

Day 5

```
ahmed-gwely@ahmed-gwely-ASUS-TUF-Gaming-F15-FX507VV4-FX507VV4:/media/ahmed-gwely/Games/linux_work/sic_work$ whoami
ahmed-gwely
ahmed-gwely@ahmed-gwely-ASUS-TUF-Gaming-F15-FX507VV4-FX507VV4:/media/ahmed-gwely/Games/linux_work/sic_work$ nano iot_logger/scripts/sensor_script.py
ahmed-gwely@ahmed-gwely-ASUS-TUF-Gaming-F15-FX507VV4-FX507VV4:/media/ahmed-gwely/Games/linux_work/sic_work$ python3 iot_logger/scripts/sensor_script.py >> iot_logger/logs/temperature.
log 2>1 &
[1] 9396
ahmed-gwely@ahmed-gwely-ASUS-TUF-Gaming-F15-FX507VV4-FX507VV4:/media/ahmed-gwely/Games/linux_work/sic_work$ ps aux |grep sensor_script.py
ahmed-g+  9396  0.0  0.0 28432 10852 pts/0    S   00:05   0:00 python3 iot_logger/scripts/sensor_script.py
ahmed-g+  9398  0.0  0.0  9284  1996 pts/0    S+  00:05   0:00 grep --color=auto sensor_script.py
ahmed-gwely@ahmed-gwely-ASUS-TUF-Gaming-F15-FX507VV4-FX507VV4:/media/ahmed-gwely/Games/linux_work/sic_work$ ls -l /proc/9396/fd
total 0
lrwx----- 1 ahmed-gwely ahmed-gwely 64 Sep  5 00:08 0 -> /dev/pts/0
l-wx----- 1 ahmed-gwely ahmed-gwely 64 Sep  5 00:08 1 -> /media/ahmed-gwely/Games/linux_work/sic_work/iot_logger/logs/temperature.log
l-wx----- 1 ahmed-gwely ahmed-gwely 64 Sep  5 00:08 2 -> /media/ahmed-gwely/Games/linux_work/sic_work/iot_logger/logs/temperature.log
ahmed-gwely@ahmed-gwely-ASUS-TUF-Gaming-F15-FX507VV4-FX507VV4:/media/ahmed-gwely/Games/linux_work/sic_work$ grep "2025" iot_logger/logs/temperature.log > iot_logger/logs/today.log
ahmed-gwely@ahmed-gwely-ASUS-TUF-Gaming-F15-FX507VV4-FX507VV4:/media/ahmed-gwely/Games/linux_work/sic_work$ cp iot_logger/logs/* iot_logger/data/
ahmed-gwely@ahmed-gwely-ASUS-TUF-Gaming-F15-FX507VV4-FX507VV4:/media/ahmed-gwely/Games/linux_work/sic_work$ unset SENSOR_TYPE
ahmed-gwely@ahmed-gwely-ASUS-TUF-Gaming-F15-FX507VV4-FX507VV4:/media/ahmed-gwely/Games/linux_work/sic_work$ (ls -l | grep .py; sleep 20) &
[2] 9484
ahmed-gwely@ahmed-gwely-ASUS-TUF-Gaming-F15-FX507VV4-FX507VV4:/media/ahmed-gwely/Games/linux_work/sic_work$
```

1- Difference between single quotes ' ' and double quotes " " in shell

Quotes	Behavior	Example
' ' (single quotes)	Literall string: everything inside is taken exactly as written ; variables and commands are not expanded .	echo '\$HOME' → outputs \$HOME
" " (double quotes)	Interpreted string: variables and commands are expanded , but spaces are preserved.	echo "My home: \$HOME" → outputs My home: /home/username

2- Difference between [-f filename] and [-d dirname]

Test	Meaning
[-f filename]	Checks if filename exists and is a regular file
[-d dirname]	Checks if dirname exists and is a directory

if [-f ~/iot_logger/logs/temperature.log]; then

echo "File exists"

fi

```
if [ -d ~/iot_logger/data ]; then
```

```
    echo "Directory exists"
```

```
fi
```

3- stdout/stderr redirection, appending vs overwrite

Symbol	Meaning	Example
>	Overwrite stdout	echo "Hello" > file.txt (replaces contents)
>>	Append stdout	echo "Hello" >> file.txt (adds to end)
2>	Redirect stderr (errors)	ls /no_such_dir 2> errors.log
2>&1	Redirect stderr to same as stdout	python3 script.py >> log.txt 2>&1

```
pid=$(pgrep -f sensor_script.py)
```

```
ls -l /proc/$pid/fd
```

4- Example of a for loop in bash

```
for file in ~/iot_logger/scripts/*.py; do
```

```
    echo "Python script: $file"
```

```
done
```

5- Simple bash calculator (add/subtract):

```
echo "Enter first number:"
```

```
read a
```

```
echo "Enter second number:"
```

```
read b
```

```
echo "Choose operation (+ or -):"
```

```
read op
```

```
if [ "$op" = "+" ]; then
```

```
    result=$((a + b))
```

```
elif [ "$op" = "-" ]; then
```

```
    result=$((a - b))
```

```
else
```

```
    echo "Invalid operation"
```

```
    exit 1
```

```
fi
```

```
echo "Result: $result"
```