

# **Unix Assignment Questions**

## **Basic File Operations:**

- **Q1:** Create a new directory called project in your home directory. Inside the project directory, create two subdirectories named src and bin.
- **Q2:** Create a text file named notes.txt in the src directory and add some text into it using the echo command. Display the contents of the file.

```
punch@DESKTOP-9081IU8 MINGW64 ~  
$ mkdir -p project/src project/bin  
  
punch@DESKTOP-9081IU8 MINGW64 ~  
$ echo "This is first file"> ~/project/src/notes.txt  
  
punch@DESKTOP-9081IU8 MINGW64 ~  
$ cat ~/project/src/notes.txt  
This is first file cat /c/Users/punch/project/src/notes.txt
```

## **2. Working with File Permissions:**

- **Q3:** Create a file named data.txt. Set the permissions so that:
  - The owner can read and write.
  - The group can read.
  - Others have no permissions.
- **Q4:** Change the permissions of data.txt to be readable, writable, and executable by everyone.

```
punch@DESKTOP-9081IU8 MINGW64 ~  
$ touch data.txt  
  
punch@DESKTOP-9081IU8 MINGW64 ~  
$ chmod 640 data.txt  
  
punch@DESKTOP-9081IU8 MINGW64 ~  
$ chmod 777 data.txt
```

## **3. File Searching and Manipulation:**

- **Q5:** Using the find command, search for all .txt files in your home directory.

```
punch@DESKTOP-9081IU8 MINGW64 ~
$ find ~ -type f -name "*.txt"
/c/Users/punch/.nuget/packages/microsoft.bcl.asyncinterfaces/1.0.0/useSharedDesignerContext.txt
/c/Users/punch/.nuget/packages/microsoft.bcl.asyncinterfaces/1.0.0/version.txt
/c/Users/punch/.nuget/packages/microsoft.bcl.asyncinterfaces/1.1.0/useSharedDesignerContext.txt
/c/Users/punch/.nuget/packages/microsoft.bcl.asyncinterfaces/1.1.0/version.txt
/c/Users/punch/.nuget/packages/microsoft.bcl.asyncinterfaces/1.1.1/useSharedDesignerContext.txt
/c/Users/punch/.nuget/packages/microsoft.bcl.asyncinterfaces/1.1.1/version.txt
/c/Users/punch/.nuget/packages/microsoft.csharp/4.5.0/useSharedDesignerContext.txt
/c/Users/punch/.nuget/packages/microsoft.csharp/4.5.0/version.txt
/c/Users/punch/.nuget/packages/microsoft.csharp/4.7.0/useSharedDesignerContext.txt
/c/Users/punch/.nuget/packages/microsoft.csharp/4.7.0/version.txt
/c/Users/punch/.nuget/packages/microsoft.exchange.webservices/2.2.0/doc/Redist.txt
/c/Users/punch/.nuget/packages/microsoft.extensions.filesystemglobbing/5.0.0/useSharedDesignerContext.txt
/c/Users/punch/.nuget/packages/microsoft.extensions.filesystemglobbing/5.0.0/version.txt
/c/Users/punch/.nuget/packages/microsoft.graph/4.11.0/LICENSE.txt
/c/Users/punch/.nuget/packages/microsoft.graph.core/2.0.5/LICENSE.txt
/c/Users/punch/.nuget/packages/microsoft.management.infrastructure.runtime.win/2.0.0/LICENSE.txt
/c/Users/punch/.nuget/packages/microsoft.netcore.platforms/1.0.1/dotnet_library_license.txt
/c/Users/punch/.nuget/packages/microsoft.netcore.platforms/1.0.1/ThirdPartyNotices.txt
/c/Users/punch/.nuget/packages/microsoft.netcore.platforms/1.1.0/dotnet_library_license.txt
/c/Users/punch/.nuget/packages/microsoft.netcore.platforms/1.1.0/ThirdPartyNotices.txt
/c/Users/punch/.nuget/packages/microsoft.netcore.platforms/1.1.1/dotnet_library_license.txt
/c/Users/punch/.nuget/packages/microsoft.netcore.platforms/1.1.1/ThirdPartyNotices.txt
/c/Users/punch/.nuget/packages/microsoft.netcore.platforms/2.0.0/useSharedDesignerContext.txt
/c/Users/punch/.nuget/packages/microsoft.netcore.platforms/2.0.0/version.txt
/c/Users/punch/.nuget/packages/microsoft.netcore.platforms/2.1.2/useSharedDesignerContext.txt
/c/Users/punch/.nuget/packages/microsoft.netcore.platforms/2.1.2/version.txt
/c/Users/punch/.nuget/packages/microsoft.netcore.platforms/3.1.0/useSharedDesignerContext.txt
/c/Users/punch/.nuget/packages/microsoft.netcore.platforms/3.1.0/version.txt
/c/Users/punch/.nuget/packages/microsoft.netcore.platforms/5.0.0/useSharedDesignerContext.txt
/c/Users/punch/.nuget/packages/microsoft.netcore.platforms/5.0.0/version.txt
/c/Users/punch/.nuget/packages/microsoft.netcore.targets/1.0.1/dotnet_library_license.txt
/c/Users/punch/.nuget/packages/microsoft.netcore.targets/1.0.1/ThirdPartyNotices.txt
/c/Users/punch/.nuget/packages/microsoft.netcore.targets/1.1.0/dotnet_library_license.txt
/c/Users/punch/.nuget/packages/microsoft.netcore.targets/1.1.0/ThirdPartyNotices.txt
/c/Users/punch/.nuget/packages/microsoft.netcore.windows.apisets/1.0.1/dotnet_library_license.txt
/c/Users/punch/.nuget/packages/microsoft.netcore.windows.apisets/1.0.1/ThirdPartyNotices.txt
/c/Users/punch/.nuget/packages/microsoft.powershell.native/7.1.0/PSRP_version.txt
/c/Users/punch/.nuget/packages/microsoft.visualbasic/10.3.0/useSharedDesignerContext.txt
/c/Users/punch/.nuget/packages/microsoft.visualbasic/10.3.0/version.txt
/c/Users/punch/.nuget/packages/microsoft.visualstudio.ole.interop/16.7.30328.74/LICENSE.txt
/c/Users/punch/.nuget/packages/microsoft.web.webview2/1.0.1823.32/LICENSE.txt
/c/Users/punch/.nuget/packages/microsoft.web.webview2/1.0.1823.32/NOTICE.txt
/c/Users/punch/.nuget/packages/microsoft.web.webview2/1.0.864.35/LICENSE.txt
/c/Users/punch/.nuget/packages/microsoft.win32.primitives/4.3.0/dotnet_library_license.txt
/c/Users/punch/.nuget/packages/microsoft.win32.primitives/4.3.0/ThirdPartyNotices.txt
```

- **Q6:** Find all files in the /etc directory that were last modified in the last 7 days.
- **Q7:** Use the grep command to search for the word "error" in the /var/log/syslog file. Display the lines where this word occurs.

```
punch@DESKTOP-9081IU8 MINGW64 ~
$ sudo find /etc -type f -mtime -7
Sudo is disabled on this machine. To enable it, go to the Developer Settings page in the Settings app

punch@DESKTOP-9081IU8 MINGW64 ~
$ sudo find /etc -type f -mtime -7

punch@DESKTOP-9081IU8 MINGW64 ~
$ sudo grep "error" /var/log/syslog

punch@DESKTOP-9081IU8 MINGW64 ~
$ |
```

## 4. Text File Operations:

- **Q8:** Display the contents of a file `report.txt` line by line using the `cat`, `more`, and `less` commands.

```
punch@DESKTOP-9081IU8 MINGW64 ~  
$ echo -e "line 1\nline 2\nline 3" > report.txt  
  
punch@DESKTOP-9081IU8 MINGW64 ~  
$ cat report.txt  
line 1  
line 2  
line 3
```

- **Q9:** Use `head` and `tail` commands to display the first 10 and last 10 lines of a file named `log.txt`.

```
punch@DESKTOP-9081IU8 MINGW64 ~  
$ for i in {1..20}; do echo "line $i" >> log.txt; done  
  
punch@DESKTOP-9081IU8 MINGW64 ~  
$ head log.txt  
line 1  
line 2  
line 3  
line 4  
line 5  
line 6  
line 7  
line 8  
line 9  
line 10  
  
punch@DESKTOP-9081IU8 MINGW64 ~  
$ tail log.txt  
line 11  
line 12  
line 13  
line 14  
line 15  
line 16  
line 17  
line 18  
line 19  
line 20  
  
punch@DESKTOP-9081IU8 MINGW64 ~  
$ head -n 2 log.txt  
line 1  
line 2  
  
punch@DESKTOP-9081IU8 MINGW64 ~  
$ |
```

- **Q10:** Create a file named `names.txt` containing a list of names. Use `sort` to display the names in alphabetical order.

```
punch@DESKTOP-9081IU8 MINGW64 ~
$ echo -e "Tanya\nRahul\nShyam" > names.txt

punch@DESKTOP-9081IU8 MINGW64 ~
$ cat names.txt
Tanya
Rahul
Shyam

punch@DESKTOP-9081IU8 MINGW64 ~
$ sort names.txt
Rahul
Shyam
Tanya
```

- **Q11:** Use the `wc` command to count the number of words, lines, and characters in a file `data.csv`.

```
punch@DESKTOP-9081IU8 MINGW64 ~
$ echo -e "Name.Age.City\nTanya.21.Gurugram\nRahul.22.Delhi\nShyam.22.Delhi" > data.csv

punch@DESKTOP-9081IU8 MINGW64 ~
$ wc data.csv
 4  4 62 data.csv
```

## 5. Process Management:

- **Q12:** List all running processes using the `ps` command.

```
punch@DESKTOP-9081IU8 MINGW64 ~
$ ps aux
```

PID	PPID	PGID	WINPID	TTY	UID	STIME	COMMAND
2000	1887	2000	3144	pty0	197609	00:37:39	/usr/bin/ps
1887	1886	1887	1920	pty0	197609	00:08:27	/usr/bin/bash
1886	1	1886	2320	?	197609	00:08:27	/usr/bin/mintty

## 6. System Information:

- **Q13:** Display the current date and time using the `date` command.

```
punch@DESKTOP-9081IU8 MINGW64 ~
$ date
Sun Jun 22 00:38:30 IST 2025
```

- **Q14:** Use the `df` command to display disk space usage.

```
punch@DESKTOP-9081IU8 MINGW64 ~
$ df -h
Filesystem                Size      Used Avail Use% Mounted on
C:/Program Files/Git     237G     216G    21G   92% /
D:                       444G      18G   426G    5% /d
E:                       489G      14G   475G    3% /e
```

- **Q15:** Use the `uname` command to display your system's information (e.g., OS type, version).

```
punch@DESKTOP-9081IU8 MINGW64 ~
$ uname -a
MINGW64_NT-10.0-26100 DESKTOP-9081IU8 3.3.6-bec3d608-341.x86_64 2023-02-22 08:29 UTC x86_64 Msys
```

- **Q16:** Display the current system uptime using the `uptime` command.

```
punch@DESKTOP-9081IU8 MINGW64 ~
$ cat /proc/uptime
876465.22 102677.71
```

## 7. Network Commands:

- **Q17:** Use the `ping` command to check if a remote server (e.g., google.com) is reachable.

```
punch@DESKTOP-9081IU8 MINGW64 ~
$ ping amazon.com

Pinging amazon.com [54.239.28.85] with 32 bytes of data:
Reply from 54.239.28.85: bytes=32 time=369ms TTL=247
Reply from 54.239.28.85: bytes=32 time=379ms TTL=247
Reply from 54.239.28.85: bytes=32 time=286ms TTL=247
Reply from 54.239.28.85: bytes=32 time=302ms TTL=247

Ping statistics for 54.239.28.85:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 286ms, Maximum = 379ms, Average = 334ms
```

- **Q18:** Use the `ifconfig` or `ip a` command to display the network configuration of your system.

```
C:\Users\punch>ipconfig

Windows IP Configuration

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 Wi-Fi:

    Connection-specific DNS Suffix  . :
    IPv6 Address. . . . . : 2401:4900:1c30:3552:3a19:dfd1:799a:4d3c
    Temporary IPv6 Address. . . . . : 2401:4900:1c30:3552:ac2a:d56c:3dd6:ee7c
    Link-local IPv6 Address . . . . . : fe80::3392:4e61:5e44:4265%6
    IPv4 Address. . . . . : 192.168.1.16
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : fe80::1%6
                                192.168.1.1

Ethernet adapter Bluetooth Network Connection:

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

- **Q19:** Display the active network connections using the netstat command.

```
punch@DESKTOP-9081IU8 MINGW64 ~  
$ netstat  
  
Active Connections  
  
Proto Local Address           Foreign Address         State  
TCP    127.0.0.1:49668          platform:49669          ESTABLISHED  
TCP    127.0.0.1:49669          platform:49668          ESTABLISHED  
TCP    127.0.0.1:49670          platform:49671          ESTABLISHED  
TCP    127.0.0.1:49671          platform:49670          ESTABLISHED  
TCP    192.168.1.16:54865      104.18.36.34:https      ESTABLISHED  
TCP    192.168.1.16:54904      52.123.168.141:https    ESTABLISHED  
TCP    192.168.1.16:55053      52.123.171.38:https     ESTABLISHED  
TCP    192.168.1.16:55072      4.224.112.242:https     ESTABLISHED  
TCP    192.168.1.16:55081      52.175.141.217:https    ESTABLISHED  
TCP    192.168.1.16:55350      4.213.25.240:https      ESTABLISHED  
TCP    192.168.1.16:55592      40.100.141.162:https    TIME_WAIT  
TCP    192.168.1.16:55735      nrt12s12-in-f202:https  ESTABLISHED  
TCP    192.168.1.16:55747      lb-140-82-112-26-iad:https ESTABLISHED  
TCP    192.168.1.16:55763      lb-140-82-114-26-iad:https ESTABLISHED  
TCP    192.168.1.16:55819      104.208.16.91:https     TIME_WAIT  
TCP    192.168.1.16:55856      whatsapp-cdn-shv-01-del1:5222 ESTABLISHED
```