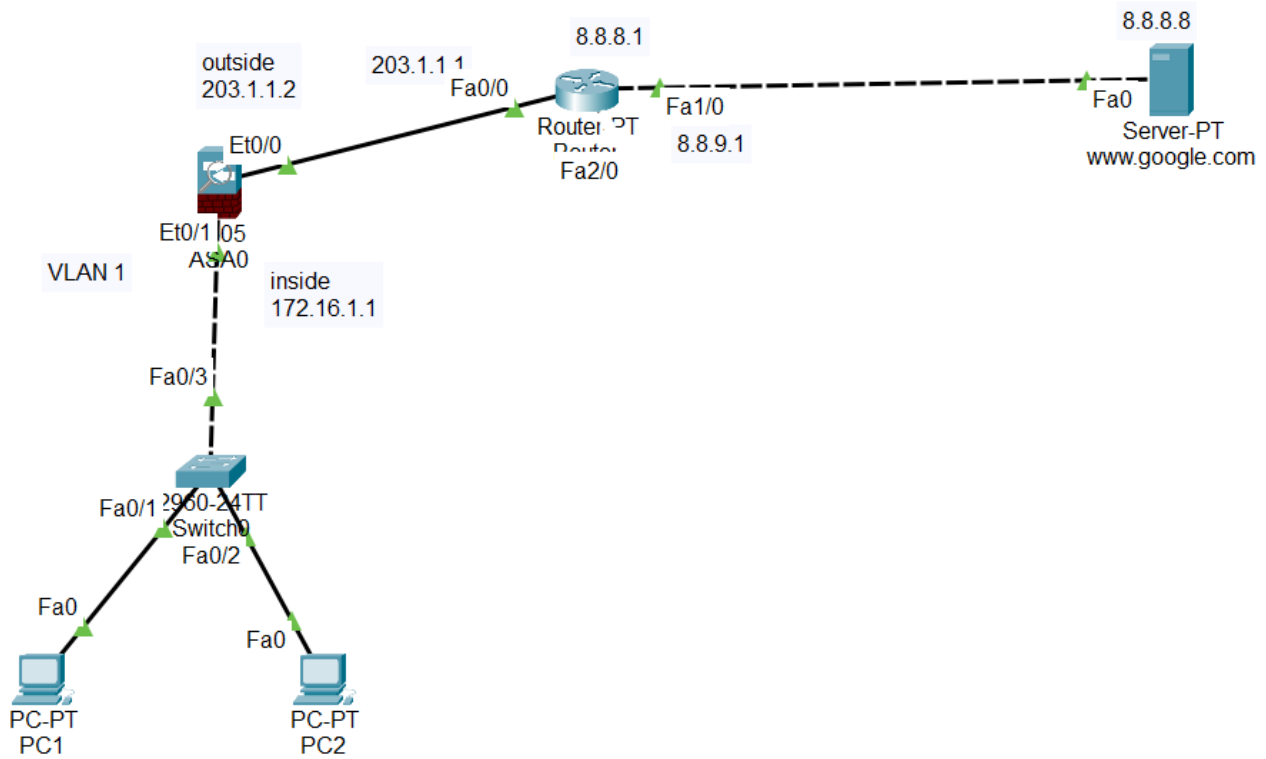Name: Manalili, James I.

Section: 3 – BSCS – 1

1. Construct the network as shown in the figure above with 2 PC in Static Configuration.

2. After the ASA Firewall has been constructed, as well as the router and the Server (Static) are already been configured, Set your ASA Firewall interconnecting two PC's in VLAN1.

Physical | Config | Desktop | Programming | Attributes

Terminal

```
ciscoasa#conf t
ciscoasa(config)#int vlan 1
ciscoasa(config-if)#ip address 172.16.1.1 255.255.255.0
ciscoasa(config-if)#nameif inside
ciscoasa(config-if)#security-level 100
ciscoasa(config-if)#
ciscoasa(config-if)#exit
ciscoasa(config)#
ciscoasa(config)#int e0/1
ciscoasa(config-if)#
ciscoasa(config-if)#switchport access vlan 1
ciscoasa(config-if)#
ciscoasa(config-if)#exit
ciscoasa(config)#
ciscoasa(config)#int vlan 2
ciscoasa(config-if)#ip address 203.1.1.2 255.255.255.0
ciscoasa(config-if)#no shut
ciscoasa(config-if)#
ciscoasa(config-if)#nameif outside
ciscoasa(config-if)#security-level 0
ciscoasa(config-if)#exit
ciscoasa(config)#
ciscoasa(config)#int e0/0
ciscoasa(config-if)#switchport access vlan 2
ciscoasa(config-if)#
ciscoasa(config-if)#
ciscoasa(config-if)#exit
ciscoasa(config)#
ciscoasa(config)#route outside 0.0.0.0 0.0.0.0 203.1.1.1
ciscoasa(config)#
ciscoasa(config)#
ciscoasa(config)#object network LAN
ciscoasa(config-network-object)#subnet 172.16.1.0 255.255.255.0
ciscoasa(config-network-object)#nat (inside, outside) dynamic interface
ciscoasa(config-network-object)#exit
ciscoasa#conf t
ciscoasa(config)#
ciscoasa(config)#access-list?

configure mode commands/options:
access-list
ciscoasa(config)#access-list in_to_interface extended permit top any any
                                                               ^
% Invalid input detected at '^' marker.

ciscoasa(config)#access-list in_to_interface extended permit tcp any any
ciscoasa(config)#access-list in_to_interface extended permit imcp any any
                                                               ^
% Invalid input detected at '^' marker.

ciscoasa(config)#access-list in_to_interface extended permit icmp any any
ciscoasa(config)#
ciscoasa(config)#access-group in_to_interface
% Incomplete command.
ciscoasa(config)#access-group in_to_interface in interface outside
ciscoasa(config)#
```
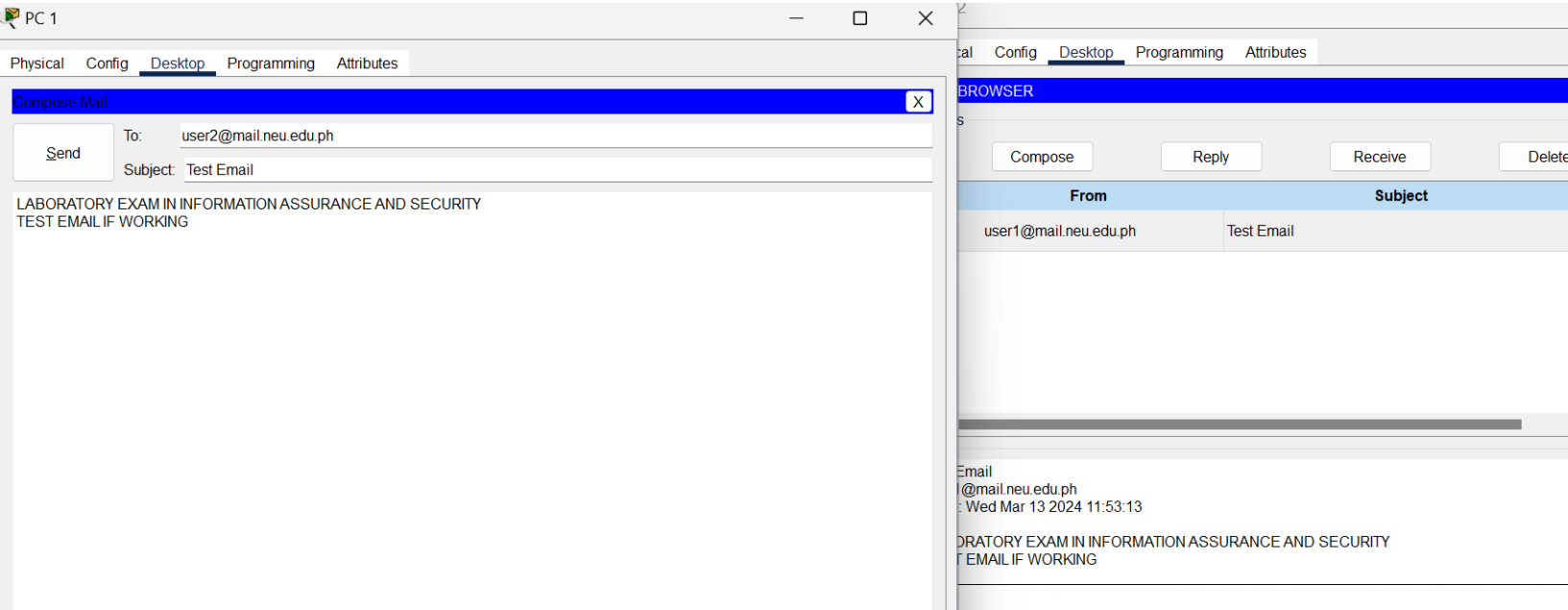
3. PC0 and PC1 should be in VLAN1. Provide screenshot of the connectivity of each PC in VLAN 1 showing a connectivity by PING Command status at each PC.


```
PC1                                                              —   □   X

 Physical    Config    Desktop    Programming    Attributes

Command Prompt                                                          X

 Cisco Packet Tracer PC Command Line 1.0
 C:\>ping 172.16.1.6

 Pinging 172.16.1.6 with 32 bytes of data:

 Reply from 172.16.1.6: bytes=32 time<1ms TTL=128
 Reply from 172.16.1.6: bytes=32 time<1ms TTL=128
 Reply from 172.16.1.6: bytes=32 time<1ms TTL=128
 Reply from 172.16.1.6: bytes=32 time<1ms TTL=128

 Ping statistics for 172.16.1.6:
     Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
 Approximate round trip times in milli-seconds:
     Minimum = 0ms, Maximum = 0ms, Average = 0ms

 C:\>
```
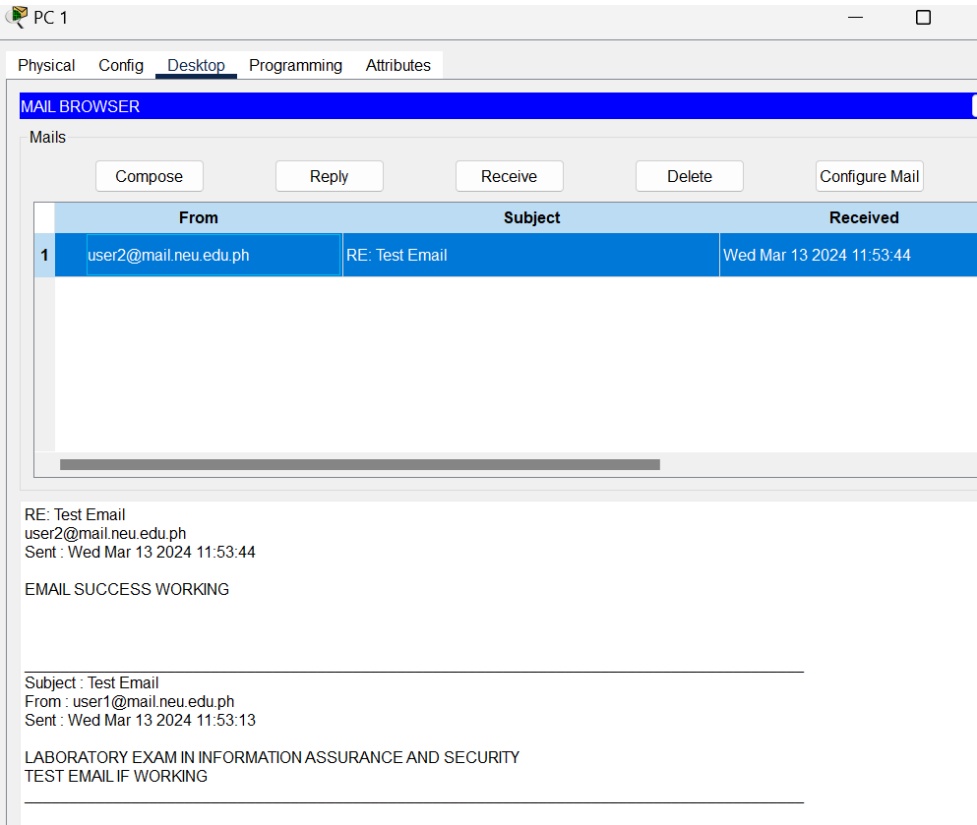
```
PC2                                                              —   □   X

 Physical    Config    Desktop    Programming    Attributes

Command Prompt                                                          X

 Cisco Packet Tracer PC Command Line 1.0
 C:\>ping 172.16.1.5

 Pinging 172.16.1.5 with 32 bytes of data:

 Reply from 172.16.1.5: bytes=32 time<1ms TTL=128
 Reply from 172.16.1.5: bytes=32 time=1ms TTL=128
 Reply from 172.16.1.5: bytes=32 time<1ms TTL=128
 Reply from 172.16.1.5: bytes=32 time=1ms TTL=128

 Ping statistics for 172.16.1.5:
     Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
 Approximate round trip times in milli-seconds:
     Minimum = 0ms, Maximum = 1ms, Average = 0ms

 C:\>
```

4. Then Connect additional 5 PC, (5 PC - Static), you may use a switch to interconnect the 5 PC, a DNS Server, Web Server: www.neu.edu.ph and the Email Server: Mail.neu.edu.ph. This will serve as your VLAN 2.

5. Inside the VLAN 2, Create a simple website of the CICS courses: about CS, IT and IS. Then, you should also add an e-mail feature providing conversation from the 5 PC in the VLAN 2. Screen shot the Website, the network lay out and the E-mail Conversation proving that your configurations are working.

PC5

Physical | Config | Desktop | Programming | Attributes

Web Browser

< | > | URL http://www.neu.edu.ph | Go | Stop

CICS Courses - New Era University

Computer Science (CS)
Computer Science deals with the theoretical foundations of information and computation, and practical techniques for their implementation and application.

Information Technology (IT)
Information Technology focuses on the practical aspects of computing systems, including hardware, software, networks, and applications.

Information Systems (IS)
Information Systems integrates information technology with organizational processes to support business operations, management decision-making, and strategic planning.

PC 1

Physical | Config | Desktop | Programming | Attributes

Compose Mail

Send | To: user2@mail.neu.edu.ph
Subject: Test Email

LABORATORY EXAM IN INFORMATION ASSURANCE AND SECURITY
TEST EMAIL IF WORKING

Config | Desktop | Programming | Attributes

BROWSER

Compose | Reply | Receive | Delete

From	Subject
user1@mail.neu.edu.ph	Test Email

Email
@mail.neu.edu.ph
Wed Mar 13 2024 11:53:13

ORATORY EXAM IN INFORMATION ASSURANCE AND SECURITY
EMAIL IF WORKING

REPLY

PC 1

Physical | Config | Desktop | Programming | Attributes

MAIL BROWSER

Mails

Compose | Reply | Receive | Delete | Configure Mail

	From	Subject	Received
1	user2@mail.neu.edu.ph	RE: Test Email	Wed Mar 13 2024 11:53:44

RE: Test Email
user2@mail.neu.edu.ph
Sent : Wed Mar 13 2024 11:53:44

EMAIL SUCCESS WORKING

Subject : Test Email
From : user1@mail.neu.edu.ph
Sent : Wed Mar 13 2024 11:53:13

LABORATORY EXAM IN INFORMATION ASSURANCE AND SECURITY
TEST EMAIL IF WORKING

6. Is it possible for VLAN 1 to access the Server from the VLAN 2?

YES I just add 2 more user for VLAN 1 to access the EMAIL and for Web server I just put the DNS server in IP configuration of PC in VLAN 1

Email Server: Mail.neu.edu.ph.

Physical | Config | Services | Desktop | Programming | Attributes

SERVICES
- HTTP
- DHCP
- DHCPv6
- TFTP
- DNS
- SYSLOG
- AAA
- NTP
- **EMAIL**
- FTP
- IoT
- VM Management
- Radius EAP

EMAIL

SMTP Service: ON / OFF
POP3 Service: ON / OFF

Domain Name: mail.neu.edu.ph   [Set]

User Setup
User [ ] Password [ ]

- User1
- User2
- User3
- User4
- User5
- User1Vlan1
- User2Vlan1

PC1

Physical | Config | Desktop | Programming | Attributes

IP Configuration
Interface: FastEthernet0

IP Configuration
- DHCP
- Static ●

IPv4 Address: 172.16.1.5
Subnet Mask: 255.255.255.0
Default Gateway: 172.16.1.1
DNS Server: 8.8.9.8

DNS server

Physical | Config | Services | Desktop | Programming | Attributes

IP Configuration
IP Configuration
- DHCP
- Static ●

IPv4 Address: 8.8.9.8
Subnet Mask: 255.255.255.0
Default Gateway: 8.8.9.1

PROOF THAT IT IS WORKING

PC1 FROM VLAN 1 ACCESS WEBSITE FROM VLAN 2

PC1

Physical | Config | Desktop | Programming | Attributes

Web Browser
< > URL http://8.8.9.7   [Go] [Stop]

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Information Systems integrates information technology with organizational processes to support business operations, management decision-making, and strategic planning.

PC1 FROM VLAN 1 CAN EMAIL OTHER PC FROM VLAN 2

PC1

Physical | Config | Desktop | Programming | Attributes

Send | To: user5@mail.neu.edu.ph
Subject: Test Email

Laboratory Exam Test Email

PC5

Physical | Config | Desktop | Programming | Attributes

MAIL BROWSER
Mails

Compose | Reply | Receive | Delete | Configure Mail

	From	Subject	Received
1	User1Vlan1@mail.neu.edu.ph	Test Email	Wed Mar 13 2024 11:12:44

Test Email
User1Vlan1@mail.neu.edu.ph
Sent : Wed Mar 13 2024 11:12:44

Laboratory Exam Test Email

Receiving mail from POP3 Server 8.8.9.9
Receive Mail Success.

7. Is it possible to accept and block the websites from VLAN2 that can't be accessed by its Internal Network (VLAN2? If yes, provide us the solution and configure so that you can block or accept packets from it. Screenshot your answers and proofs.

YES Just configure the firewall in the Web server. The picture below shows how to accept/access and block website
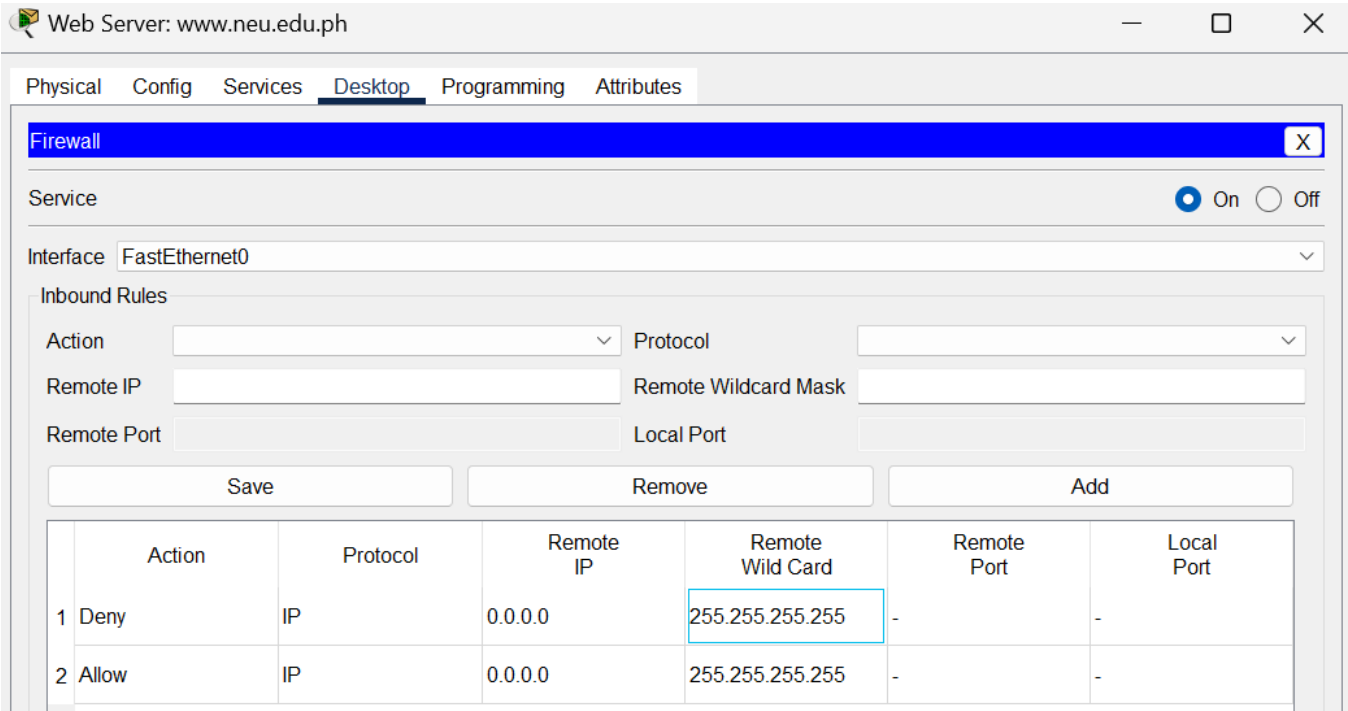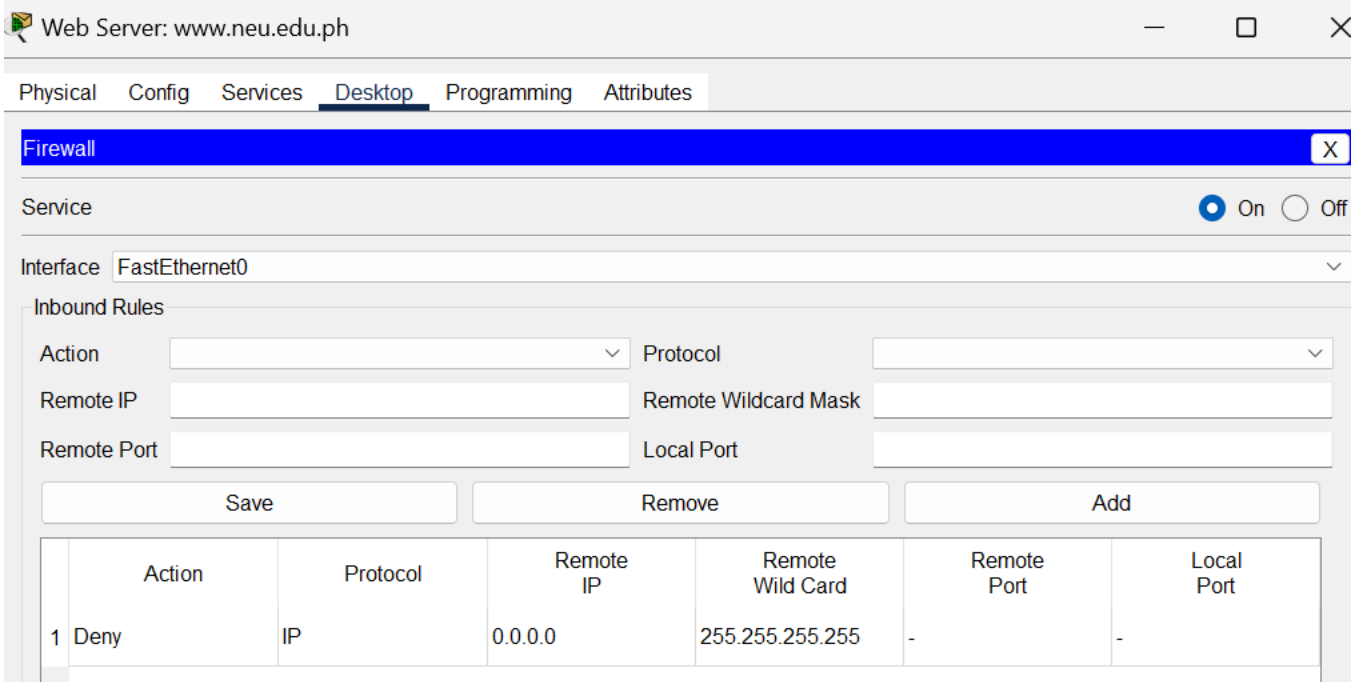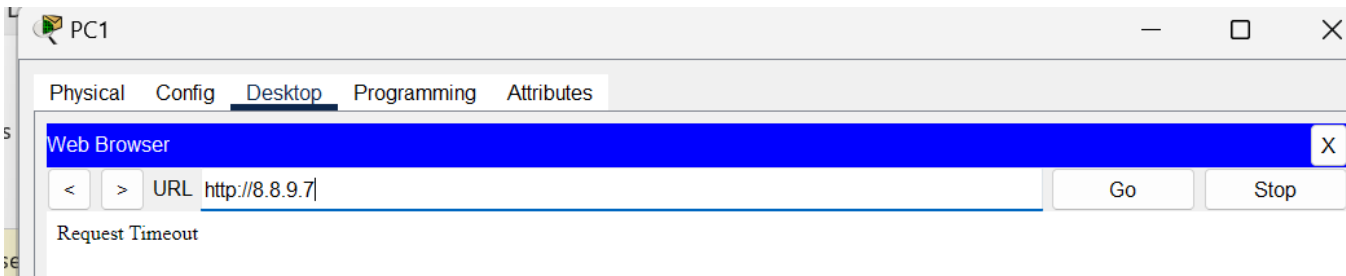

PC1 FROM VLAN 2 CAN'T ACCESS WEBSITE
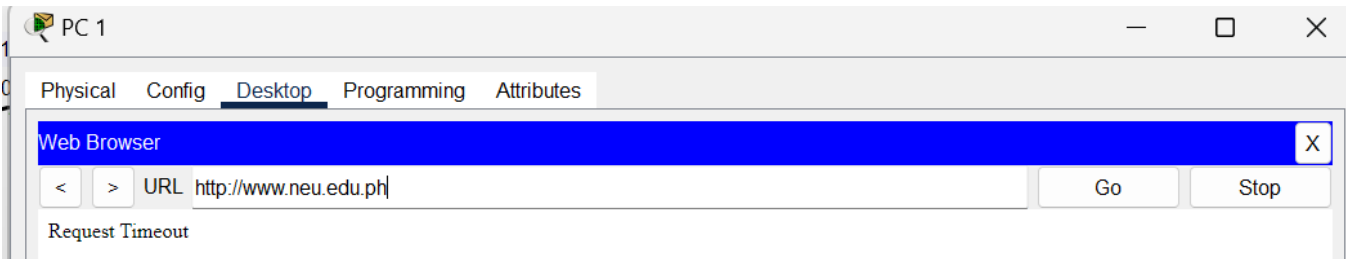
8. Let's say VLAN 1 can accessed the Websites from VLAN2, Can VLAN 2 block or deny packets from VLAN 1? If yes, provide the solution and screenshots your proof? If not possible, please provide proofs of your answer.

YES Just configure the firewall in the Web server.

PC1 FROM VLAN 1 CAN'T ACCESS WEBSITE FROM VLAN 2

9. Add a conclusion and write what you have learned so far in our Midterm Sessions.

I learned about the basics of networking, including connecting devices through Ethernet cables or wireless connections, configuring IP addresses, subnet masks, and default gateways for devices to communicate within the LAN. Configuring a basic firewall on the server taught me about network security and how to control incoming and outgoing traffic. I learned about different types of firewall rules, such as allowing or blocking specific ports or IP addresses.

Through these activities, I gained a comprehensive understanding of networking fundamentals, server management, web development, email configuration, and network security. I learned how to configure and manage various network services and devices, ensuring their reliability, performance, and security. These skills are essential for building and maintaining robust and secure network infrastructures in various IT environments.