

Assignment 14

Part-1

1. The following lines of code are added in 210010009_part1.cc

```
#include "ns3/netanim-module.h"
```

```
// To create a NetAnim animation object
```

```
AnimationInterface anim ("210010009_part1.xml"); // Define the output file name
```

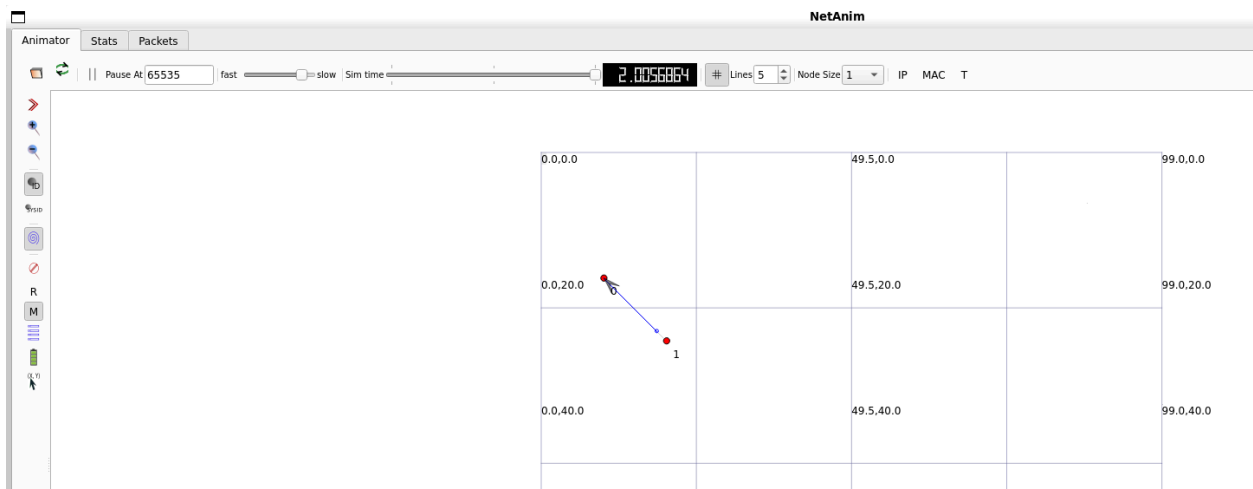
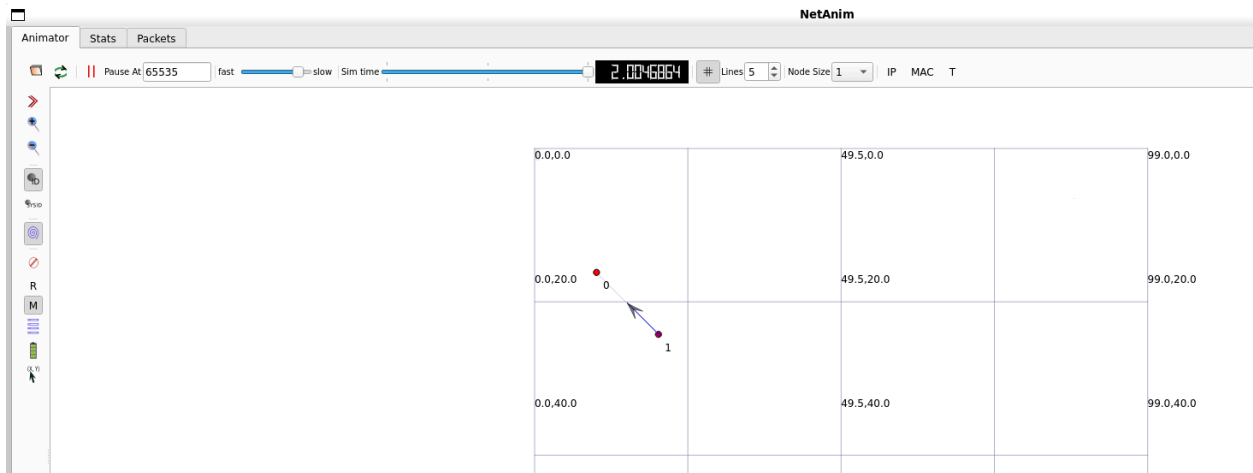
```
// To connect the animation interface to the nodes
```

```
anim.SetConstantPosition (nodes.Get (0), 10.0, 20.0);
```

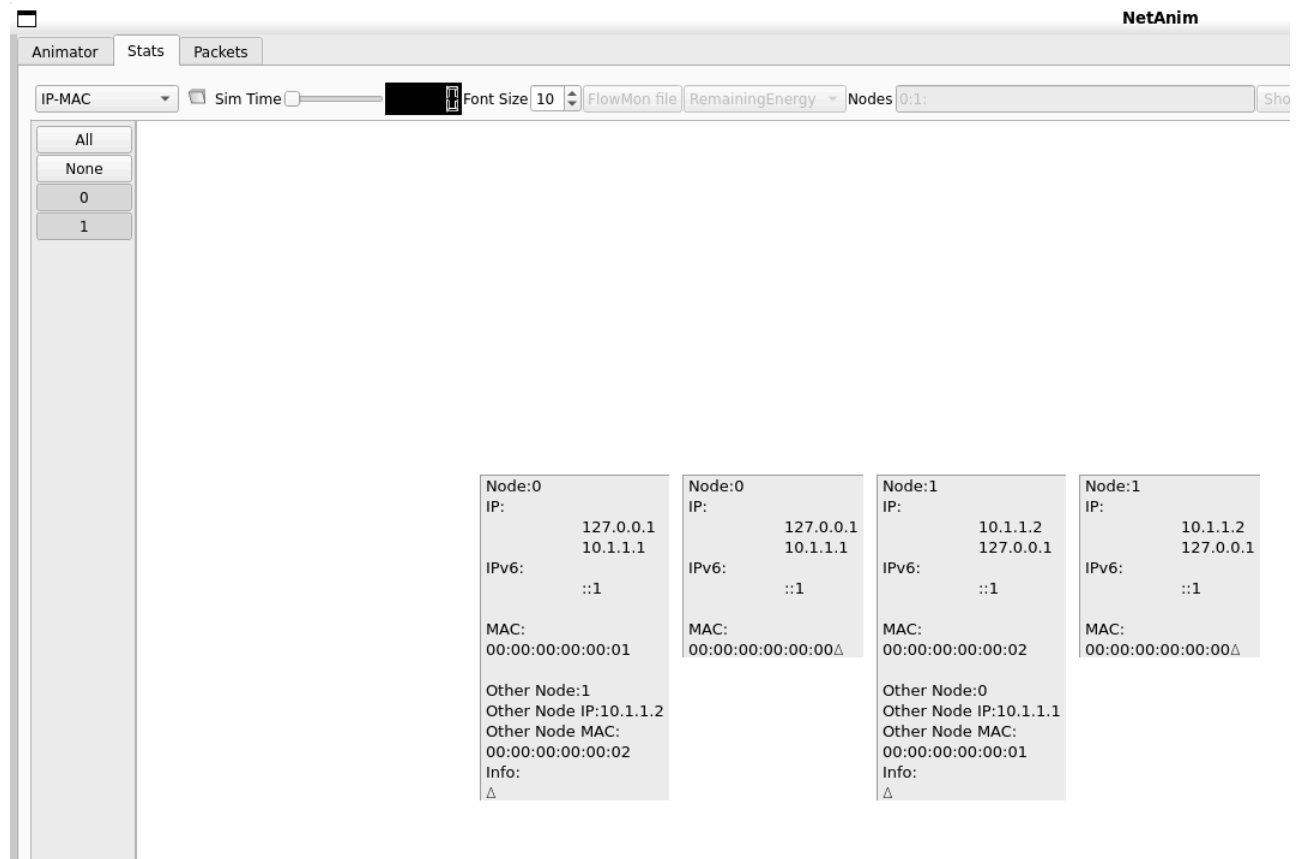
```
anim.SetConstantPosition (nodes.Get (1), 20.0, 30.0);
```

```
paru04@LAPTOP-NVGR5VB8:~/ns-allinone-3.36.1/ns-3.36.1$ ./ns3 run scratch/210010009_part1.cc
Consolidate compiler generated dependencies of target scratch_210010009_part1
AnimationInterface WARNING:Node:0 Does not have a mobility model. Use SetConstantPosition if it is stationary
AnimationInterface WARNING:Node:1 Does not have a mobility model. Use SetConstantPosition if it is stationary
AnimationInterface WARNING:Node:0 Does not have a mobility model. Use SetConstantPosition if it is stationary
AnimationInterface WARNING:Node:1 Does not have a mobility model. Use SetConstantPosition if it is stationary
At time +2s client sent 1024 bytes to 10.1.1.2 port 9
At time +2.00369s server received 1024 bytes from 10.1.1.1 port 49153
At time +2.00369s server sent 1024 bytes to 10.1.1.1 port 49153
At time +2.00737s client received 1024 bytes from 10.1.1.2 port 9
```

2.



3.



Part-2

1. The following lines of code are added in 210010009_part2.cc

```
Ptr<FlowMonitor> flowMonitor;
FlowMonitorHelper flowHelper;
flowMonitor = flowHelper.InstallAll();
Simulator::Stop(Seconds(10));
Simulator::Run ();
flowMonitor->SerializeToXmlFile("210010009_part2.xml", true, true);
```

2.

```
paru04@LAPTOP-NVGR5VB8:~/ns-allinone-3.36.1/ns-3.36.1$ ./ns3 run scratch/210010009_part2.cc
Consolidate compiler generated dependencies of target scratch_210010009_part2
[ 0%] Building CXX object scratch/CMakeFiles/scratch_210010009_part2.dir/210010009_part2.cc.o
[ 0%] Linking CXX executable ../../build/scratch/ns3.36.1-210010009_part2-default
AnimationInterface WARNING:Node:0 Does not have a mobility model. Use SetConstantPosition if it is stationary
AnimationInterface WARNING:Node:1 Does not have a mobility model. Use SetConstantPosition if it is stationary
AnimationInterface WARNING:Node:0 Does not have a mobility model. Use SetConstantPosition if it is stationary
AnimationInterface WARNING:Node:1 Does not have a mobility model. Use SetConstantPosition if it is stationary
At time +2s client sent 1024 bytes to 10.1.1.2 port 9
At time +2.00369s server received 1024 bytes from 10.1.1.1 port 49153
At time +2.00369s server sent 1024 bytes to 10.1.1.1 port 49153
At time +2.00737s client received 1024 bytes from 10.1.1.2 port 9
paru04@LAPTOP-NVGR5VB8:~/ns-allinone-3.36.1/ns-3.36.1$ python3 flowmon-parse-results.py 210010009_part2.xml
Reading XML file . done.
FlowID: 1 (UDP 10.1.1.1/49153 --> 10.1.1.2/9)
    TX bitrate: None
    RX bitrate: None
    Mean Delay: 3.69 ms
    Packet Loss Ratio: 0.00 %
FlowID: 2 (UDP 10.1.1.2/9 --> 10.1.1.1/49153)
    TX bitrate: None
    RX bitrate: None
    Mean Delay: 3.69 ms
    Packet Loss Ratio: 0.00 %
```