

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.

Answer 1,2:

```
MINGW64:/c/Users/HP/desktop
HP@LAPTOP-JAP24849 MINGW64 ~ (main)
$ cd desktop
HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
$ mkdir -p project/src project/bin
HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
$ echo "This is my first notes file." > ~/project/src/notes.txt
HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
$ cat ~/project/src/notes.txt
This is my first notes file.
HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
$
```

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.

MINGW64:/c/Users/HP/desktop

```
HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
$ touch data.txt

HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
$ chmod 640 data.txt

HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
$ chmod 777 data.txt

HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
$
```

3. File Searching and Manipulation:

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

Answer 5 ,6,7:

```
MINGW64:/c/Users/HP/desktop
HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
$ find ~ -type f -name "*.txt"
/c/Users/HP/.bun/install/cache/esquery@1.6.0@MIT/LICENSE.txt
/c/Users/HP/.bun/install/cache/jsc@3.1.0@MIT/LICENSE-MIT.txt
/c/Users/HP/.bun/install/cache/punycode@2.3.1@MIT/LICENSE-MIT.txt
/c/Users/HP/.bun/install/cache/string.prototype.repeat@1.0.0@MIT/LICENSE-MIT.txt
/c/Users/HP/.bun/install/cache/tslib@2.6.2@MIT/copyrightNotice.txt
/c/Users/HP/.bun/install/cache/tslib@2.6.2@MIT/LICENSE.txt
/c/Users/HP/.conda/environments.txt
/c/Users/HP/.eclipse/org.eclipse.oomph.jreInfo/infos.txt
/c/Users/HP/.eclipse/org.eclipse.oomph.setup/setup/brandingNotificationURIs.txt
/c/Users/HP/.eclipse/org.eclipse.oomph.setup/installer/installRoot.txt
/c/Users/HP/.nuget/packages/google.protobuf/2.9.1/THIRD-PARTY-NOTICES.txt
/c/Users/HP/.nuget/packages/microsoft.aspnetcore.app.runtime.win-x64/7.0.13/Microsoft.AspNetCore.App.versions.txt
/c/Users/HP/.nuget/packages/microsoft.extensions.configuration.abstractions/7.0.0/UseSharedDesignerContext.txt
/c/Users/HP/.nuget/packages/microsoft.extensions.configuration.abstractions/7.0.0/UseSharedDesignerContext.txt
/c/Users/HP/.nuget/packages/microsoft.extensions.dependencyinjection/7.0.0/UseSharedDesignerContext.txt
/c/Users/HP/.nuget/packages/microsoft.extensions.dependencyinjection.abstractions/7.0.0/UseSharedDesignerContext.txt
/c/Users/HP/.nuget/packages/microsoft.extensions.logging/7.0.0/UseSharedDesignerContext.txt
/c/Users/HP/.nuget/packages/microsoft.extensions.logging.abstractions/7.0.0/UseSharedDesignerContext.txt
/c/Users/HP/.nuget/packages/microsoft.extensions.logging.debug/7.0.0/UseSharedDesignerContext.txt
/c/Users/HP/.nuget/packages/microsoft.extensions.options/7.0.0/UseSharedDesignerContext.txt
/c/Users/HP/.nuget/packages/microsoft.extensions.primitives/7.0.0/UseSharedDesignerContext.txt
/c/Users/HP/.nuget/packages/microsoft.graphics.win2d/1.0.5.1/win2d.gi.thash.txt
/c/Users/HP/.nuget/packages/microsoft.netcore.app.runtime.win-x64/7.0.13/Microsoft.NETCore.App.versions.txt
/c/Users/HP/.nuget/packages/microsoft.windowsappsdk/1.2.221209.1/license.txt
/c/Users/HP/.nuget/packages/microsoft.windowsappsdk/1.2.221209.1/NOTICE.txt
/c/Users/HP/.nuget/packages/microsoft.windowsdesktop.app.runtime.win-x64/7.0.11/Microsoft.WindowsDesktop.App.versions.txt
/c/Users/HP/.nuget/packages/xamarin.android.glide/4.13.2.2/THIRD-PARTY-NOTICES.txt
/c/Users/HP/.nuget/packages/xamarin.android.glide.annotations/4.13.2.2/THIRD-PARTY-NOTICES.txt
/c/Users/HP/.nuget/packages/xamarin.android.glide.disklruCache/4.13.2.2/THIRD-PARTY-NOTICES.txt
/c/Users/HP/.nuget/packages/xamarin.android.glide.decoder/4.13.2.2/THIRD-PARTY-NOTICES.txt
/c/Users/HP/.nuget/packages/xamarin.androidx.activity/1.5.1/THIRD-PARTY-NOTICES.txt
/c/Users/HP/.nuget/packages/xamarin.androidx.activity/1.6.0/THIRD-PARTY-NOTICES.txt
/c/Users/HP/.nuget/packages/xamarin.androidx.activity.ktx/1.6.0/THIRD-PARTY-NOTICES.txt
/c/Users/HP/.nuget/packages/xamarin.androidx.annotation/1.5.0/THIRD-PARTY-NOTICES.txt
/c/Users/HP/.nuget/packages/xamarin.androidx.annotation/1.5.0.1/THIRD-PARTY-NOTICES.txt
/c/Users/HP/.nuget/packages/xamarin.androidx.annotation.experimental/1.3.0/THIRD-PARTY-NOTICES.txt
/c/Users/HP/.nuget/packages/xamarin.androidx.annotation.experimental/1.3.0.1/THIRD-PARTY-NOTICES.txt
/c/Users/HP/.nuget/packages/xamarin.androidx.appcompat/1.5.1/THIRD-PARTY-NOTICES.txt
/c/Users/HP/.nuget/packages/xamarin.androidx.appcompat/1.5.1/THIRD-PARTY-NOTICES.txt
/c/Users/HP/.nuget/packages/xamarin.androidx.arch.core.common/2.1.0.15/THIRD-PARTY-NOTICES.txt
/c/Users/HP/.nuget/packages/xamarin.androidx.arch.core.common/2.1.0.16/THIRD-PARTY-NOTICES.txt
/c/Users/HP/.nuget/packages/xamarin.androidx.arch.core.runtime/2.1.0.15/THIRD-PARTY-NOTICES.txt
/c/Users/HP/.nuget/packages/xamarin.androidx.arch.core.runtime/2.1.0.16/THIRD-PARTY-NOTICES.txt
/c/Users/HP/.nuget/packages/xamarin.androidx.appcompat.resources/1.5.1/THIRD-PARTY-NOTICES.txt
/c/Users/HP/.nuget/packages/xamarin.androidx.arch.core.common/2.1.0.15/THIRD-PARTY-NOTICES.txt
/c/Users/HP/.nuget/packages/xamarin.androidx.arch.core.common/2.1.0.16/THIRD-PARTY-NOTICES.txt
/c/Users/HP/.nuget/packages/xamarin.androidx.arch.core.runtime/2.1.0.15/THIRD-PARTY-NOTICES.txt
/c/Users/HP/.nuget/packages/xamarin.androidx.arch.core.runtime/2.1.0.16/THIRD-PARTY-NOTICES.txt
/c/Users/HP/.nuget/packages/xamarin.androidx.appcompat.resources/1.5.1/THIRD-PARTY-NOTICES.txt
```

```

MINGW64:/c/Users/HP/desktop
/c/Users/HP/starting project/Library/PackageCache/com.unity.collab-proxy@2.1.0/Lib/Editor/PlasticSCM/Localization/workspaceserver.zh-Hans.txt
/c/Users/HP/starting project/Library/PackageCache/com.unity.collab-proxy@2.1.0/Lib/Editor/PlasticSCM/Localization/workspaceserver.zh-Hant.txt
/c/Users/HP/starting project/Library/PackageCache/com.unity.collab-proxy@2.1.0/Lib/Editor/PlasticSCM/Localization/xdiff.en.txt
/c/Users/HP/starting project/Library/PackageCache/com.unity.collab-proxy@2.1.0/Lib/Editor/PlasticSCM/Localization/xdiff.es.txt
/c/Users/HP/starting project/Library/PackageCache/com.unity.collab-proxy@2.1.0/Lib/Editor/PlasticSCM/Localization/xdiff.ja.txt
/c/Users/HP/starting project/Library/PackageCache/com.unity.collab-proxy@2.1.0/Lib/Editor/PlasticSCM/Localization/xdiff.ko.txt
/c/Users/HP/starting project/Library/PackageCache/com.unity.collab-proxy@2.1.0/Lib/Editor/PlasticSCM/Localization/xdiff.zh-Hans.txt
/c/Users/HP/starting project/Library/PackageCache/com.unity.collab-proxy@2.1.0/Lib/Editor/PlasticSCM/Localization/xdiff.zh-Hant.txt
/c/Users/HP/starting project/Library/PackageCache/com.unity.ide.visualstudio@2.0.21/Editor/AppleEventManager~/howtobuild.txt
/c/Users/HP/starting project/Library/PackageCache/com.unity.ide.visualstudio@2.0.21/Editor/COMIntegration~/COMIntegration~/CMakeLists.txt
/c/Users/HP/starting project/Library/PackageCache/com.unity.ide.visualstudio@2.0.21/Editor/COMIntegration~/howtobuild.txt
/c/Users/HP/starting project/Library/PackageCache/com.unity.timeline@1.7.5/Editor/StyleSheets/res/Timeline_DarkSkin.txt
/c/Users/HP/starting project/Library/PackageCache/com.unity.timeline@1.7.5/Editor/StyleSheets/res/Timeline_LightSkin.txt
/c/Users/HP/starting project/ProjectSettings/ProjectVersion.txt
/c/Users/HP/untitled.txt
/c/Users/HP/virtualenv_name/Lib/site-packages/pip/_vendor/vendor.txt
/c/Users/HP/virtualenv_name/Lib/site-packages/pip-23.3.1.dist-info/AUTHORS.txt
/c/Users/HP/virtualenv_name/Lib/site-packages/pip-23.3.1.dist-info/entry_points.txt
/c/Users/HP/virtualenv_name/Lib/site-packages/pip-23.3.1.dist-info/LICENSE.txt
/c/Users/HP/virtualenv_name/Lib/site-packages/pip-23.3.1.dist-info/top_level.txt
/c/Users/HP/virtualenv_name/Lib/site-packages/setuptools-69.0.2.dist-info/entry_points.txt
/c/Users/HP/virtualenv_name/Lib/site-packages/setuptools-69.0.2.dist-info/top_level.txt
/c/Users/HP/virtualenv_name/Lib/site-packages/wheel/vendored/vendor.txt
/c/Users/HP/virtualenv_name/Lib/site-packages/wheel-0.42.0.dist-info/entry_points.txt
/c/Users/HP/virtualenv_name/Lib/site-packages/wheel-0.42.0.dist-info/LICENSE.txt

HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
$ 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

HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
$ sudo find /etc -type f -mtime -7

HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
$ sudo find /etc -type f -mtime -7
Operation was cancelled by the user

HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
$ sudo find /etc -type f -mtime -7

HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
$ sudo grep "error" /var/log/syslog

```

4. Text File Operations:

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

```

MINGW64:/c/Users/HP/desktop

HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
$ echo -e "Line 1: Project Overview\nLine 2: Objectives\nLine 3: Timeline" > report.txt

HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
$ cat report.txt
Line 1: Project Overview
Line 2: Objectives
Line 3: Timeline

HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
$ head -n 10 log.txt
head: cannot open 'log.txt' for reading: No such file or directory

HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
$ more report.txt
bash: more: command not found

```

MINGW64:/c/Users/HP/desktop

```
Line 1: Project Overview
Line 2: Objectives
Line 3: Timeline
report.txt (END)
```

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

```
HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
$ for i in {1..20}; do echo "Log line $i" >> log.txt; done
```

```
HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
```

```
$ head log.txt
```

```
Log line 1
Log line 2
Log line 3
Log line 4
Log line 5
Log line 6
Log line 7
Log line 8
Log line 9
Log line 10
```

```
HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
```

```
$ tail log.txt
```

```
Log line 11
Log line 12
Log line 13
Log line 14
Log line 15
Log line 16
Log line 17
Log line 18
Log line 19
Log line 20
```

```
HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
```

```
$ |
```

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

```
HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
$ echo -e "Ananya\nKuhu\nStuti\nDhwani" > names.txt

HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
$ cat names.txt
Ananya
Kuhu
Stuti
Dhwani

HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
$ sort names.txt
Ananya
Dhwani
Kuhu
Stuti

HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
$
```

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

```
HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
$ echo -e "Name,Age,City\nAnanya,22,Delhi\nRavi,25,Mumbai\nMeera,21,Bangalore" > data.csv

HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
$ wc data.csv
 4  4 64 data.csv

HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
$
```

5. Process Management:

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

```
HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
$ ps aux
```

	PID	PPID	PGID	WINPID	TTY	UID	STIME	COMMAND
S	1482	1241	1482	20084	pty0	197609	23:17:17	/usr/bin/less
	1240	1	1240	43432	?	197609	19:22:17	/usr/bin/mintty
S	1477	1241	1477	41212	pty0	197609	19:57:22	/usr/bin/less
	1241	1240	1241	24324	pty0	197609	19:22:18	/usr/bin/bash
	1594	1241	1594	40312	pty0	197609	23:37:33	/usr/bin/ps

```
HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
$
```

6. System Information:

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

```
HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
$ date
Sat Jun 21 23:38:06 IST 2025
```

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

```
HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
$ df -h
Filesystem      Size  Used Avail Use% Mounted on
C:/Program Files/Git 261G 202G   60G  78% /
D:               215G   2.1G  213G   1% /d

HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
```

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

```
P@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
$ uname -a
MINGW64_NT-10.0-26100 LAPTOP-JAP24849 3.4.10-bc1f6498.x86_64 2024-09-15 15:08 UTC x86_64 Msys
```

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

```
HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
$ cat /proc/uptime
1140440.07 746911.60
```

7. Network Commands:

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

```
HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
$ ping amazon.com

Pinging amazon.com [205.251.242.103] with 32 bytes of data:
Reply from 205.251.242.103: bytes=32 time=318ms TTL=243
Reply from 205.251.242.103: bytes=32 time=436ms TTL=243
Reply from 205.251.242.103: bytes=32 time=386ms TTL=243
Reply from 205.251.242.103: bytes=32 time=410ms TTL=243

Ping statistics for 205.251.242.103:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 318ms, Maximum = 436ms, Average = 387ms
```

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

```

C:\Users\HP\Desktop>ipconfig

Windows IP Configuration

Ethernet adapter Ethernet 3:

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

Unknown adapter Local Area Connection:

    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 Wi-Fi:

    Connection-specific DNS Suffix  . :
    IPv6 Address. . . . . : 2401:4900:1c30:3552:e1ae:330:39f0:5489
    Temporary IPv6 Address. . . . . : 2401:4900:1c30:3552:5c2:8e60:8841:c9f

```

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

```

HP@LAPTOP-JAP24849 MINGW64 ~/desktop (main)
$ netstat

Active Connections

Proto Local Address           Foreign Address         State
TCP    127.0.0.1:49680          LAPTOP-JAP24849:49681  ESTABLISHED
TCP    127.0.0.1:49681          LAPTOP-JAP24849:49680  ESTABLISHED
TCP    127.0.0.1:49682          LAPTOP-JAP24849:49683  ESTABLISHED
TCP    127.0.0.1:49683          LAPTOP-JAP24849:49682  ESTABLISHED
TCP    127.0.0.1:49739          LAPTOP-JAP24849:49740  ESTABLISHED
TCP    127.0.0.1:49740          LAPTOP-JAP24849:49739  ESTABLISHED
TCP    127.0.0.1:50925          LAPTOP-JAP24849:50927  ESTABLISHED
TCP    127.0.0.1:50927          LAPTOP-JAP24849:50925  ESTABLISHED
TCP    192.168.1.13:51123       104.18.32.47:https     ESTABLISHED
TCP    192.168.1.13:51136       104.18.32.47:https     ESTABLISHED
TCP    192.168.1.13:51202       7b-140-82-112-25-iad:https ESTABLISHED
TCP    192.168.1.13:51232       52.104.130.25:https    ESTABLISHED
TCP    192.168.1.13:51301       172.67.75.13:https     ESTABLISHED
TCP    192.168.1.13:51303       172.67.75.13:https     ESTABLISHED
TCP    192.168.1.13:51506       whatsapp-cdn-shv-03-del2:https CLOSE_WAIT
TCP    192.168.1.13:51507       whatsapp-cdn-shv-03-del2:https CLOSE_WAIT
TCP    192.168.1.13:51508       whatsapp-cdn-shv-03-del2:https CLOSE_WAIT
TCP    192.168.1.13:51531       116.119.85.99:https    CLOSE_WAIT
TCP    192.168.1.13:51532       whatsapp-cdn-shv-01-del1:https CLOSE_WAIT
TCP    192.168.1.13:51533       116.119.197.227:https  CLOSE_WAIT
TCP    192.168.1.13:51534       116.119.77.162:https   CLOSE_WAIT
TCP    192.168.1.13:51535       116.119.74.96:https    CLOSE_WAIT
TCP    192.168.1.13:51536       116.119.201.96:https   CLOSE_WAIT
TCP    192.168.1.13:51537       116.119.107.35:https   CLOSE_WAIT
TCP    192.168.1.13:51538       116.119.91.225:https   CLOSE_WAIT
TCP    192.168.1.13:51539       116.119.91.225:https   CLOSE_WAIT
TCP    192.168.1.13:51540       116.119.84.98:https    CLOSE_WAIT
TCP    192.168.1.13:51541       116.119.105.227:https  CLOSE_WAIT
TCP    192.168.1.13:51542       whatsapp-cdn-shv-01-ccu1:https CLOSE_WAIT
TCP    192.168.1.13:51543       182.79.139.96:https    CLOSE_WAIT
TCP    192.168.1.13:51544       whatsapp-cdn-shv-02-del1:https CLOSE_WAIT
TCP    192.168.1.13:51545       116.119.200.160:https  CLOSE_WAIT
TCP    192.168.1.13:51546       116.119.85.33:https    CLOSE_WAIT
TCP    192.168.1.13:51552       116.119.124.163:https  CLOSE_WAIT
TCP    192.168.1.13:51599       del03s18-in-f3:https   ESTABLISHED
TCP    192.168.1.13:51600       del03s18-in-f3:https   ESTABLISHED
TCP    192.168.1.13:51623       del11s08-in-f14:https  ESTABLISHED
TCP    192.168.1.13:51629       del11s08-in-f14:https  ESTABLISHED
TCP    192.168.1.13:51654       104.18.36.34:https     ESTABLISHED
TCP    192.168.1.13:51656       104.18.36.34:https     ESTABLISHED
TCP    192.168.1.13:51673       tzdela-ay-in-f14:https ESTABLISHED
TCP    192.168.1.13:51674       tzdela-ay-in-f14:https ESTABLISHED
TCP    192.168.1.13:51695       tzdela-ay-in-f14:https ESTABLISHED
TCP    192.168.1.13:51699       tzdela-ay-in-f14:https ESTABLISHED
TCP    192.168.1.13:51702       tzdela-ay-in-f14:https ESTABLISHED
TCP    192.168.1.13:51706       tzdela-ay-in-f14:https ESTABLISHED
TCP    192.168.1.13:51717       104.26.14.136:https    TIME_WAIT
TCP    192.168.1.13:51718       104.26.14.136:https    TIME_WAIT
TCP    192.168.1.13:51730       13.89.179.11:https     ESTABLISHED
TCP    192.168.1.13:51731       tzdela-ar-in-f3:http   TIME_WAIT
TCP    192.168.1.13:51733       a104-108-224-28:http   TIME_WAIT
TCP    192.168.1.13:51734       78.138.96.173:http     TIME_WAIT

```

