

Program 1: Point to point link, client server, UDP protocol

Program:

```
#include "ns3/netanim-module.h"
#include "ns3/core-module.h"
#include "ns3/network-module.h"
#include "ns3/internet-module.h"
#include "ns3/point-to-point-module.h"
#include "ns3/applications-module.h"
using namespace ns3;
int main (int argc, char *argv[])
{
    Time::SetResolution (Time::NS);
    NodeContainer nodes;
    nodes.Create (2);
    PointToPointHelper pointToPoint;
    pointToPoint.SetDeviceAttribute ("DataRate", StringValue ("5Mbps"));
    pointToPoint.SetChannelAttribute ("Delay", StringValue ("2ms"));
    NetDeviceContainer devices;
    devices = pointToPoint.Install (nodes);
    InternetStackHelper stack;
    stack.Install (nodes);
    Ipv4AddressHelper address;
    address.SetBase ("10.1.1.0", "255.255.255.0");
    Ipv4InterfaceContainer interfaces = address.Assign (devices);
    UdpEchoServerHelper echoServer (9);
    ApplicationContainer serverApps = echoServer.Install (nodes.Get (1));
    serverApps.Start (Seconds (1.0));
```

```

serverApps.Stop (Seconds (10.0));

UdpEchoClientHelper echoClient (interfaces.GetAddress (1), 9);

echoClient.SetAttribute ("MaxPackets", UIntegerValue (1));

echoClient.SetAttribute ("Interval", TimeValue (Seconds (1.0)));

echoClient.SetAttribute ("PacketSize", UIntegerValue (1024));

ApplicationContainer clientApps = echoClient.Install (nodes.Get (0));

clientApps.Start (Seconds (2.0));

clientApps.Stop (Seconds (10.0));

AnimationInterface anim ("first.xml");

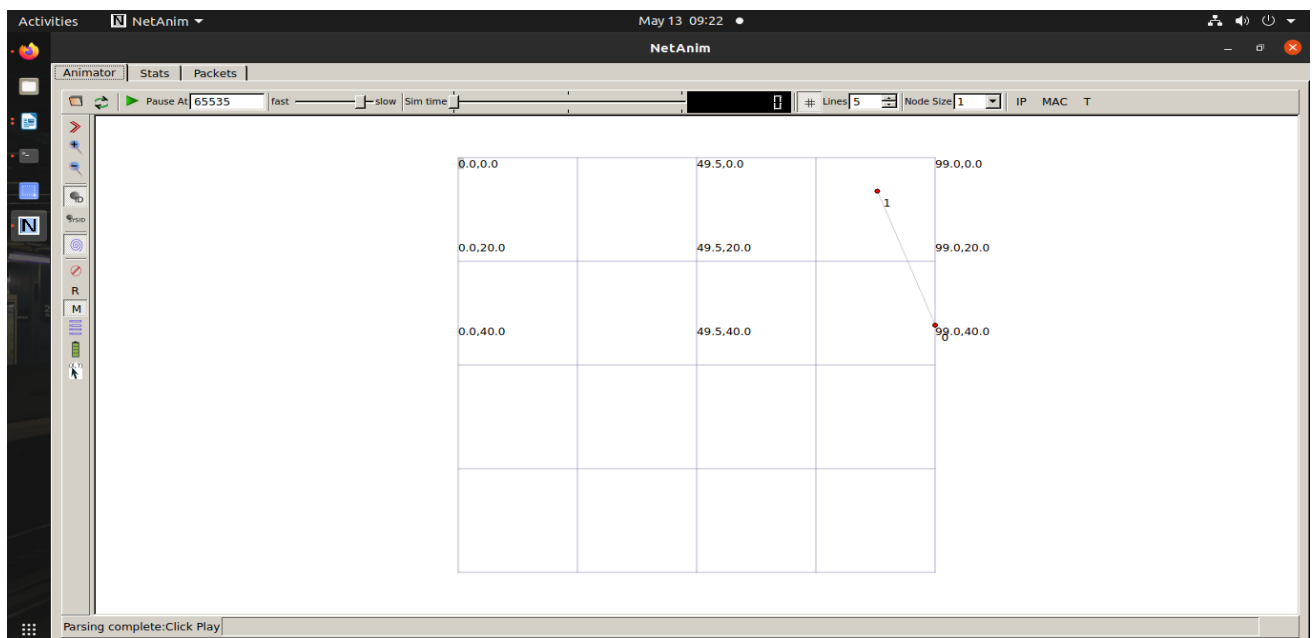
Simulator::Run ();

Simulator::Destroy ();

return 0;
}

```

Output:



Github Link:

<https://github.com/raghav3102/NPLab/blob/main/B1.cc>