SHELL CODE ANALYSIS

Linux (Intel x86-64)

Aim : To automate the wifi connection by using bash script in Linux 64 bit shell code

Procedure : Connect to Wi-Fi Network

Step 1 : Start Ubuntu and open the terminal.

Step 2 : Check Wi-Fi Status:
- Use the `nmcli` command to retrieve the current Wi-Fi status.
- Store the Wi-Fi status in the variable `wifi_status`.

Step 3 : Turn on Wi-Fi (if it's off):
- Check if the Wi-Fi status is "disabled".
- If Wi-Fi is disabled, turn it on using the `nmcli radio wifi on` command.
- Print a message indicating that Wi-Fi has been turned on.
- Wait for 10 seconds using `sleep 10` to allow time for the Wi-Fi to initialise.

Step 4 : List Available Wi-Fi Networks:
- Print a message indicating that the script is listing available Wi-Fi networks.
- Use the `nmcli device wifi list` command to display a list of available Wi-Fi networks.

Step 5 : Set Wi-Fi Credentials:
- Set the Wi-Fi SSID and password in variables `wifi_ssid` and `wifi_password`**.**

Step 6 : Check if Already Connected:
- Use `nmcli` to check if the device is already connected to the specified Wi-Fi network (`$wifi_ssid`).
- If connected, print a message indicating that the device is already connected.

Step 7 : Connect to Wi-Fi (if not already connected):
- If not connected, check if the specified Wi-Fi network is available in the list of available networks.
- If available, use `nmcli` to connect to the Wi-Fi network with the specified SSID and password.
- Print a success or failure message based on the result of the connection attempt.

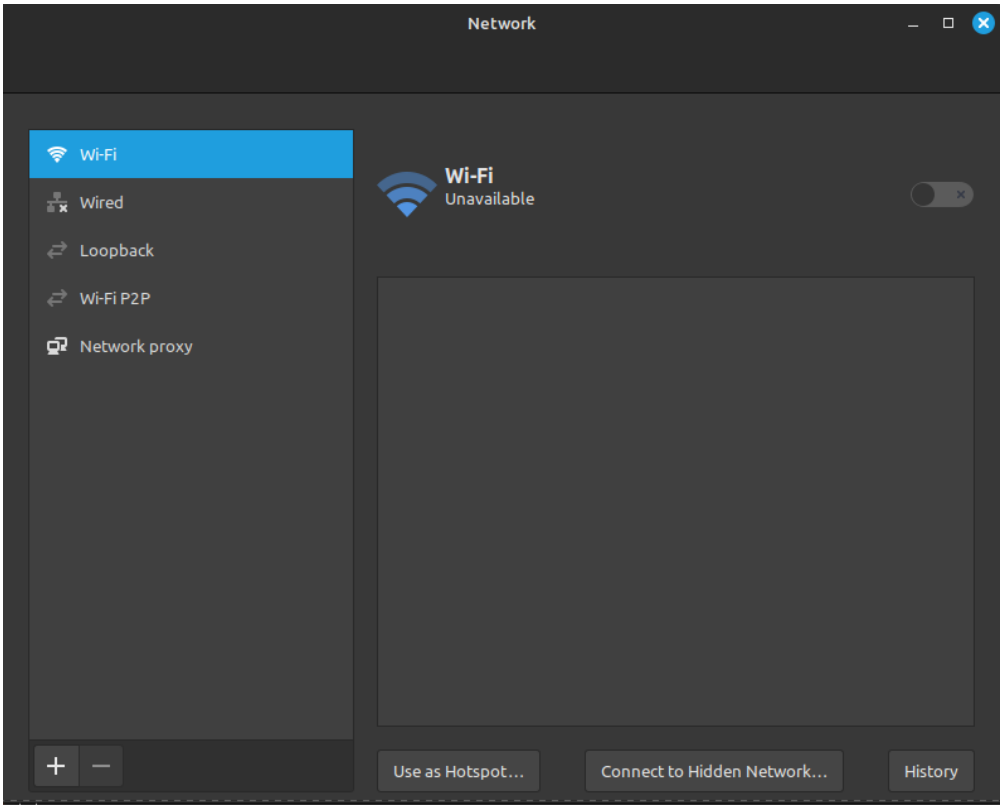
Program :

```
#!/bin/bash

# Check Wi-Fi status
wifi_status=$(nmcli radio wifi)

# Check if Wi-Fi is turned off
if [ "$wifi_status" = "disabled" ]; then
    # If Wi-Fi is off, turn it on
    nmcli radio wifi on
    echo "Wi-Fi turned on"

    # Wait for 10 seconds before attempting to connect
    sleep 10
else
    echo "Wi-Fi is already on"
fi

# List available Wi-Fi networks
echo "Available Wi-Fi networks:"
nmcli device wifi list

# Set Wi-Fi credentials
```

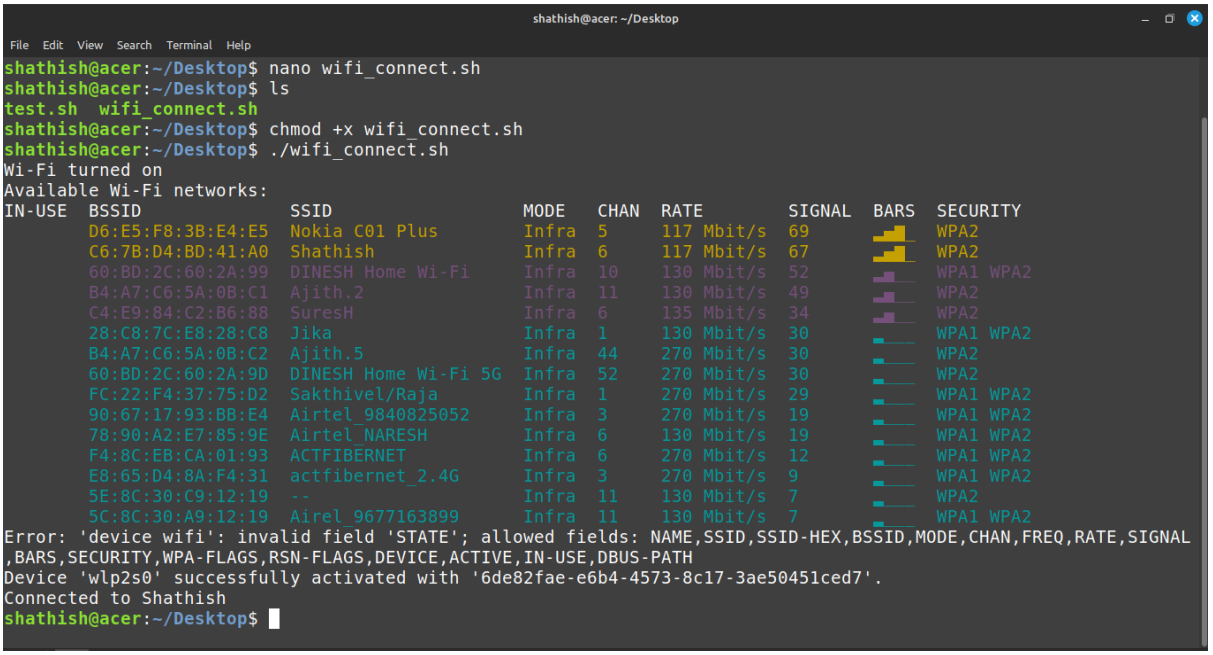
```
wifi_ssid="YourWiFiSSID"
wifi_password="YourWiFiPassword"

# Check if the Wi-Fi is already connected
if nmcli -t -f NAME,STATE dev wifi | grep -q "^$wifi_ssid:connected$"; then
    echo "Already connected to $wifi_ssid"
else
    # Check if the desired network is available
    if nmcli device wifi list | grep -q "$wifi_ssid"; then
        # Connect to the Wi-Fi network
        nmcli device wifi connect "$wifi_ssid" password "$wifi_password"
        if [ $? -eq 0 ]; then
            echo "Connected to $wifi_ssid"
        else
            echo "Failed to connect to $wifi_ssid"
        fi
    else
        echo "$wifi_ssid not found among available networks"
    fi
fi
```

Output :

Before program execution :



On executon :



After execution :