

Linux Task 1

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Group: IoT-701-A

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Output:

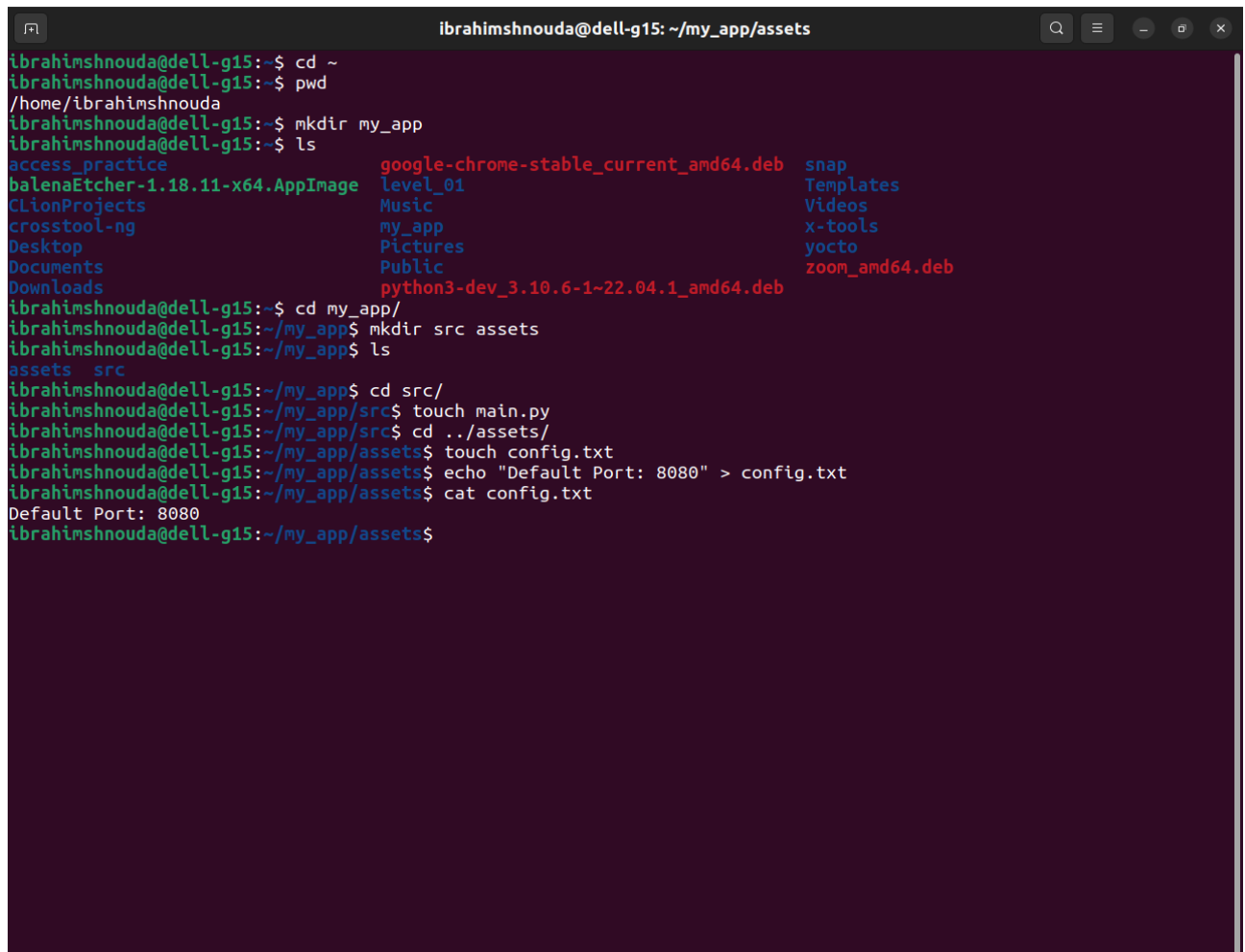
Part 1: Create the Project Structure

1.Create Directories:

- 1.1.ibrahimshnouda@dell-g15:~\$ mkdir my_app
- 1.2.ibrahimshnouda@dell-g15:~\$ cd my_app/
- 1.3.ibrahimshnouda@dell-g15:~/my_app\$ mkdir src assets

2.Create and Populate Files:

- 2.1.ibrahimshnouda@dell-g15:~/my_app\$ touch src/main.py
- 2.2.ibrahimshnouda@dell-g15:~/my_app\$ touch assets/config.txt
- 2.3.ibrahimshnouda@dell-g15:~/my_app\$ echo "Default Port: 8080" > assets/config.txt



```
ibrahimshnouda@dell-g15: ~/my_app/assets
ibrahimshnouda@dell-g15:~$ cd ~
ibrahimshnouda@dell-g15:~$ pwd
/home/ibrahimshnouda
ibrahimshnouda@dell-g15:~$ mkdir my_app
ibrahimshnouda@dell-g15:~$ ls
access_practice  google-chrome-stable_current_amd64.deb  snap
balenaEtcher-1.18.11-x64.AppImage  level_01  Templates
CLionProjects    Music  Videos
crosstool-ng     my_app  x-tools
Desktop          Pictures  yocto
Documents        Public  zoom_amd64.deb
Downloads        python3-dev_3.10.6-1~22.04.1_amd64.deb
ibrahimshnouda@dell-g15:~$ cd my_app/
ibrahimshnouda@dell-g15:~/my_app$ mkdir src assets
ibrahimshnouda@dell-g15:~/my_app$ ls
assets  src
ibrahimshnouda@dell-g15:~/my_app$ cd src/
ibrahimshnouda@dell-g15:~/my_app/src$ touch main.py
ibrahimshnouda@dell-g15:~/my_app/src$ cd ../assets/
ibrahimshnouda@dell-g15:~/my_app/assets$ touch config.txt
ibrahimshnouda@dell-g15:~/my_app/assets$ echo "Default Port: 8080" > config.txt
ibrahimshnouda@dell-g15:~/my_app/assets$ cat config.txt
Default Port: 8080
ibrahimshnouda@dell-g15:~/my_app/assets$
```

Part 2: Linking and Searching

1. Create a Symbolic Link:

1.1.

```
ibrahimshnouda@dell-g15:~/my_app$ ln -s assets/config.txt active_config
```

1.2.

```
ibrahimshnouda@dell-g15:~/my_app$ ls -l
total 8
lrwxrwxrwx 1 ibrahimshnouda ibrahimshnouda 17 Aug 27 15:11 active_config ->
assets/config.txt
drwxrwxr-x 2 ibrahimshnouda ibrahimshnouda 4096 Aug 27 15:05 assets
drwxrwxr-x 2 ibrahimshnouda ibrahimshnouda 4096 Aug 27 15:05 src
```

2. Find System Files:

2.1.

```
ibrahimshnouda@dell-g15:~/my_app$ sudo find /etc -name services
[sudo] password for ibrahimshnouda:
/etc/avahi/services
/etc/services
```

2.2.

```
ibrahimshnouda@dell-g15:~/my_app$ sudo cp /etc/services ./assets/
```

3. Search File Content:

3.1.

```
ibrahimshnouda@dell-g15:~/my_app$ cat assets/services | grep "http"
# Updated from https://www.iana.org/assignments/service-names-port-numbers/service-names-port-numbers.xhtml .
http      80/tcp      www          # WorldWideWeb HTTP
https     443/tcp     # http protocol over TLS/SSL
https     443/udp     # HTTP/3
http-alt  8080/tcp    webcache     # WWW caching service
```

3.2.

```
ibrahimshnouda@dell-g15:~/my_app$ grep -n "http" assets/services
3:# Updated from https://www.iana.org/assignments/service-names-port-numbers/service-names-port-numbers.xhtml .
39:http      80/tcp      www          # WorldWideWeb HTTP
83:https     443/tcp     # http protocol over TLS/SSL
84:https     443/udp     # HTTP/3
263:http-alt 8080/tcp    webcache     # WWW caching service
```

```
ibrahimshnouda@dell-g15: ~/my_app
ibrahimshnouda@dell-g15: ~/my_app/assets
ibrahimshnouda@dell-g15:~/my_app/assets$ cd ..
ibrahimshnouda@dell-g15:~/my_app$ ln -s assets/config.txt active_config
ibrahimshnouda@dell-g15:~/my_app$ ls -l
total 8
lrwxrwxrwx 1 ibrahimshnouda ibrahimshnouda 17 Aug 27 14:48 active_config -> assets/config.txt
drwxrwxr-x 2 ibrahimshnouda ibrahimshnouda 4096 Aug 27 14:45 assets
drwxrwxr-x 2 ibrahimshnouda ibrahimshnouda 4096 Aug 27 14:45 src
ibrahimshnouda@dell-g15:~/my_app$ find /etc -name services
find: '/etc/cups/ssl': Permission denied
find: '/etc/ssl/private': Permission denied
/etc/avahi/services
find: '/etc/polkit-1/localauthority': Permission denied
/etc/services
ibrahimshnouda@dell-g15:~/my_app$ sudo find /etc -name services
[sudo] password for ibrahimshnouda:
/etc/avahi/services
/etc/services
ibrahimshnouda@dell-g15:~/my_app$ sudo cp /etc/services ./assets/
ibrahimshnouda@dell-g15:~/my_app$ ls assets/
config.txt  services
ibrahimshnouda@dell-g15:~/my_app$ cat assets/services | grep "http"
# Updated from https://www.iana.org/assignments/service-names-port-numbers/service-names-port-numbers.xhtml .
http      80/tcp      www         # WorldWideWeb HTTP
https     443/tcp     # http protocol over TLS/SSL
https     443/udp     # HTTP/3
http-alt  8080/tcp    webcache    # WWW caching service
ibrahimshnouda@dell-g15:~/my_app$
ibrahimshnouda@dell-g15:~/my_app$
ibrahimshnouda@dell-g15:~/my_app$ grep -n "http" assets/services
3:# Updated from https://www.iana.org/assignments/service-names-port-numbers/service-names-port-numbers.xhtml .
39:http      80/tcp      www         # WorldWideWeb HTTP
83:https     443/tcp     # http protocol over TLS/SSL
84:https     443/udp     # HTTP/3
263:http-alt 8080/tcp    webcache    # WWW caching service
ibrahimshnouda@dell-g15:~/my_app$
```

Part 3: Verification and Cleanup

1. Verify Directory Structure:

```
ibrahimshnouda@dell-g15:~/my_app$ tree
```

```
.
├── active_config -> assets/config.txt
├── assets
│   ├── config.txt
│   └── services
├── src
└── main.py
```

2 directories, 4 files

2. Clean Up:

2.1.

```
ibrahimshnouda@dell-g15:~/my_app$ rm active_config
```

2.2.

```
ibrahimshnouda@dell-g15:~$ rm -rf my_app
```

```
ibrahimshnouda@dell-g15: ~/my_app$ tree
.
├── active_config -> assets/config.txt
├── assets
│   ├── config.txt
│   └── services
└── src
    └── main.py

2 directories, 4 files
ibrahimshnouda@dell-g15:~/my_app$ ls -R
.:
active_config  assets  src

./assets:
config.txt  services

./src:
main.py
ibrahimshnouda@dell-g15:~/my_app$ rm active_config
ibrahimshnouda@dell-g15:~/my_app$ cd ..
ibrahimshnouda@dell-g15:~$ rm -r my_app
rm: remove write-protected regular file 'my_app/assets/services'? y
ibrahimshnouda@dell-g15:~$ ls my_app
ls: cannot access 'my_app': No such file or directory
ibrahimshnouda@dell-g15:~$
```

By: Ibrahim Shnouda

Thank you...