WINTER – SEMESTER
Course Code: MCSE505P
Course-Title: – Computer Network Lab Component
DIGITAL ASSIGNMENT – VI

Faculty: - SRIMATHI C (SCOPE)

(LAB) Slot- L35+L36
Name: Nidhi Singh
Reg. No: 22MAI0015

DESIGN A WIRELESS NETWORK TOPOLOGY IN MININET

Installation

- *git clone git://github.com/intrig-unicamp/mininet-wifi*

```
pratham@Prathamesh:~$ git clone http://github.com/intrig-unicamp/mininet-wifi
Cloning into 'mininet-wifi'...
warning: redirecting to https://github.com/intrig-unicamp/mininet-wifi/
remote: Enumerating objects: 25602, done.
remote: Counting objects: 100% (951/951), done.
remote: Compressing objects: 100% (384/384), done.
remote: Total 25602 (delta 645), reused 823 (delta 563), pack-reused 24651
Receiving objects: 100% (25602/25602), 22.84 MiB | 721.00 KiB/s, done.
Resolving deltas: 100% (17927/17927), done.
```

- *cd mininet-wifi*

```
pratham@Prathamesh:~$ cd mininet-wifi
pratham@Prathamesh:~/mininet-wifi$ sudo util/install.sh -Wlnfv
Detected Linux distribution: Ubuntu 22.04 jammy amd64
Ubuntu
sys.version_info(major=3, minor=10, micro=6, releaselevel='final', serial=0)
Detected Python (python3) version 3
Installing Mininet dependencies
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer required:
  linux-headers-5.19.0-40-generic linux-hwe-5.19-headers-5.19.0-40 linux-image-
9.0-40-generic
Use 'sudo apt autoremove' to remove them.
The following NEW packages will be installed:
  python-is-python3
0 upgraded, 1 newly installed, 0 to remove and 10 not upgraded.
Need to get 2,788 B of archives.
```

- *sudo mn –wifi*

```
pratham@Prathamesh:~$ sudo mn --wifi
*** Adding stations:
sta1 sta2
*** Adding access points:
ap1
*** Configuring nodes...
*** Creating network
*** Adding controller
*** Adding hosts:

*** Adding switches:

*** Adding links:
(sta1, ap1) (sta2, ap1)
*** Starting controller(s)
c0
*** Starting L2 nodes
ap1 ...
*** Starting CLI:
mininet-wifi>
```

CREATING WIRELESS TOPOLOGIES

- *sudo mn --wifi --topo single,3*

```
pratham@Prathamesh:~$ sudo mn --wifi --topo single,3
*** Adding stations:
sta1 sta2 sta3
*** Adding access points:
ap1
*** Configuring nodes...
*** Creating network
*** Adding controller
*** Adding hosts:

*** Adding switches:

*** Adding links:
(sta1, ap1) (sta2, ap1) (sta3, ap1)
*** Starting controller(s)
c0
*** Starting L2 nodes
ap1 ...
*** Starting CLI:
mininet-wifi> links
sta1-wlan0<->wifi (use iw/iwconfig to check connectivity)
sta2-wlan0<->wifi (use iw/iwconfig to check connectivity)
sta3-wlan0<->wifi (use iw/iwconfig to check connectivity)
```

```
mininet-wifi> dump
<Controller c0: 127.0.0.1:6653 pid=11994>
<Station sta1: sta1-wlan0:10.0.0.1 pid=11802>
<Station sta2: sta2-wlan0:10.0.0.2 pid=11804>
<Station sta3: sta3-wlan0:10.0.0.3 pid=11806>
<OVSAP ap1: lo:127.0.0.1,ap1-wlan1:None pid=11811>
mininet-wifi>
```

- *sudo mn --wifi --topo linear,4*

```
pratham@Prathamesh:~$ sudo mn --wifi --topo linear,4
*** Adding stations:
sta1 sta2 sta3 sta4
*** Adding access points:
ap1 ap2 ap3 ap4
*** Configuring nodes...
*** Creating network
*** Adding controller
*** Adding hosts:

*** Adding switches:

*** Adding links:
(ap2, ap1) (ap3, ap2) (ap4, ap3) (sta1, ap1) (sta2, ap2) (sta3, ap3) (sta4, ap4)
*** Starting controller(s)
c0
*** Starting L2 nodes
ap1 ap2 ap3 ap4 ...
*** Starting CLI:
```

```
mininet-wifi> links
ap2-eth2<->ap1-eth2 (OK OK)
ap3-eth2<->ap2-eth3 (OK OK)
ap4-eth2<->ap3-eth3 (OK OK)
sta1-wlan0<->wifi (use iw/iwconfig to check connectivity)
sta2-wlan0<->wifi (use iw/iwconfig to check connectivity)
sta3-wlan0<->wifi (use iw/iwconfig to check connectivity)
sta4-wlan0<->wifi (use iw/iwconfig to check connectivity)
```