10.176.13.124:53219	13.107.136.8:https	ESTABLISHED
TCP	10.176.13.124:53426	52.108.88.1:https	ESTABLISHED
TCP	10.176.13.124:53756	52.114.77.98:https	ESTABLISHED
TCP	10.176.13.124:54293	52.108.196.24:https	ESTABLISHED
TCP	10.176.13.124:54419	13.107.138.8:https	ESTABLISHED
TCP	10.176.13.124:54924	144.2.12.25:https	CLOSE_WAIT
TCP	10.176.13.124:55024	20.90.156.32:https	ESTABLISHED
TCP	10.176.13.124:55026	lhr25s34-in-f10:https	ESTABLISHED
TCP	10.176.13.124:55146	52.113.199.40:https	ESTABLISHED
TCP	10.176.13.124:55335	ec2-52-88-154-124:https	ESTABLISHED
TCP	10.176.13.124:55338	ec2-52-10-28-238:https	ESTABLISHED
TCP	10.176.13.124:55552	104.18.34.234:https	ESTABLISHED
TCP	10.176.13.124:56578	whatsapp-chatd-msgr-mini-edge-shv-02-dfw5:5222	ESTABLISHED
TCP	10.176.13.124:56591	149.154.167.92:https	ESTABLISHED
TCP	10.176.13.124:57257	wl-in-f188:5228	ESTABLISHED
TCP	10.176.13.124:57258	wl-in-f188:5228	ESTABLISHED
TCP	10.176.13.124:57260	wl-in-f188:5228	ESTABLISHED
TCP	10.176.13.124:57269	52.108.196.24:https	ESTABLISHED
TCP	10.176.13.124:57369	edge-mqtt-shv-02-lhr8:https	ESTABLISHED
TCP	10.176.13.124:58536	13.107.136.8:https	ESTABLISHED

TCP	10.176.13.124:57369	edge-mqtt-shv-02-lhr8:https	ESTABLISHED
TCP	10.176.13.124:58536	13.107.136.8:https	ESTABLISHED
TCP	10.176.13.124:58541	13.107.136.8:https	ESTABLISHED
TCP	10.176.13.124:58546	52.108.196.24:https	ESTABLISHED
TCP	10.176.13.124:58613	52.108.88.1:https	ESTABLISHED
TCP	10.176.13.124:58634	52.108.50.36:https	ESTABLISHED
TCP	10.176.13.124:58654	52.108.196.24:https	ESTABLISHED
TCP	10.176.13.124:58669	52.108.80.31:https	ESTABLISHED
TCP	10.176.13.124:59280	13.107.138.8:https	ESTABLISHED
TCP	10.176.13.124:59331	13.107.138.8:https	ESTABLISHED
TCP	10.176.13.124:59363	51.11.56.119:https	ESTABLISHED
TCP	10.176.13.124:60309	13.107.136.8:https	ESTABLISHED
TCP	10.176.13.124:60517	162.159.134.234:https	ESTABLISHED
TCP	10.176.13.124:63540	20.90.156.32:https	ESTABLISHED
TCP	10.176.13.124:64289	13.107.136.8:https	ESTABLISHED
TCP	10.176.13.124:64332	52.239.175.4:https	TIME_WAIT
TCP	10.176.13.124:64352	lhr25s34-in-f10:https	ESTABLISHED
TCP	10.176.13.124:64354	lhr25s33-in-f10:https	ESTABLISHED
TCP	10.176.13.124:64356	lhr25s34-in-f10:https	ESTABLISHED
TCP	10.176.13.124:64362	13.69.109.130:https	TIME_WAIT
TCP	10.176.13.124:64424	40.100.174.2:https	ESTABLISHED
TCP	10.176.13.124:64429	edge-star-shv-02-lhr8:https	TIME_WAIT
TCP	10.176.13.124:64433	99.181.79.10:https	TIME_WAIT
TCP	10.176.13.124:64439	ec2-52-33-68-84:https	TIME_WAIT
TCP	10.176.13.124:64440	52.97.211.194:https	ESTABLISHED
TCP	10.176.13.124:64443	gw:domain	TIME_WAIT
TCP	10.176.13.124:64444	gw:domain	TIME_WAIT
TCP	10.176.13.124:64445	20.49.161.42:https	TIME_WAIT
TCP	10.176.13.124:64448	ec2-52-33-68-84:https	TIME_WAIT
TCP	10.176.13.124:64449	99.181.79.10:https	TIME_WAIT
TCP	10.176.13.124:64452	gw:domain	TIME_WAIT
TCP	10.176.13.124:64453	gw:domain	TIME_WAIT
TCP	10.176.13.124:64454	gw:domain	TIME_WAIT
TCP	10.176.13.124:64455	gw:domain	TIME_WAIT
TCP	10.176.13.124:64456	99.181.79.10:https	TIME_WAIT
TCP	10.176.13.124:64458	ec2-52-33-68-84:https	TIME_WAIT
TCP	10.176.13.124:64459	gw:domain	TIME_WAIT
TCP	10.176.13.124:64465	68.219.88.225:https	ESTABLISHED
TCP	10.176.13.124:64466	a23-219-197-21:https	ESTABLISHED
TCP	10.176.13.124:64467	68.219.88.225:https	ESTABLISHED
TCP	10.176.13.124:64468	a23-219-197-21:https	ESTABLISHED
TCP	10.176.13.124:64469	52.113.194.132:https	TIME_WAIT
TCP	10.176.13.124:64470	68.219.88.225:https	ESTABLISHED
TCP	10.176.13.124:64471	a23-219-197-21:https	ESTABLISHED

TCP	10.176.13.124:64480	99.181.79.10:https	TIME_WAIT
TCP	10.176.13.124:64482	video-edge-82e6ec:https	ESTABLISHED
TCP	10.176.13.124:64483	gw:domain	TIME_WAIT
TCP	10.176.13.124:64484	gw:domain	TIME_WAIT
TCP	10.176.13.124:64485	server-143-204-178-72:https	TIME_WAIT
TCP	10.176.13.124:64487	ec2-52-33-68-84:https	TIME_WAIT
TCP	10.176.13.124:64488	ec2-54-87-203-245:https	CLOSE_WAIT
TCP	10.176.13.124:64489	ec2-34-192-123-92:https	CLOSE_WAIT
TCP	10.176.13.124:64490	13.69.109.130:https	TIME_WAIT
TCP	10.176.13.124:64493	99.181.79.10:https	TIME_WAIT
TCP	10.176.13.124:64494	edge-star-shv-02-lhr8:https	TIME_WAIT
TCP	10.176.13.124:64496	20.49.161.42:https	TIME_WAIT
TCP	10.176.13.124:64497	149.154.167.43:https	ESTABLISHED
TCP	10.176.13.124:64498	149.154.167.43:http	TIME_WAIT
TCP	10.176.13.124:64499	99.181.79.10:https	TIME_WAIT
TCP	10.176.13.124:64500	gw:domain	TIME_WAIT
TCP	10.176.13.124:64501	gw:domain	TIME_WAIT
TCP	10.176.13.124:64502	52.112.190.32:https	TIME_WAIT
TCP	10.176.13.124:64503	ec2-54-90-29-159:https	ESTABLISHED
TCP	10.176.13.124:64504	99.181.79.10:https	TIME_WAIT
TCP	10.176.13.124:64506	99.181.79.10:https	TIME_WAIT
TCP	10.176.13.124:64507	99.181.79.10:https	TIME_WAIT
TCP	10.176.13.124:64508	gw:domain	TIME_WAIT
TCP	10.176.13.124:64509	gw:domain	TIME_WAIT
TCP	10.176.13.124:64510	gw:domain	TIME_WAIT
TCP	10.176.13.124:64511	gw:domain	TIME_WAIT
TCP	10.176.13.124:64512	ec2-52-40-7-214:https	TIME_WAIT
TCP	10.176.13.124:64513	gw:domain	TIME_WAIT
TCP	10.176.13.124:64514	gw:domain	TIME_WAIT
TCP	10.176.13.124:64516	52.97.179.226:https	ESTABLISHED
TCP	10.176.13.124:64518	ec2-3-217-61-159:https	ESTABLISHED
TCP	10.176.13.124:64519	52.109.32.94:https	TIME_WAIT
TCP	10.176.13.124:64520	52.109.32.94:https	TIME_WAIT
TCP	10.176.13.124:64521	52.109.32.94:https	TIME_WAIT
TCP	10.176.13.124:64522	52.109.32.94:https	TIME_WAIT
TCP	10.176.13.124:64523	99.181.79.10:https	TIME_WAIT
TCP	10.176.13.124:64524	ec2-34-232-134-170:https	ESTABLISHED
TCP	10.176.13.124:64525	ec2-52-40-7-214:https	TIME_WAIT
TCP	10.176.13.124:64526	99.181.79.10:https	TIME_WAIT
TCP	10.176.13.124:64527	ec2-52-54-55-165:https	ESTABLISHED
TCP	10.176.13.124:64528	edge-star-shv-02-lhr8:https	ESTABLISHED
TCP	10.176.13.124:64529	gw:domain	TIME_WAIT
TCP	10.176.13.124:64530	gw:domain	TIME_WAIT
TCP	10.176.13.124:64531	51.11.56.119:https	TIME_WAIT

```

TCP 10.176.13.124:64520 52.109.32.94:https TIME_WAIT
TCP 10.176.13.124:64521 52.109.32.94:https TIME_WAIT
TCP 10.176.13.124:64522 52.109.32.94:https TIME_WAIT
TCP 10.176.13.124:64523 99.181.79.10:https TIME_WAIT
TCP 10.176.13.124:64524 ec2-34-232-134-170:https ESTABLISHED
TCP 10.176.13.124:64525 ec2-52-40-7-214:https TIME_WAIT
TCP 10.176.13.124:64526 99.181.79.10:https TIME_WAIT
TCP 10.176.13.124:64527 ec2-52-54-55-165:https ESTABLISHED
TCP 10.176.13.124:64528 edge-star-shv-02-lhr8:https ESTABLISHED
TCP 10.176.13.124:64529 gw:domain TIME_WAIT
TCP 10.176.13.124:64530 gw:domain TIME_WAIT
TCP 10.176.13.124:64531 51.11.56.119:https TIME_WAIT
TCP 10.176.13.124:64532 52.109.32.94:https TIME_WAIT
TCP 10.176.13.124:64533 gw:domain TIME_WAIT
TCP 10.176.13.124:64534 gw:domain TIME_WAIT
TCP 10.176.13.124:64535 server-18-164-72-199:https TIME_WAIT
TCP 10.176.13.124:64536 99.181.79.10:https ESTABLISHED
TCP 10.176.13.124:64537 13.69.109.130:https ESTABLISHED
TCP 127.0.0.1:54608 LAPTOP-6CDQ5PDQ:54609 ESTABLISHED
TCP 127.0.0.1:54609 LAPTOP-6CDQ5PDQ:54608 ESTABLISHED
TCP 127.0.0.1:54610 LAPTOP-6CDQ5PDQ:54611 ESTABLISHED
TCP 127.0.0.1:54611 LAPTOP-6CDQ5PDQ:54610 ESTABLISHED
TCP 127.0.0.1:54612 LAPTOP-6CDQ5PDQ:54613 ESTABLISHED
TCP 127.0.0.1:54613 LAPTOP-6CDQ5PDQ:54612 ESTABLISHED
TCP 127.0.0.1:54614 LAPTOP-6CDQ5PDQ:54615 ESTABLISHED
TCP 127.0.0.1:54615 LAPTOP-6CDQ5PDQ:54614 ESTABLISHED
TCP 127.0.0.1:54619 LAPTOP-6CDQ5PDQ:54620 ESTABLISHED
TCP 127.0.0.1:54620 LAPTOP-6CDQ5PDQ:54619 ESTABLISHED
TCP 127.0.0.1:54621 LAPTOP-6CDQ5PDQ:54622 ESTABLISHED
TCP 127.0.0.1:54622 LAPTOP-6CDQ5PDQ:54621 ESTABLISHED
TCP 127.0.0.1:54623 LAPTOP-6CDQ5PDQ:54624 ESTABLISHED
TCP 127.0.0.1:54624 LAPTOP-6CDQ5PDQ:54623 ESTABLISHED
TCP 127.0.0.1:54625 LAPTOP-6CDQ5PDQ:54626 ESTABLISHED
TCP 127.0.0.1:54626 LAPTOP-6CDQ5PDQ:54625 ESTABLISHED
TCP 127.0.0.1:54691 LAPTOP-6CDQ5PDQ:54692 ESTABLISHED
TCP 127.0.0.1:54692 LAPTOP-6CDQ5PDQ:54691 ESTABLISHED
TCP 127.0.0.1:54693 LAPTOP-6CDQ5PDQ:54694 ESTABLISHED
TCP 127.0.0.1:54694 LAPTOP-6CDQ5PDQ:54693 ESTABLISHED
TCP 127.0.0.1:54695 LAPTOP-6CDQ5PDQ:54696 ESTABLISHED
TCP 127.0.0.1:54696 LAPTOP-6CDQ5PDQ:54695 ESTABLISHED

C:\Users>
C:\Users>
C:\Users>

```

Use of Linux OS CLI commands

The Linux operating system is known for its command-line interface (CLI), which provides users with powerful tools to manage the system and perform various tasks. Here are some commonly used Linux CLI commands along with a brief description and reference for further learning:

- **ls** - List the files and directories in the current working directory

Reference: <https://linux.die.net/man/1/ls>

- **cd** - Change the current working directory.

Reference: <https://linux.die.net/man/1/cd>

- **pwd** - Print the current working directory.

Reference: <https://linux.die.net/man/1/pwd>

- **mkdir** - Create a new directory.

Reference: <https://linux.die.net/man/1/mkdir>

- `rm` - Remove a file or directory.
Reference: <https://linux.die.net/man/1/rm>
- `cp` - Copy a file or directory.
Reference: <https://linux.die.net/man/1/cp>
- `mv` - Move a file or directory.
Reference: <https://linux.die.net/man/1/mv>
- `chmod` - Change the permissions of a file or directory.
Reference: <https://linux.die.net/man/1/chmod>
- `chown` - Change the owner of a file or directory.
Reference: <https://linux.die.net/man/1/chown>
- `ps` - Display information about running processes.
Reference: <https://linux.die.net/man/1/ps>
- `top` - Display information about system resources and processes
Reference: <https://linux.die.net/man/1/top>
- `grep` - Search for a pattern in a file or output
Reference: <https://linux.die.net/man/1/grep>
- `tar` - Create or extract an archive file.
Reference: <https://linux.die.net/man/1/tar>
- `ssh` - Connect to a remote machine securely.
Reference: <https://linux.die.net/man/1/ssh>
- `sudo` - Run a command with elevated privileges.
Reference: <https://linux.die.net/man/8/sudo>

These are just a few examples of the many useful Linux CLI commands available. You can find more information and examples for these commands and many others in the Linux man pages, which provide detailed documentation for each command.

Use of Windows OS scripts

Windows OS scripts are essential tools for automating tasks, managing system resources, and performing complex operations in a Windows environment. These scripts can be written in various scripting languages, such as PowerShell, VBScript, and JScript, among others. They are used extensively in system administration, software development, and cybersecurity.

One of the primary uses of Windows OS scripts is in system administration. Administrators can use scripts to automate the installation and configuration of software packages, manage user accounts

and permissions, perform backups and restorations, and monitor system performance. Scripts can also be used to generate reports, automate system updates, and perform other tasks that would otherwise be time-consuming and error prone.

Another common use of Windows OS scripts is in software development. Developers can use scripts to automate the deployment of software applications, manage version control systems, run unit tests, and perform other tasks that are necessary for building and maintaining software applications.

Furthermore, Windows OS scripts can be used in cybersecurity to monitor system logs, detect and respond to security threats, and perform other security-related tasks. They can also be used in data analysis to automate data processing, run statistical analyses, and generate reports.

In conclusion, Windows OS scripts are powerful tools that are widely used in system administration, software development, cybersecurity, and data analysis. They are an essential component of the Windows operating system and are used extensively by system administrators, developers, and security professionals.

Use of Linux OS scripts

[2]Linux OS scripts are powerful tools that enable users to automate repetitive tasks, configure system settings, and perform complex operations with ease. These scripts are written in various scripting languages, such as Bash, Python, Perl, and Ruby, among others. They can be used to accomplish a wide range of tasks, from managing system resources to monitoring network traffic.

One common use of Linux OS scripts is in system administration. Administrators can use scripts to automate the installation and configuration of software packages, perform backups and restorations, manage users and permissions, and monitor system performance. Scripts can also be used to generate reports, automate system updates, and perform other tasks that would otherwise be time-consuming and error prone.

Another use of Linux OS scripts is in web development. Developers can use scripts to automate the deployment of web applications, manage version control systems, run unit tests, and perform other tasks that are necessary for building and maintaining web applications.

Furthermore, Linux OS scripts can be used in cybersecurity to monitor system logs, detect and respond to security threats, and perform other security-related tasks. They can also be used in data analysis to automate data processing, run statistical analysis, and generate reports.

In conclusion, Linux OS scripts are versatile tools that can be used in a wide range of applications, from system administration to web development, cybersecurity, and data analysis. They are an essential component of the Linux operating system and are widely used by system administrators, developers, and security professionals.

Appendices

[3]An operating system (OS) is a software program that manages computer hardware and software resources and provides common services for computer programs. The functions of an operating system can be broadly classified into the following categories:

- Process management: An OS manages the creation, execution, and termination of processes. It allocates system resources such as memory and CPU time to each process and

ensures that they do not interfere with each other. This function is crucial to ensure that the computer operates efficiently and without conflicts.

- **Memory management:** An OS is responsible for managing the computer's memory resources. It allocates memory to processes as needed and ensures that each process has access to the memory it requires. It also performs memory swapping and paging operations to maximize the use of available memory.
- **File management:** An OS manages the storage of files on the computer's hard disk. It provides a file system that organizes files and directories and controls access to them. It also provides services for creating, opening, closing, reading, and writing files.
- **Device management:** An OS manages the computer's input and output devices such as keyboards, mice, displays, printers, and network cards. It provides device drivers that enable the computer to communicate with these devices and provides services for handling input/output operations.
- **Security:** An OS provides security mechanisms to protect the computer system from unauthorized access, viruses, and other threats. It provides user authentication, access control, and encryption services.
- **Network management:** An OS provides services for networking, including protocols for communication between computers, network interfaces, and services for accessing remote resources.

References

- [1 P. B. G. a. G. G. Abraham Silberschatz, "Operating Systems Concepts," [Online]. Available:
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- [2 "CRC Mastering Linux," [Online]. Available:
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Conclusion

In conclusion, operating systems play a crucial role in modern computing by providing a user-friendly interface for interacting with hardware and software. They manage system resources, facilitate communication between programs and devices, and provide security and stability for the computer system. From the early days of DOS and Unix to the modern era of Windows, macOS, and Linux, operating systems have evolved significantly and continue to do so with the advent of new technologies such as virtualization and cloud computing. As technology continues to advance, operating systems will undoubtedly play an important role in shaping the future of computing.

Assignment

GRADEMARK REPORT

FINAL GRADE

GENERAL COMMENTS

40/100

Instructor

Total:		40
1. Engagement with Literature Skills:		
+ some use of citations. + formatted reference list. - could be extended to support all report areas.	20	6
2. Knowledge and Understanding Skills: 4e		
Key functions: + Very good overview of key OS functions documented. - could be supported by citations. Bat Commands: + Good overview of relevant commands that demonstrates an understanding of the language. Bash Commands: + Good overview of relevant commands that demonstrates an understanding of the language. Bat Scripts: + Good overview of Win scripts that demonstrates the purpose of the languages. - No application to demonstrate knowledge and understanding of the scripting aspect of the language. Bash Scripts: + Good overview of Bash scripts that demonstrates the purpose of the languages. - No application to demonstrate knowledge and understanding of the scripting aspect of the language.	20	14

3. Cognitive and Intellectual Skills: 2e		
Evidence of some good analysis and understanding of OS functions and the relevant languages is clearly documented. - could be extended in 1/2 areas as mentioned above, to gain the extra marks in this category. + Excellent conclusion. - Citations and corresponding reference sources could be used to support the code analysis.	1 0	7
4. Practical Application Skills: 10e		
1. Bat Commands: + Good use of relevant Bat commands. - could be extended to include 1/2 additional commands. 2. Bash Commands: - No use of Bash commands documented. 3. Bat Scripts: - No use of Bat/PS scripts to demonstrate knowledge of the core syntax. 4. Bash Scripts: - No use of Bat/PS scripts to demonstrate knowledge of the core syntax.	4 0	8
5. Transferable Skills for Life and Professional Practice: 5+1+2+2		
+ Good report format, structure, and presentation. - Report sections could be numbered. - Tutorial Activity 1 – OS Types: relevant supplementary information on OS types not included in the Appendix of the report.	1 0	5

- Evidence of engagement with a relevant CPD course is not documented in the appendix.	
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