

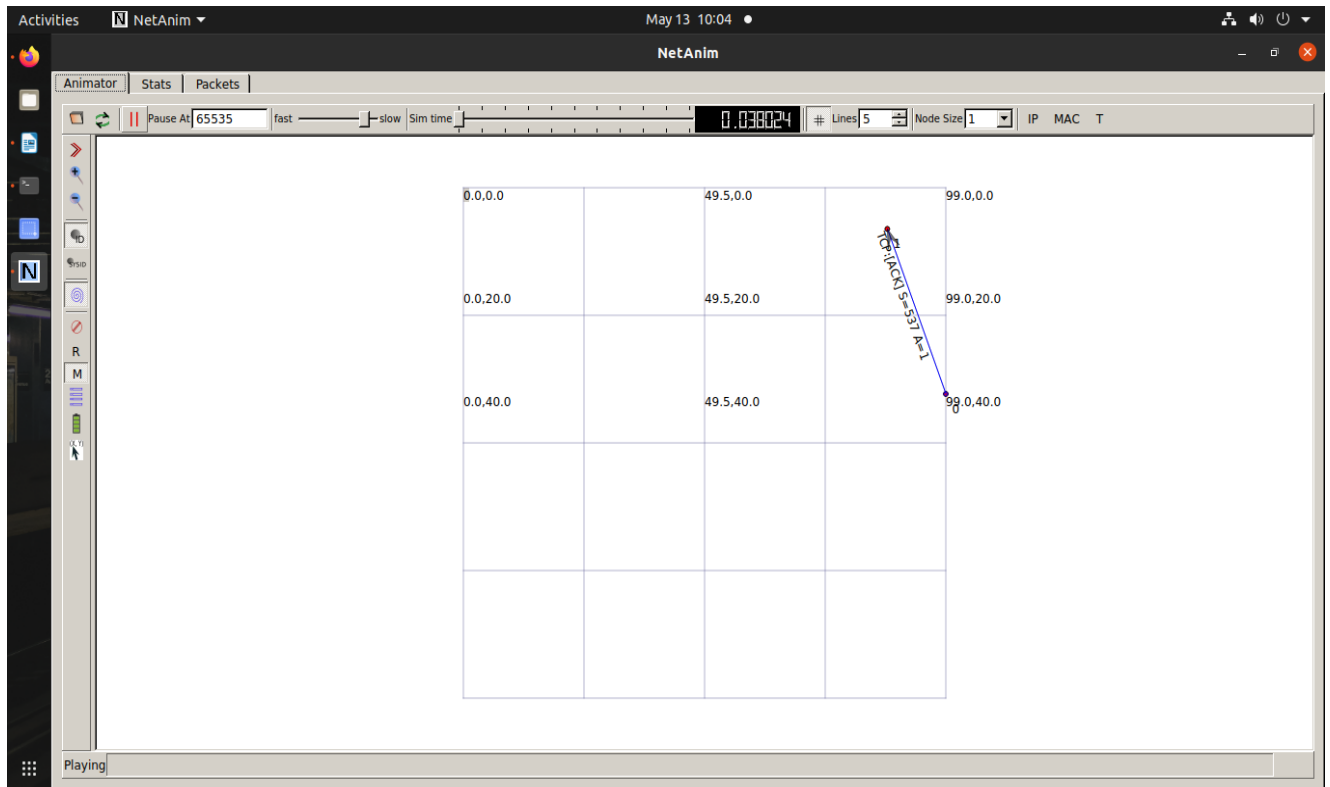
Program 4: Star Topology using Point to Point Protocol

Program:

```
#include <string>
#include <fstream>
#include "ns3/core-module.h"
#include "ns3/point-to-point-module.h"
#include "ns3/internet-module.h"
#include "ns3/applications-module.h"
#include "ns3/network-module.h"
#include "ns3/packet-sink.h"
#include "ns3/netanim-module.h"
using namespace ns3;
int main (int argc, char *argv[])
{
    uint32_t maxBytes = 0;
    NodeContainer nodes;
    nodes.Create (2);
    PointToPointHelper pointToPoint;
    pointToPoint.SetDeviceAttribute ("DataRate", StringValue ("500Kbps"));
    pointToPoint.SetChannelAttribute ("Delay", StringValue ("5ms"));
    NetDeviceContainer devices;
    devices = pointToPoint.Install (nodes);
    InternetStackHelper internet;
    internet.Install (nodes);
    Ipv4AddressHelper ipv4;
```

```
ipv4.SetBase ("10.1.1.0", "255.255.255.0");
Ipv4InterfaceContainer i = ipv4.Assign (devices);
uint16_t port = 9; // well-known echo port number
BulkSendHelper source ("ns3::TcpSocketFactory",
    InetSocketAddress (i.GetAddress (1), port));
source.SetAttribute ("MaxBytes", UintegerValue (maxBytes));
ApplicationContainer sourceApps = source.Install (nodes.Get (0));
sourceApps.Start (Seconds (0.0));
sourceApps.Stop (Seconds (10.0));
PacketSinkHelper sink ("ns3::TcpSocketFactory",
    InetSocketAddress (Ipv4Address::GetAny (), port));
ApplicationContainer sinkApps = sink.Install (nodes.Get (1));
sinkApps.Start (Seconds (0.0));
sinkApps.Stop (Seconds (10.0));
Simulator::Stop (Seconds (10.0));
AnimationInterface anim ("fourth.xml");
anim.EnablePacketMetadata(true);
Simulator::Run ();
Simulator::Destroy ();
}
```

Output:



Github Link:

<https://github.com/raghav3102/NPLab/blob/main/B4.cc>