Batch: D2	Roll No.: 16010123325
Experiment / assignment / tutorial No. 9	
Grade: AA / AB / BB / BC / CC / CD /DD	
Signature of the Staff In-charge with date	

Experiment No.:9

TITLE: Study and configure DHCP & DNS protocol using Cisco Packet tracer

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AIM: To study and configure **DHCP/DNS** protocol using Cisco Packet tracer

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Expected Outcome of Experiment:

CO3: Demonstrate various network layer protocols and network design using IP addressing, forwarding, routing concepts.

Books/ Journals/ Websites referred:

1. A. S. Tanenbaum, "Computer Networks", Pearson Education, Fourth Edition
2. B. A. Forouzan, "Data Communications and Networking", TMH, Fourth Edition

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Pre Lab/ Prior Concepts:

IPv4 Addressing, Subnetting, Link State Protocol, Router configuration Commands

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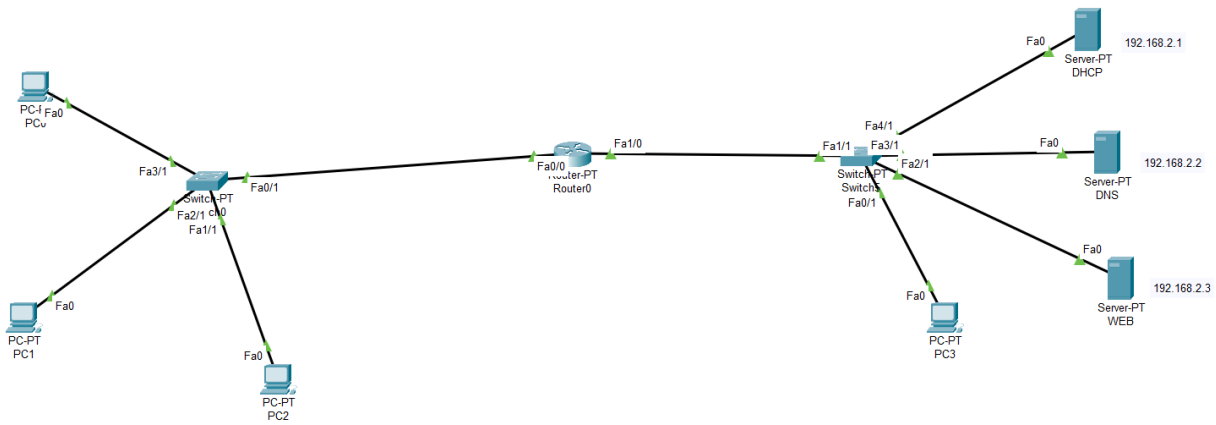
New Concepts to be learned: DHCP/DNS Protocol and its configuration.

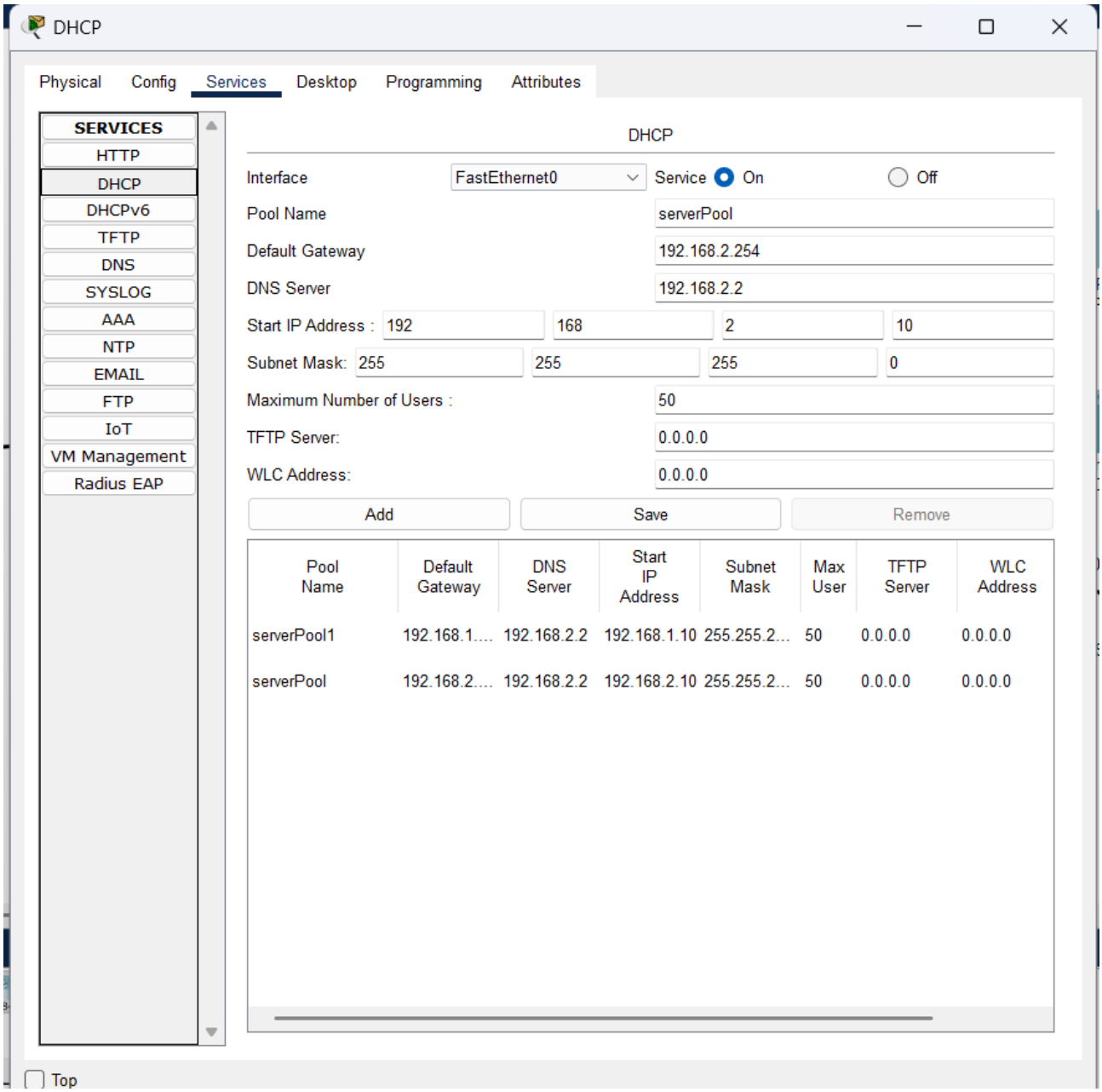
THEORY:

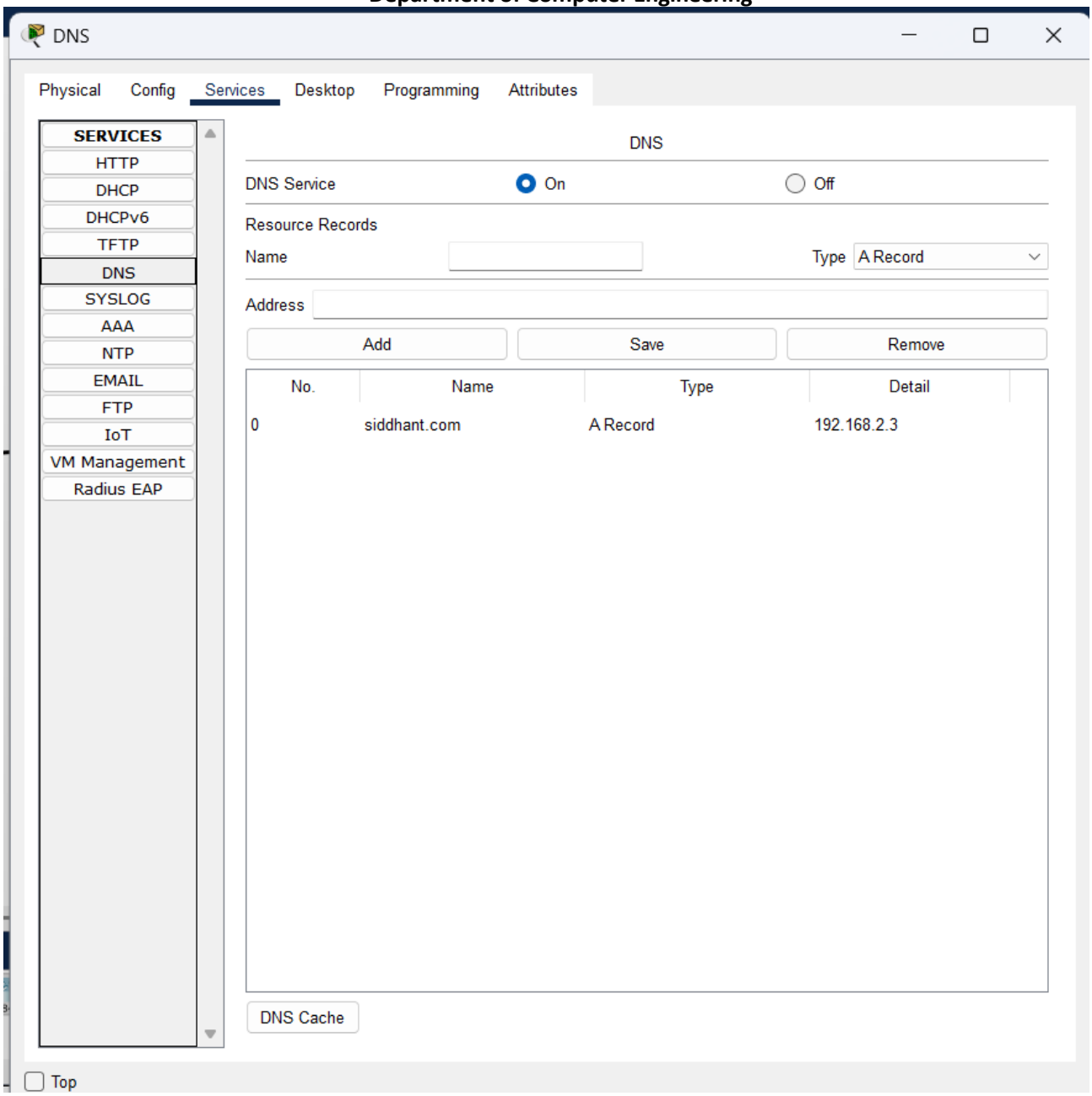
The Dynamic Host Configuration Protocol (DHCP) is a network management protocol used to automatically assign IP addresses and other network configuration parameters to devices on a network, allowing them to communicate effectively. Instead of manually configuring each device, a DHCP server dynamically provides IP addresses from a defined range (scope) along with the subnet mask, default gateway, and DNS information. This reduces administrative effort and prevents IP conflicts.

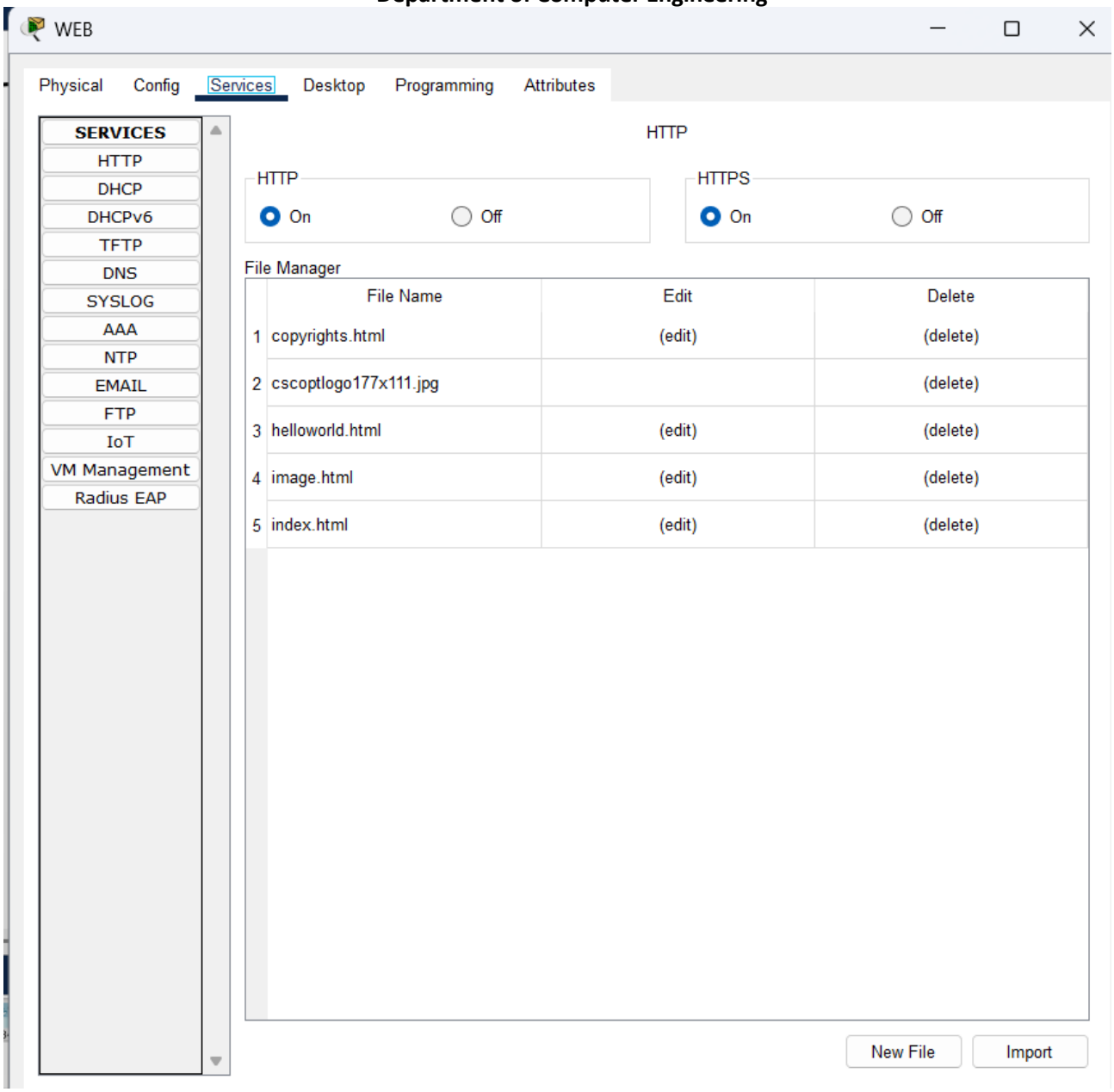
The Domain Name System (DNS) is a hierarchical naming system that translates human-readable domain names (like www.example.com) into IP addresses that computers use to identify each other on a network. DNS servers maintain a distributed database of mappings between domain names and their corresponding IP addresses. In Cisco Packet Tracer, DHCP and DNS can be configured on routers or dedicated servers to simulate real-world automatic IP allocation and name resolution, enhancing efficiency and scalability in network management.

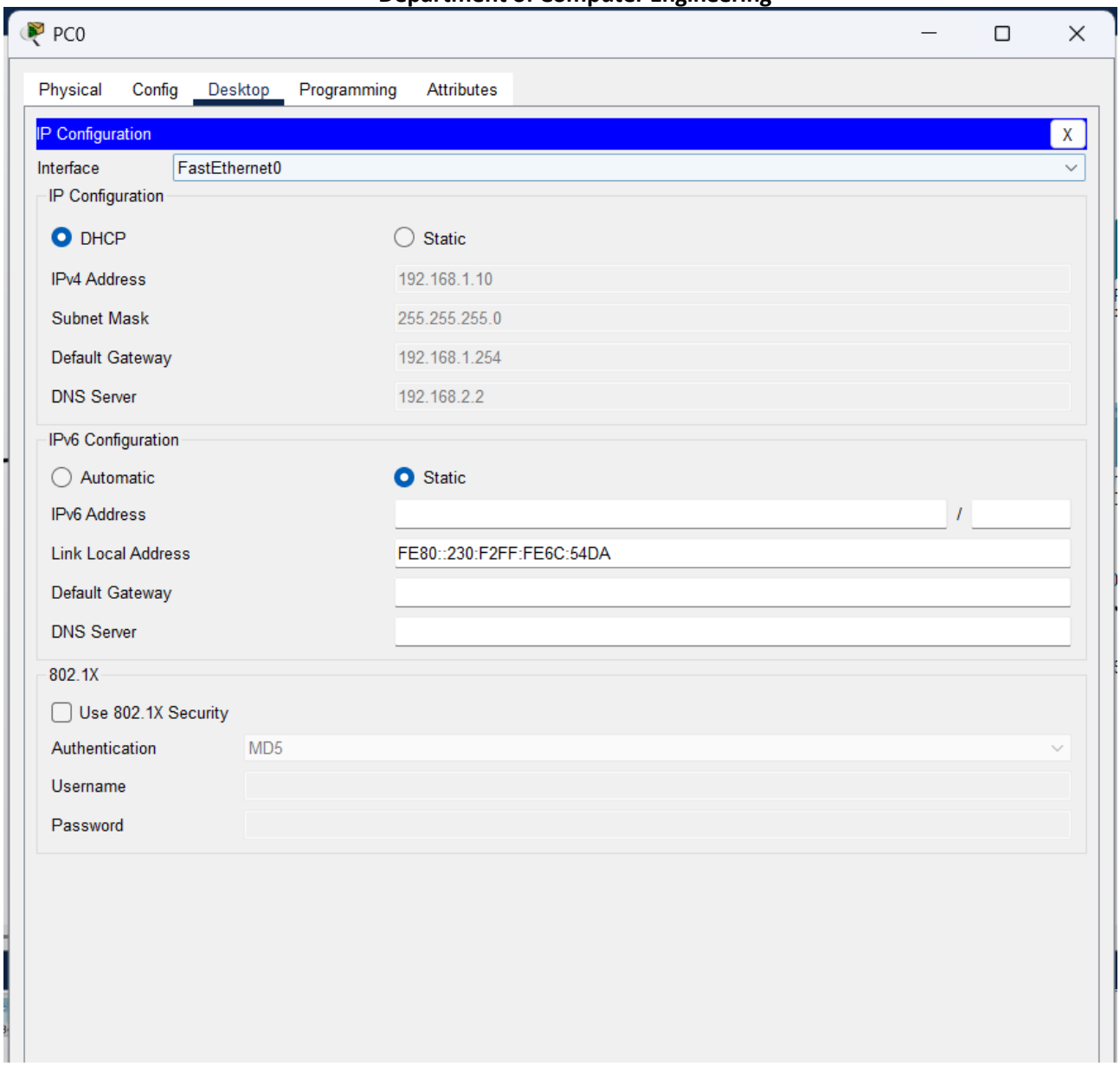
IMPLEMENTATION:

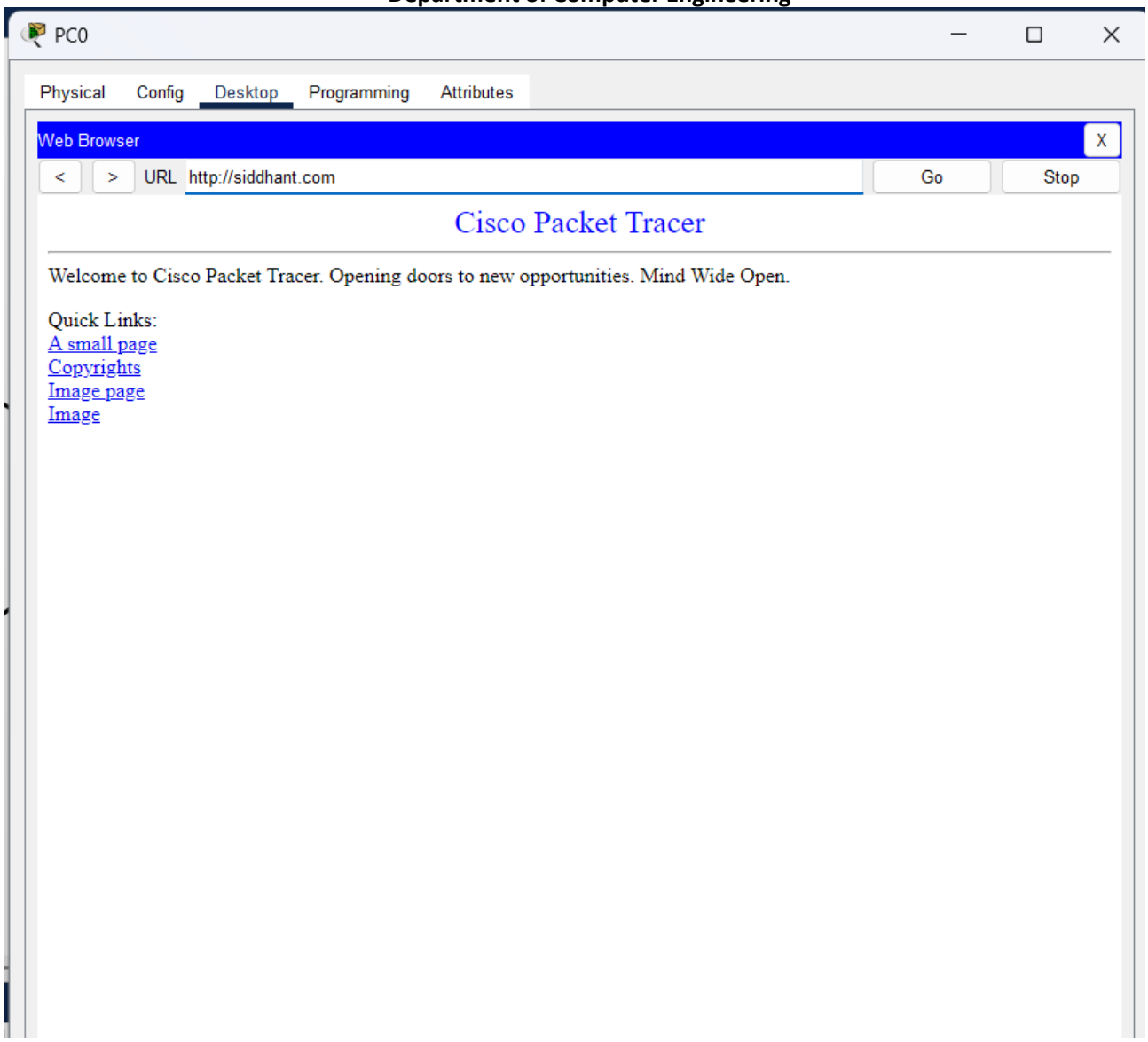



DHCP
Physical
Config
Services
Desktop
Programming
Attributes
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
IoT
VM Management
Radius EAP
DHCP
Interface
FastEthernet0
Service
On
Off
Pool Name
serverPool
Default Gateway
192.168.2.254
DNS Server
192.168.2.2
Start IP Address :
192
168
2
10
Subnet Mask:
255
255
255
0
Maximum Number of Users :
50
TFTP Server:
0.0.0.0
WLC Address:
0.0.0.0
Add
Save
Remove
Pool Name
Default Gateway
DNS Server
Start IP Address
Subnet Mask
Max User
TFTP Server
WLC Address
serverPool1
192.168.1....
192.168.2.2
192.168.1.10
255.255.2...
50
0.0.0.0
0.0.0.0
serverPool
192.168.2....
192.168.2.2
192.168.2.10
255.255.2...
50
0.0.0.0
0.0.0.0
Top


DNS
Physical
Config
Services
Desktop
Programming
Attributes
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
IoT
VM Management
Radius EAP
DNS
DNS Service
On
Off
Resource Records
Name
Type
A Record
Address
Add
Save
Remove
No.
Name
Type
Detail
0
siddhant.com
A Record
192.168.2.3
DNS Cache
Top


WEB
Physical
Config
Services
Desktop
Programming
Attributes
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
IoT
VM Management
Radius EAP
HTTP
HTTP
On
Off
HTTPS
On
Off
File Manager
File Name
Edit
Delete
1 copyrights.html (edit) (delete)
2 cscoptlogo177x111.jpg (delete)
3 helloworld.html (edit) (delete)
4 image.html (edit) (delete)
5 index.html (edit) (delete)
New File
Import


PC0
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.1.10
Subnet Mask
255.255.255.0
Default Gateway
192.168.1.254
DNS Server
192.168.2.2
IPv6 Configuration
Automatic
Static
IPv6 Address
/
Link Local Address
FE80::230:F2FF:FE6C:54DA
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password


PC0
Physical
Config
Desktop
Programming
Attributes
Web Browser
X
<
>
URL
http://siddhant.com
Go
Stop
Cisco Packet Tracer
Welcome to Cisco Packet Tracer. Opening doors to new opportunities. Mind Wide Open.
Quick Links:
A small page
Copyrights
Image page
Image

CONCLUSION:

In this experiment, DHCP and DNS protocols were successfully configured using Cisco Packet Tracer. The DHCP server dynamically assigned IP addresses to clients, while the DNS server translated domain names into IP addresses, enabling seamless communication. This implementation demonstrated the automation of network configuration and the importance of DNS in simplifying user access to network resources.

Date: _____ Signature of faculty in-charge