Action Plan
Goal: Install Virtual Network / Test Web Application

Milestone 1: Installing 5 systems on virtual network (3 servers, 2 clients)
Milestone 2: Configuring Router, Domain Controller, and Web Server on 3 servers individually
Milestone 3: Hosting website on the Web Server
Milestone 4: Accessing website through both clients and testing the website

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Week 1:

Installing 5 Installing 5 systems on virtual network (3 servers, 2 clients):

Install VirtualBox if it is not already installed on the system. After installing VirtualBox, make sure to have the ISO Files of the systems you want to create on VirtualBox.

1. Router

- Create first system with the name SVR-SO-A-1918083
- Give version: Windows 12 (64 bit)
- Select the given ISO File of Windows Server 2012
- Select 2 adapters – NAT and Host-only

2. Domain Controller

- Create second system with the name SVR-DC-A-1913083
- Give version: Windows 12 (64 bit)
- Select the given ISO File of Windows Server 2012
- Select the adapter – Host-only

3. Web Server

- Create third system with the name SVR-WS-A-1913083
- Give version: Windows 12 (64 bit)
- Select the given ISO File of Windows Server 2012
- Select the adapter – Host-only

4. Client 1 – Windows 10

- Create fourth system with the name Windows10-1913083
- Give version: Windows 10 (64 bit)
- Select the given ISO File of Windows 10
- Select the adapter – Host-only

5. Client 2 – Windows 8.1

- Create fifth system with the name Windows10-1913083
- Give version: Windows 8.1 (64 bit)
- Select the given ISO File of Windows 8.1
- Select the adapter – Host-only

Configuring all the servers:

1. Router – SVR-SO-A-1913083
- Open the Server Manager
- Click on the "Manage" option in the main menu
- Click on the "Add Roles and Features" and click on "Next"
- Select "Role-based or feature-based installation" and click on "Next"
- Select "Remote Access" in Service Roles and click on "Next"
- Select "DirectAccess and VPN (RAS)" and "Router" and click on "Next"
- Click on "Install" and restart the system
- Give the IP Address 192.168.56.101
- Open the Server Manager
- Click on the "Tools" option in the main menu
- Click on the "Routing and Remote Access"
- Select Network Address Translation (NAT)
- Select the system with the IP Address 192.168.56.101
- Click on "Finish"

2. Domain Controller – SVR-DC-A-1913083
- Give the IP Address 192.168.56.102
- Give DNS Server Address 192.168.56.102
- Give Default Gateway 192.168.56.101
- Open the Server Manager
- Click on the "Manage" option in the main menu
- Click on the "Add Roles and Features" and click on "Next"
- Select "Role-based or feature-based installation" and click on "Next"
- Select "Remote Desktop Services" and Click on "Add Features"
- Select "DNS Server" and "Active Directory Domain Services" and Click on "Add Features"
- Click on "Next"
- Click on "Network Policy Server" in Role Services
- Click on "Install"
- Open Active Directory Domain Services Configuration Wizard
- Select "Add a new forest"
- Enter Password you want to keep and click on Next
- Give the domain name
- Click on Next and Install
- Wait for system to restart

3. Web Server – SVR-WS-A-1913083
- Give the IP Address 192.168.56.103
- Give DNS Server Address 192.168.56.102
- Give Default Gateway 192.168.56.101

- Open the Server Manager
- Click on the "Manage" option in the main menu
- Click on the "Add Roles and Features" and click on "Next"
- Select "Role-based or feature-based installation" and click on "Next"
- Select "Web Server (IIS)" and add features and click on "Next"
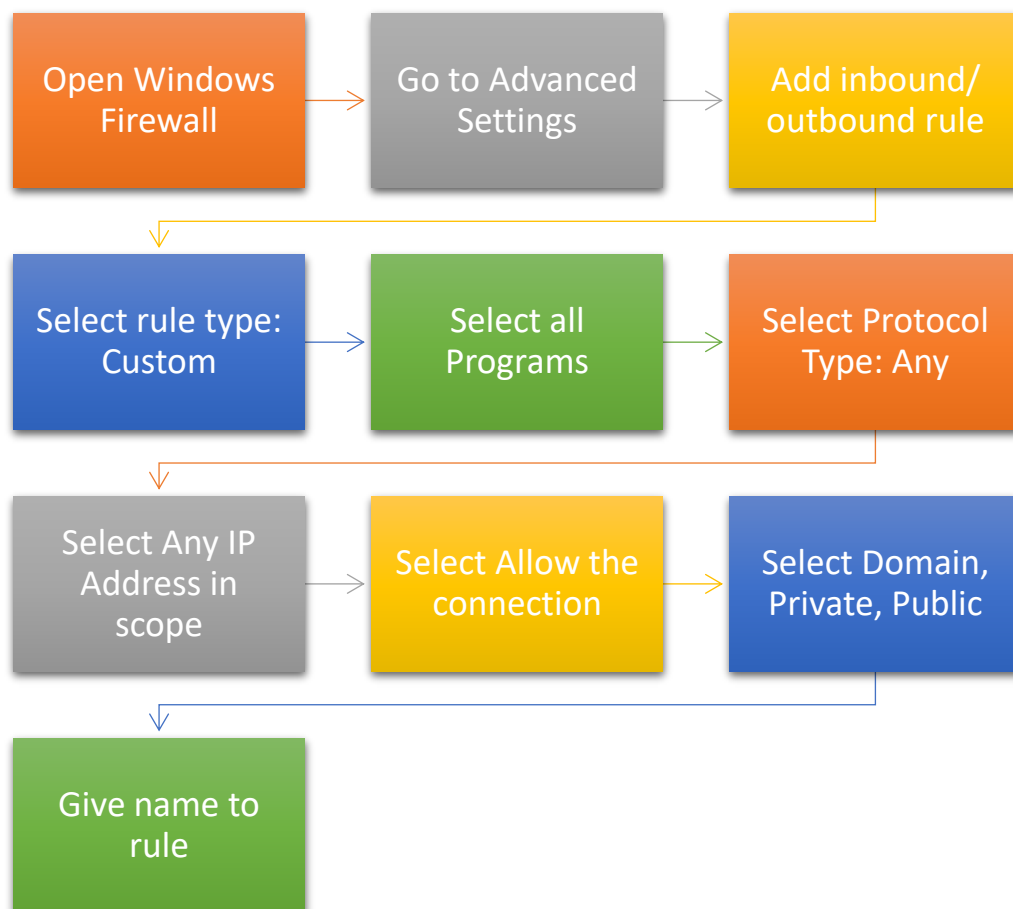- Click on "Install"

4. **Client 1 – Windows 10**
   - Give the IP Address 192.168.56.104
   - Give DNS Server Address 192.168.56.102
   - Give Default Gateway 192.168.56.101

5. **Client 2 – Windows 8.1**
   - Give the IP Address 192.168.56.105
   - Give DNS Server Address 192.168.56.102
   - Give Default Gateway 192.168.56.101

Inbound/Outbound Rules:

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Open Windows Firewall → Go to Advanced Settings → Add inbound/outbound rule
   ↓
Select rule type: Custom → Select all Programs → Select Protocol Type: Any
   ↓
Select Any IP Address in scope → Select Allow the connection → Select Domain, Private, Public
   ↓
Give name to rule
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Week 2:

Host Website:

| Download PHP, MySQL, MySQL Workbench on Web Server | Change the domain names of all systems | Create a database in MySQL Workbench |
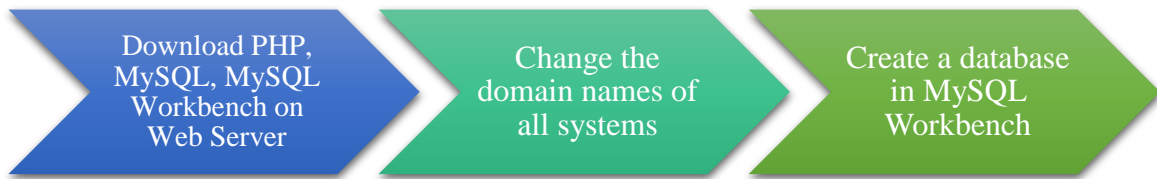
To change the domain names of all systems follow the below steps:

Control Panel → System and Security → System → Change Settings → Change → Member of: Domain → Give the Domain name

Steps to add a website to IIS Manager:

- Open IIS Manager in Web Server
- Select the recently added server
- Expand the server tab
- Expand the Sites tab
- Right click on Sites
- Click on Add Website
- Give the site name and click on OK
- Stop the services of Default Web Site
- Start the services of the recently added site
- Click on "Browse *:80(http)"
- Click on Bindings
- Click on Add
- Select the IP Address of Web Server
- Select the Default Document
- Click on Add
- Add index.php page

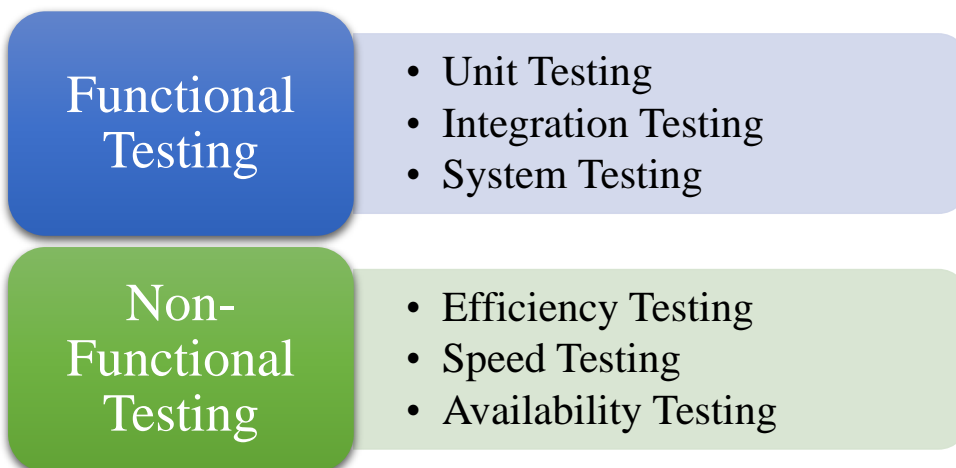**Check Inter-connection and Internet Connection:**

1. Check Internet Connection

   - Open the command line
   - Enter the command "ping 8.8.8.8"
   - Check if we get the reply from 8.8.8.8

2. Check the connectivity with other systems

   - Open the command line
   - Enter the command "ping 192.168.56.101" (Select the IP Address accordingly)
   - Check if we get the reply from that IP Address

Access the website from both clients:

   - Open the browser in the client's system
   - Enter URL in the browser "192.168.56.103"
   - Check if the website opens or not

Test the website:

Types of Testing:

Functional Testing	• Unit Testing • Integration Testing • System Testing
Non-Functional Testing	• Efficiency Testing • Speed Testing • Availability Testing

Testing Procedure:

   - Design Test Suits
   - Design Test Cases
   - Create a RTM
   - Execute Test Cases
   - Report errors/bugs (If any)