

SIC-IOT702 / task 02 : linux commands

Instructor : eng/ Mohamed Ahmed

Student name: Ahmed Mohamed Elsayed

Part 1: Create the Project Structure

1. Create Directories:

1. In your home directory (~), create a main project directory called my_app.
2. Navigate inside the my_app directory.
3. Create two subdirectories: src (for source code) and assets (for other files).

```
zawawy34@zawawy34-VirtualBox:~$ cd
zawawy34@zawawy34-VirtualBox:~$ ls
Desktop  Documents  Downloads  Music  Pictures  Public  snap  Templates  Videos
zawawy34@zawawy34-VirtualBox:~$ mkdir my_app
zawawy34@zawawy34-VirtualBox:~$ ls
Desktop  Documents  Downloads  Music  my_app  Pictures  Public  snap  Templates  Videos
zawawy34@zawawy34-VirtualBox:~$ cd my_app
zawawy34@zawawy34-VirtualBox:~/my_app$ mkdir src assets
zawawy34@zawawy34-VirtualBox:~/my_app$ cd src
zawawy34@zawawy34-VirtualBox:~/my_app/src$ touch main.py
```

```
zawawy34@zawawy34-VirtualBox:~/my_app$ touch config.txt
```

2. Create and Populate Files:

1. Inside the src directory, create an empty file named main.py.
2. Inside the assets directory, create an empty file named config.txt.
3. Use the echo command to add the following line to assets/config.txt: echo "Default Port: 8080" > assets/config.txt

```
zawawy34@zawawy34-VirtualBox:~/my_app$ touch config.txt
zawawy34@zawawy34-VirtualBox:~/my_app$ echo "Default Port: 8080"> assets/config.txt
```

Part 2: Linking and Searching

1. Create a Symbolic Link:

1. While you are still inside the my_app directory, create a symbolic link (soft

link) to the assets/config.txt file. Name the link active_config.

2. Use the ls -l command to verify that the link was created and points to the correct original file.

```
zawawy34@zawawy34-VirtualBox:~/my_app$ ln -s assets/config.txt active_config
zawawy34@zawawy34-VirtualBox:~/my_app$ ls -l active config
ls: cannot access 'active': No such file or directory
ls: cannot access 'config': No such file or directory
zawawy34@zawawy34-VirtualBox:~/my_app$ ls -l active_config
lrwxrwxrwx 1 zawawy34 zawawy34 17 21:56 27 لش active_config -> assets/config.txt
```

2. Find System Files:

1. Use the find command to search for a file named services within the /etc/ directory.

2. Once found, use the cp command to copy the /etc/services file into your my_app/assets directory.

```
zawawy34@zawawy34-VirtualBox:~/my_app$ sudo find /etc/ -name services
[sudo] password for zawawy34:
/etc/services
/etc/avahi/services
zawawy34@zawawy34-VirtualBox:~/my_app$ cp / etc/services assets/
cp: -r not specified; omitting directory '/'
cp: cannot stat 'etc/services': No such file or directory
zawawy34@zawawy34-VirtualBox:~/my_app$ cp /etc/services assets/
zawawy34@zawawy34-VirtualBox:~/my_app$ cd assets
```

3. Search File Content:

1. Use the grep command to search for the term "http" inside the assets/services file you just copied.

2. Run the grep command again, but this time, display the line numbers for each match.

```

zawawy34@zawawy34-VirtualBox:~/my_app/assets$ ls
config.txt  services
zawawy34@zawawy34-VirtualBox:~/my_app/assets$ grep "http" assets/services
grep: assets/services: No such file or directory
zawawy34@zawawy34-VirtualBox:~/my_app/assets$ cd ..
zawawy34@zawawy34-VirtualBox:~/my_app$ grep "http" assets/services
# 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                 # https protocol over TLS/SSL
https     443/udp                 # HTTP/3
http-alt  8080/tcp    webcache    # WWW caching service
zawawy34@zawawy34-VirtualBox:~/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                 # https protocol over TLS/SSL
84:https   443/udp                 # HTTP/3
263:http-alt 8080/tcp    webcache    # WWW caching service

```

Part 3: Verification and Cleanup

1. Verify Directory Structure:

1. Use the tree command to display the final structure of your my_app directory. (If tree is not installed, you can use ls -R).

```

zawawy34@zawawy34-VirtualBox:~$ ls -r my_app
src  config.txt  assets  active_config

```

2. Clean Up:

1. Remove the symbolic link active_config.
2. Remove the entire my_app directory and all of its contents with a single command.

```

zawawy34@zawawy34-VirtualBox:~/my_app$ rm active_config
zawawy34@zawawy34-VirtualBox:~/my_app$ rm -r my_app
rm: cannot remove 'my_app': No such file or directory
zawawy34@zawawy34-VirtualBox:~/my_app$ cd ..
zawawy34@zawawy34-VirtualBox:~$ rm -r my_app
zawawy34@zawawy34-VirtualBox:~$ ls
Desktop  Documents  Downloads  Music  Pictures  Public  snap  Templates  Videos
zawawy34@zawawy34-VirtualBox:~$

```