

Lab Assignments

Data Communication and Networks



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Data Communication and Network (IT-311)

Bachelor of Technology

3rd Year, 5th Semester

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ASSIGNMENT – 01

- 1) Know the Basics of Cisco Packet Tracer.**
- 2) Download and work with CPT.**

Solution:

Cisco Packet Tracer:

Introduction –

- The leaders in Networking.
- It is a cross-platform visual simulation tool designed by Cisco System that allows users to create network topologies and imitate modern computer networks.
- The software allows users to simulate the configuration of Cisco routers and switches using a simulated command line interface.
- Platforms: Windows, Linux, Android, MacOS.
- An innovative and powerful networking simulation tool used for practice, discovery and, troubleshooting.
- Helps to understand network practically.

How To Download Cisco Packet Tracer...

Step 1 –

Google

netacad

[All](#)
[Books](#)
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About 33,80,000 results (0.26 seconds)

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Cisco Packet Tracer

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Click on Packet Tracer

Step 3 –


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Courses / Cisco Packet Tracer

Cisco Packet Tracer

Gain real skills with our powerful network simulation tool where you practice networking, IoT, and cybersecurity skills in a virtual lab – no hardware needed!

Download Packet Tracer when you enroll in one of the three self-paced Packet Tracer Courses.

[View courses](#)

Click on View course



Click on Packet Tracer

Step 4 –



This course is now improved and available on a new website. Making it more engaging and efficient for you.

You will be redirected to the [Skills For All](#) with Cisco website. Once there, enroll in a Cisco Packet Tracer course to download the software and get started.

Click on Skills For All

If the window hasn't opened, select this link: [Skills For All](#)

Step 5 –

[Catalog](#)
[Help](#)

[Take a Tour](#)

[Catalog](#) > [Cisco Packet Tracer](#)

Cisco Packet Tracer

Practice networking, IoT, and cybersecurity skills virtually with Cisco Packet Tracer, our powerful simulation and visualization tool. To download the latest version, enroll in our short Getting Started with Cisco Packet Tracer course today.

LANGUAGES AVAILABLE

English

Practice Real Skills. Virtually.

Deepen your understanding of how a network works, and step into the virtual lab to build your own! With Cisco Packet Tracer, you can watch how data travels across your network using Simulation Mode, or practice setting up your own device rack and cables in Physical Mode. Once you are ready, expand your simulations to analyze network traffic, add Internet of Things (IoT) devices, integrate Python code, or practice network automation skills. New to networking? No problem. Cisco Packet Tracer enables a suite of tutored activities that give you hints along the way, if you want them. Packet Tracer Tutored Activities are currently available for select courses.

With over a million users across the globe, you will find a vibrant community to share network designs, ideas, and more. Best of all, it's **free**!

Cisco Packet Tracer is a powerful tool - let us help you be successful with updated features, tips, and best practices. **Enroll in our short [Getting Started with Cisco Packet Tracer](#) course to download the latest version.**

Step 7-

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[Catalog](#) > [Getting Started with Cisco Packet Tracer](#)

Getting Started with Cisco Packet Tracer

This course is part of the [Cisco Packet Tracer](#)

Your on-ramp to Cisco Packet Tracer. Get familiar with the simulation environment and download the latest version.

LANGUAGES AVAILABLE

English

Get Started

Select English then Click Get Started

Meet our innovative network simulation and visualization tool, Cisco Packet Tracer. This virtual lab is an interactive way to practice networking, IoT, and cybersecurity - no hardware required! This course introduces you to the Cisco Packet Tracer simulation environment. Learn how to use Cisco Packet Tracer to visualize and simulate a network using everyday examples. Practice your skills with interactive virtual lab activities, and hone your problem-solving skills, too. Get valuable tips and best practices and gain confidence to use this powerful tool in later courses or for your own practice.

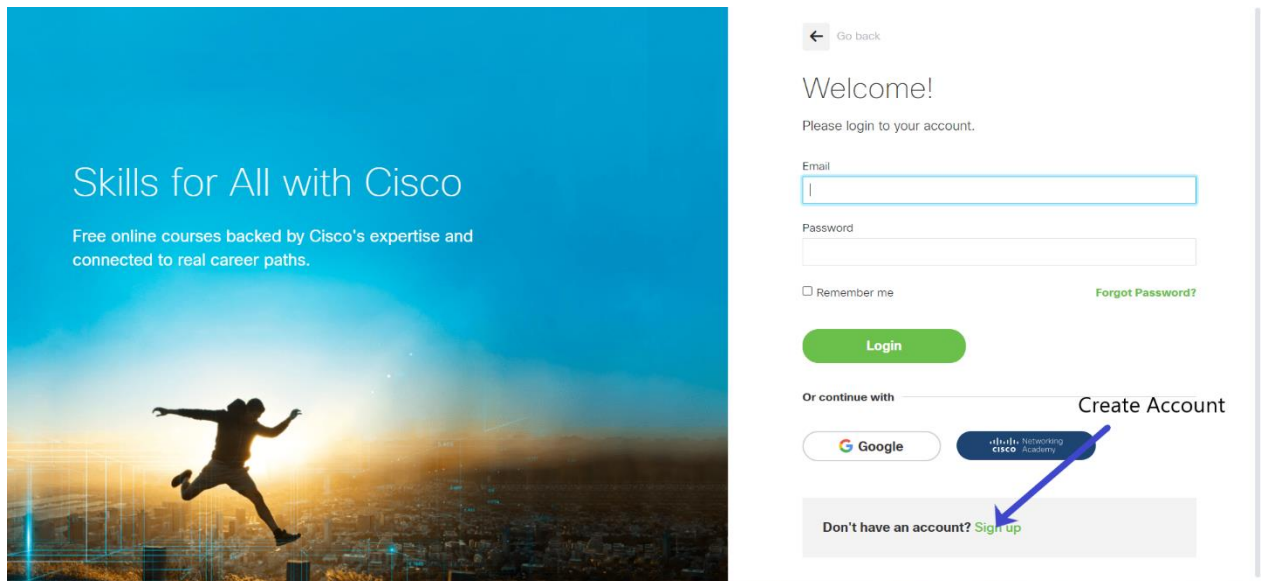
Enroll to download Cisco Packet Tracer for free and get started today!

Free
No purchase required, anytime.

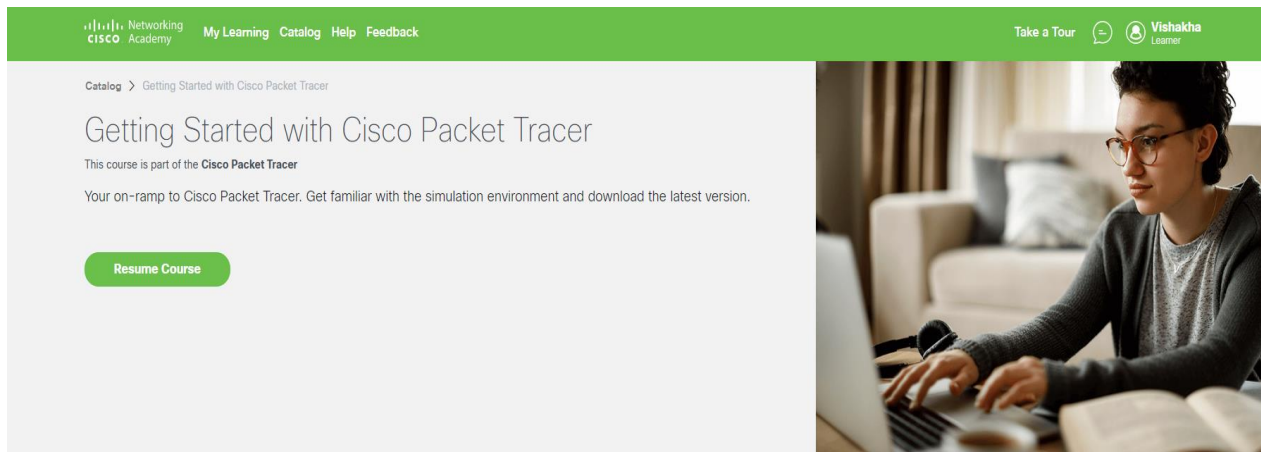
2 Hours
Estimated time to complete - but finish it in your time.

Beginner
1 out of 3 courses

Step 8 -



Step 9 –



Meet our innovative network simulation and visualization tool, Cisco Packet Tracer. This virtual lab is an interactive way to practice networking, IoT, and cybersecurity – no hardware required! This course introduces you to the Cisco Packet Tracer simulation environment. Learn how to use Cisco Packet Tracer to visualize and simulate a network using everyday examples. Practice your skills with interactive virtual lab activities, and hone your problem-solving skills, too. Get valuable tips and best practices and gain confidence to use this powerful tool in later courses or for your own practice.

Enroll to download Cisco Packet Tracer for free and get started today!

Achievements



Free

No purchase required, anytime.



2 Hours

Estimated time to complete – but finish it in your time.



Beginner

Level of the course.



4 Languages

English, Español, Português, Français

Step 10 –

Networking
Academy

My Learning
Catalog
Help
Feedback

Take a Tour

Vishakha
Learner

Getting Started with Cisco Packet Tracer
Getting Started with Cisco Packet Tracer: Download and Use Cisco Packet Tracer

Getting Started with Cisco Packet Tracer

Download and Use Cisco Packet Tracer

Create a Cisco Packet Tracer Network

Course Completion Assessment & Survey

Networking
Academy

Module 1: Download and Use Cisco Packet Tracer

Scroll down ⌵ and select 'Install Cisco Packet Tracer' to begin.

1.0 Install Cisco Packet Tracer

1.1 The Cisco Packet Tracer Interface

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Step 11 –

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Getting Started with Cisco Packet Tracer: Download and Use Cisco Packet Tracer

Getting Started with Cisco Packet Tracer

Download and Use Cisco Packet Tracer

Create a Cisco Packet Tracer Network

Course Completion Assessment & Survey

Networking
Academy

Install Cisco Packet Tracer

Scroll to begin ⌵

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Step 12 –


Getting Started with Cisco Packet Tracer

- Download and Use Cisco Packet Tracer
- Create a Cisco Packet Tracer Network
- Course Completion Assessment & Survey

Download and Use Cisco Packet Tracer

Trouble Viewing Content? [Click here to view](#) | [View in Fullscreen](#)

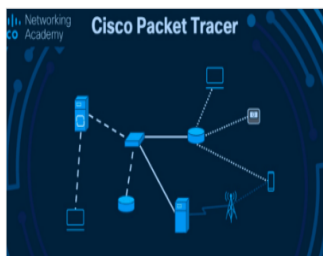
1.0.3 Download Cisco Packet Tracer



To obtain and install your copy of Cisco Packet Tracer, please follow the instructions from the link below:
<https://skillsforall.com/resources/lab-downloads>

Step 13 –

Learning Resources



Cisco Packet Tracer

Cisco Packet Tracer, an innovative network configuration simulation tool, helps you hone your networking configuration skills from your desktop. Use Packet Tracer to experiment while building, managing & securing infrastructures.

To obtain and install your copy of Cisco Packet Tracer, please follow these simple steps:

Step 1. Download the version of Packet Tracer you require.

[Packet Tracer 8.1.1 MacOS 64bit](#)

[Packet Tracer 8.1.1 Ubuntu 64bit](#)

[Packet Tracer 8.1.1 Windows 64bit](#)

Step 2. Launch the Packet Tracer install program.

Step 3. Launch Cisco Packet Tracer by selecting the appropriate icon.

Step 4. When prompted, click on Skills For All green button to authenticate.

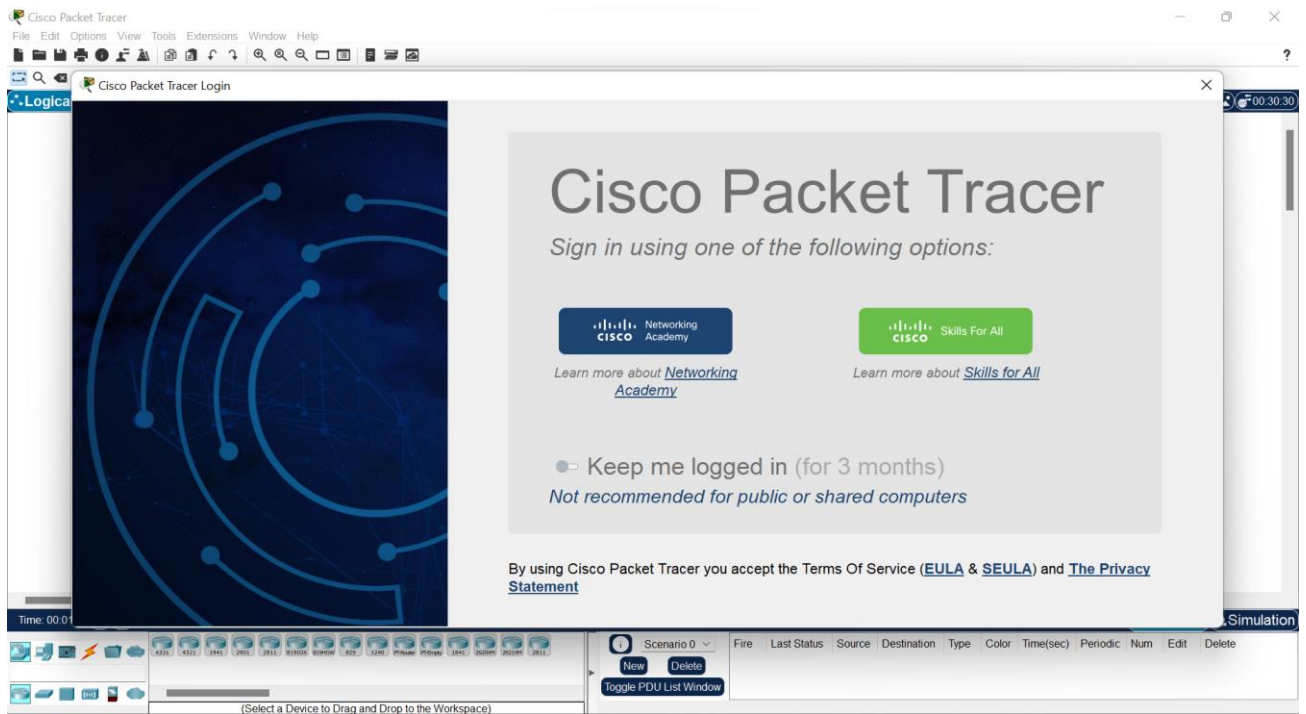
Step 5. Cisco Packet Tracer will launch and you are ready to explore its features.

If you need more guidance, please follow the [Cisco Packet Tracer Download and Installation Instructions](#).

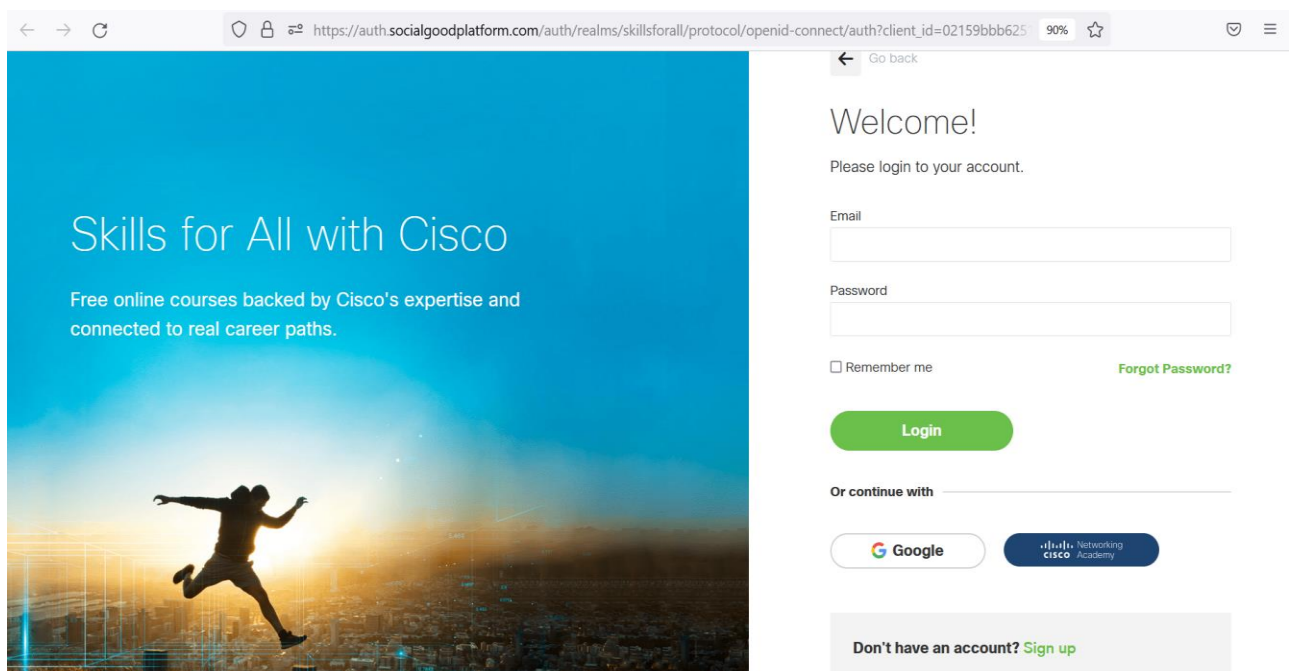
System Requirements:

Computer with either Windows (8.1, 10, 11), MacOS (10.14 or newer) or Ubuntu 20.04 LTS operating system, amd64(x86-64) CPU, 4 GB of free RAM, 1.4 GB of free disk space

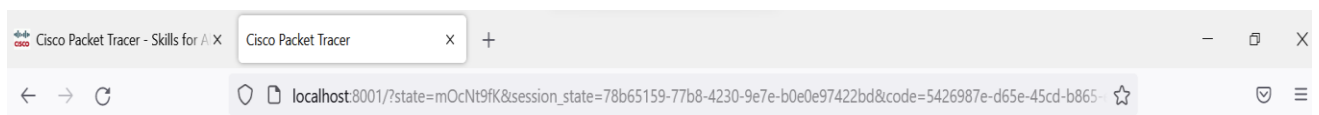
Step 14 –



Step 15 –



Step 16 –

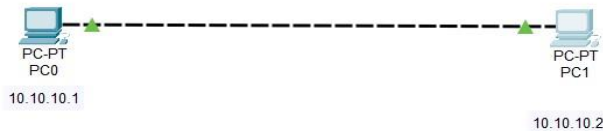


You have successfully logged in to Cisco Packet Tracer. You may close this tab.

ASSIGNMENT – 02

Establish pair to pair communication and show that delivery of packets is successful check MAC and PHY address of systems.

Solution:



```
C:\>ipconfig

FastEthernet0 Connection: (default port)

    Connection-specific DNS Suffix...:
    Link-local IPv6 Address . . . . .: FE80::20A:41FF:FE5C:9360
    IPv6 Address . . . . .: ::
    IPv4 Address. . . . .: 10.10.10.1
    Subnet Mask . . . . .: 255.0.0.0
    Default Gateway . . . . .: ::
                                   0.0.0.0

Bluetooth Connection:

    Connection-specific DNS Suffix...:
    Link-local IPv6 Address . . . . .: ::
    IPv6 Address . . . . .: ::
    IPv4 Address. . . . .: 0.0.0.0
    Subnet Mask . . . . .: 0.0.0.0
    Default Gateway . . . . .: ::
                                   0.0.0.0

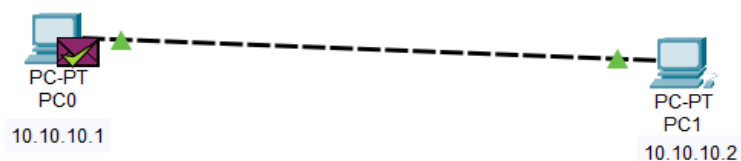
C:\>ping 10.10.10.2

Pinging 10.10.10.2 with 32 bytes of data:

Reply from 10.10.10.2: bytes=32 time=1ms TTL=128
Reply from 10.10.10.2: bytes=32 time<1ms TTL=128
Reply from 10.10.10.2: bytes=32 time<1ms TTL=128
Reply from 10.10.10.2: bytes=32 time<1ms TTL=128

Ping statistics for 10.10.10.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

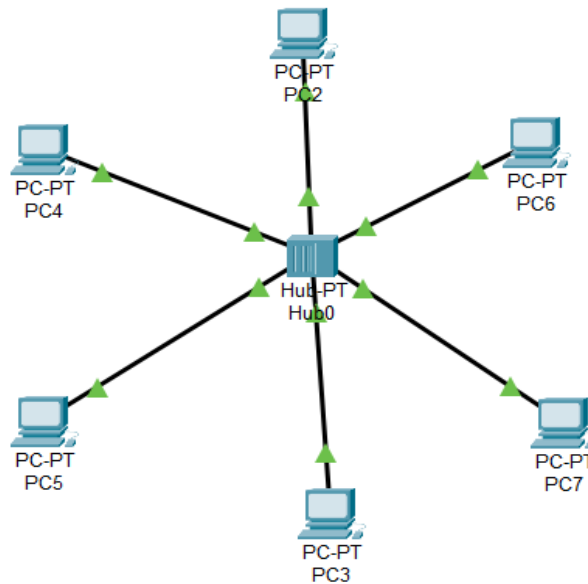
C:\>
```



ASSIGNMENT – 03

Simulate LAN using HUB after setting show packet movement through simulation.

Solution:



```
Cisco Packet Tracer PC Command Line 1.0
C:\>ipconfig

FastEthernet0 Connection: (default port)

    Connection-specific DNS Suffix...:
    Link-local IPv6 Address . . . . .: FE80::202:16FF:FE80:797A
    IPv6 Address . . . . .: ::
    IPv4 Address . . . . .: 10.10.10.3
    Subnet Mask . . . . .: 255.0.0.0
    Default Gateway . . . . .: ::
                                0.0.0.0

Bluetooth Connection:

    Connection-specific DNS Suffix...:
    Link-local IPv6 Address . . . . .: ::
    IPv6 Address . . . . .: ::
    IPv4 Address . . . . .: 0.0.0.0
    Subnet Mask . . . . .: 0.0.0.0
    Default Gateway . . . . .: ::
                                0.0.0.0

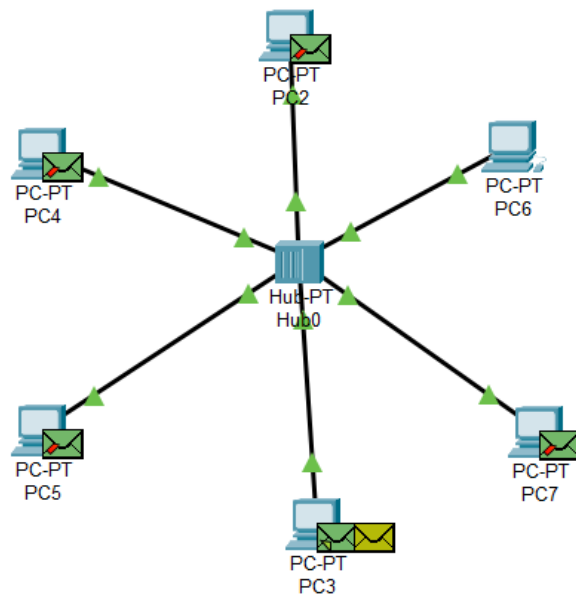
C:\>ping 10.10.10.6

Pinging 10.10.10.6 with 32 bytes of data:

Reply from 10.10.10.6: bytes=32 time<lms TTL=128
Reply from 10.10.10.6: bytes=32 time<lms TTL=128
Reply from 10.10.10.6: bytes=32 time<lms TTL=128
Reply from 10.10.10.6: bytes=32 time<lms TTL=128

Ping statistics for 10.10.10.6:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

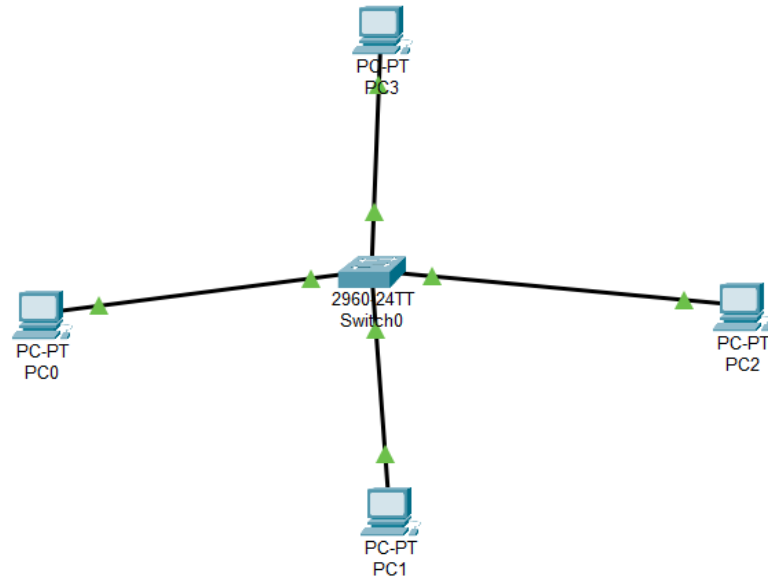
C:\>
```



ASSIGNMENT – 04

Question: Demonstrate the use of the switch and show through stimulation the working of the same.

Solution:



```
Cisco Packet Tracer PC Command Line 1.0
C:\>ipconfig

FastEthernet0 Connection: (default port)

    Connection-specific DNS Suffix.:
    Link-local IPv6 Address.....: FE80::210:11FF:FEAC:C73D
    IPv6 Address.....: ::
    IPv4 Address.....: 10.10.10.0
    Subnet Mask.....: 255.0.0.0
    Default Gateway.....: ::
                          0.0.0.0

Bluetooth Connection:

    Connection-specific DNS Suffix.:
    Link-local IPv6 Address.....: ::
    IPv6 Address.....: ::
    IPv4 Address.....: 0.0.0.0
    Subnet Mask.....: 0.0.0.0
    Default Gateway.....: ::
                          0.0.0.0

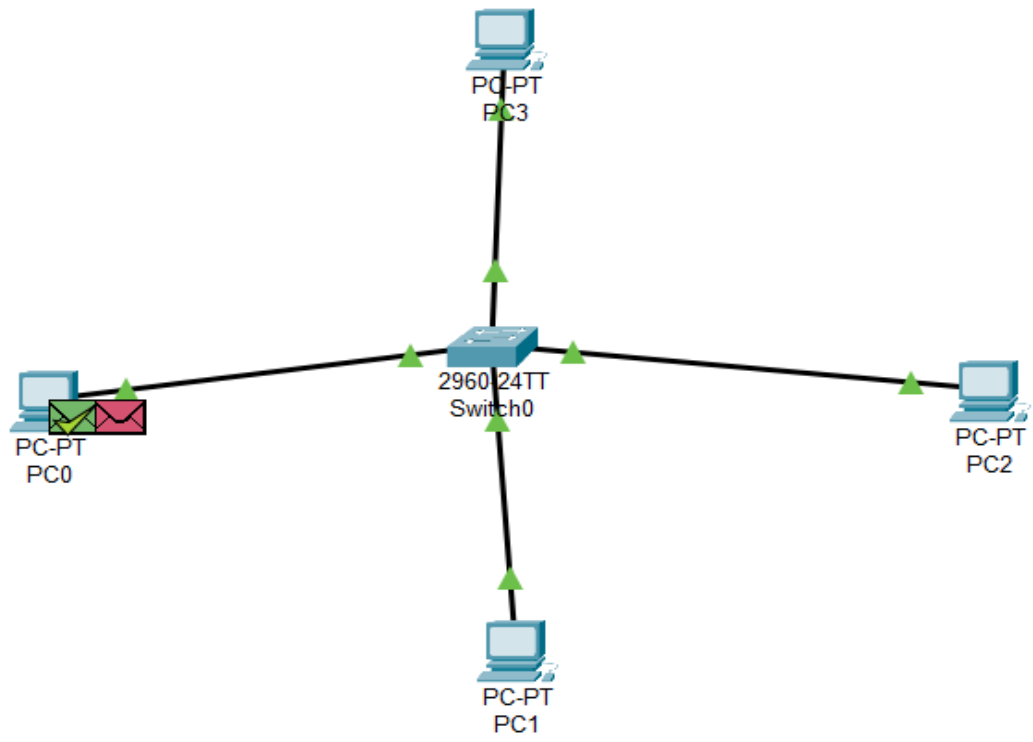
C:\>ping 10.10.10.2

Pinging 10.10.10.2 with 32 bytes of data:

Reply from 10.10.10.2: bytes=32 time<lms TTL=128
Reply from 10.10.10.2: bytes=32 time<lms TTL=128
Reply from 10.10.10.2: bytes=32 time<lms TTL=128
Reply from 10.10.10.2: bytes=32 time<lms TTL=128

Ping statistics for 10.10.10.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

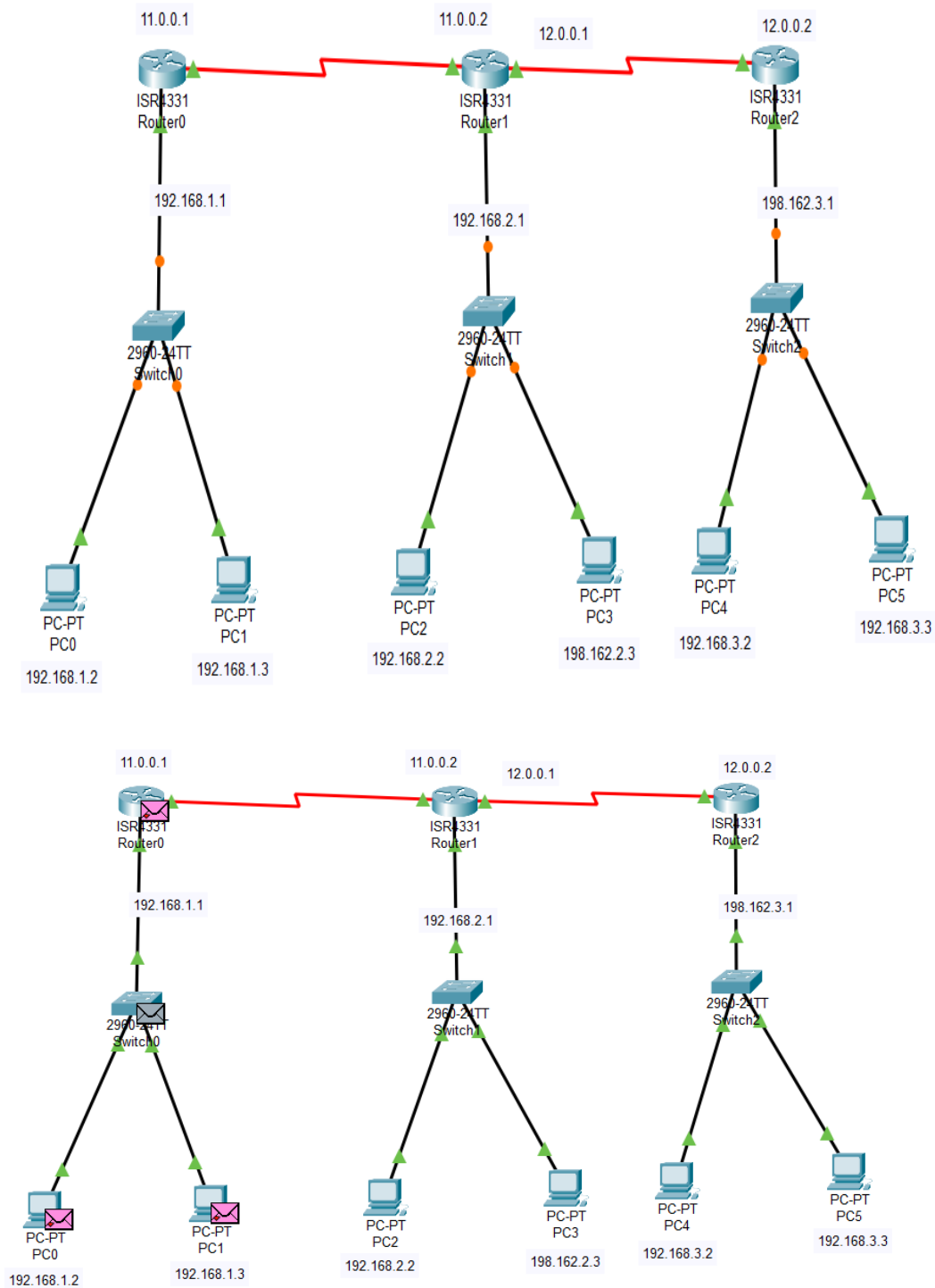
C:\>
```

ASSIGNMENT – 05

Question: Demonstrate static routing with the use of the router to establish communication between two different LANs.

Solution:



```
Cisco Packet Tracer PC Command Line 1.0
C:\>ipconfig

FastEthernet0 Connection:(default port)

    Connection-specific DNS Suffix...:
    Link-local IPv6 Address.....: FE80::210:11FF:FEAC:C73D
    IPv6 Address.....: ::
    IPv4 Address.....: 10.10.10.0
    Subnet Mask.....: 255.0.0.0
    Default Gateway.....: ::
                                0.0.0.0

Bluetooth Connection:

    Connection-specific DNS Suffix...:
    Link-local IPv6 Address.....: ::
    IPv6 Address.....: ::
    IPv4 Address.....: 0.0.0.0
    Subnet Mask.....: 0.0.0.0
    Default Gateway.....: ::
                                0.0.0.0

C:\>ping 10.10.10.2

Pinging 10.10.10.2 with 32 bytes of data:

Reply from 10.10.10.2: bytes=32 time<1ms TTL=128
Reply from 10.10.10.2: bytes=32 time<1ms TTL=128
Reply from 10.10.10.2: bytes=32 time<1ms TTL=128
Reply from 10.10.10.2: bytes=32 time<1ms TTL=128

Ping statistics for 10.10.10.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>|
```