

## Practical No 10

**Aim:** Firewall Configuration and Rule-based Filtering: Configure and test firewall rules to control network traffic, filter packets based on specified criteria, and protect network resources from unauthorized access.

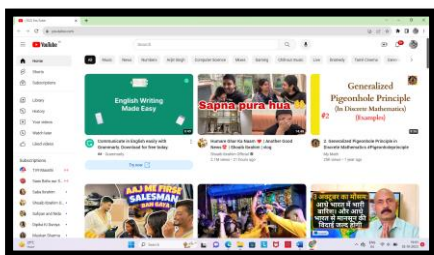
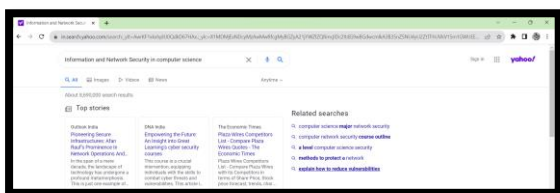
We would use firewall to block

- 1) A Port
- 2) A Program
- 3) A Website

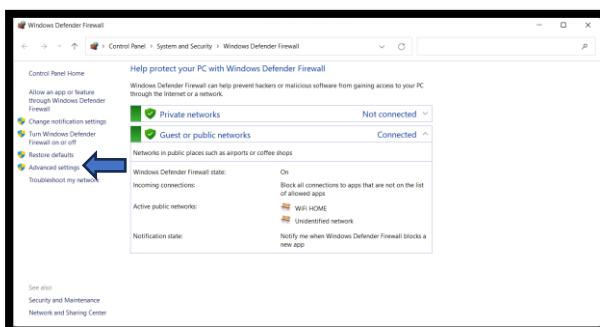
**Part 1: Blocking the HTTP and HTTPS (Port 80 and Port 443) using the Firewall** Before starting with the blocking port process, we note that the applications running at the server end are identified with the well-known Port numbers, some of the commonly used are as follows

Port Number	Protocol	Application
20	TCP	FTP data
21	TCP	FTP control
22	TCP	SSH
25	TCP	SMTP
53	UDP, TCP	DNS
80	TCP	HTTP (W/W)
110	TCP	POP3
443	TCP	SSL

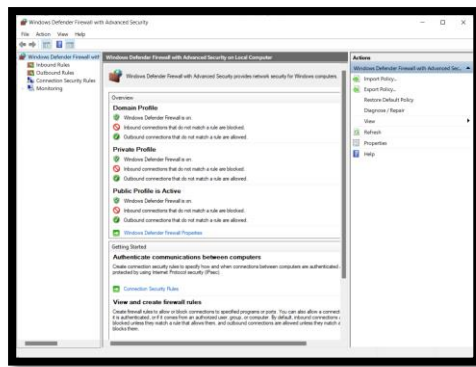
**Step 1:** We access any website through the browser and confirm that the HTTP/HTTPS protocols are working. Go to Browser > Search Anything > Open > Working



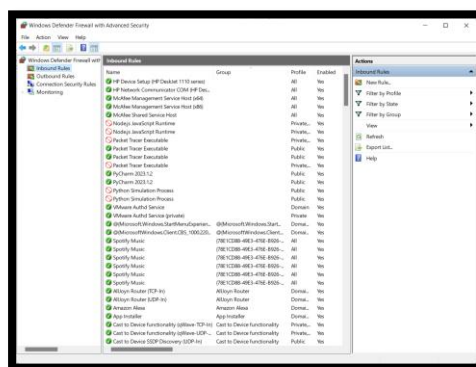
**Step 2:** We open 'Windows Defender Firewall'



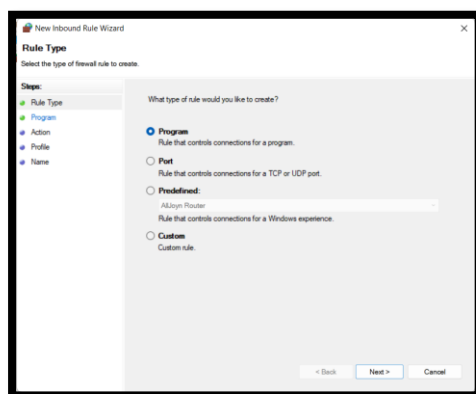
Next, we click on 'Advanced settings'



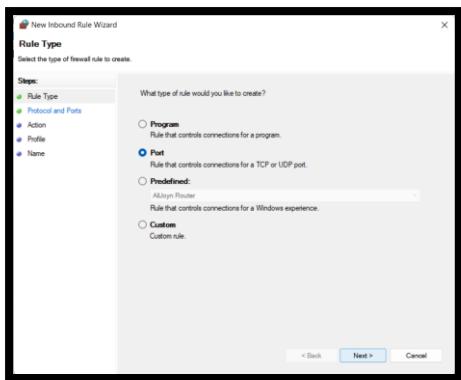
Next, we click on 'Inbound Rules' now right click on inbound rule and create new rule



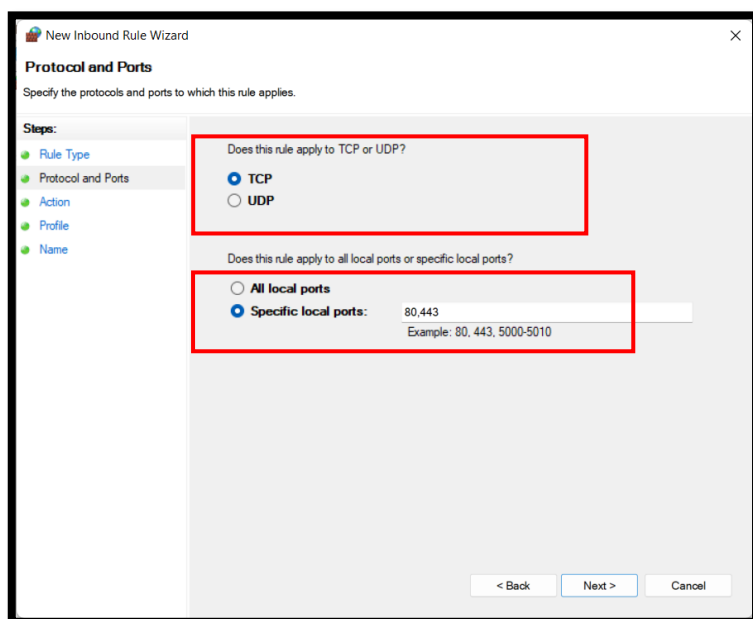
Then click on 'New Rule'



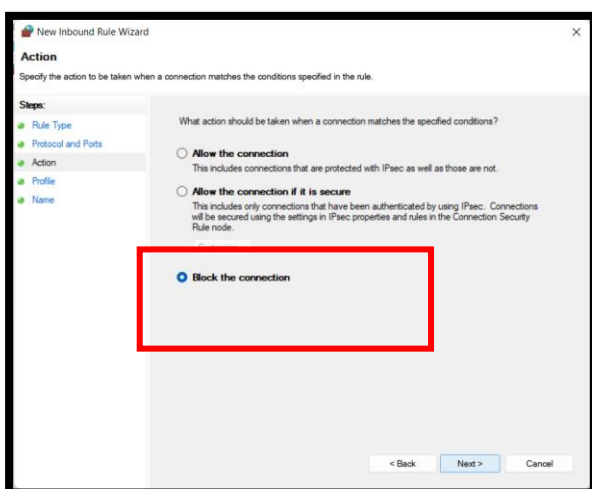
Select the radio button 'Port' and click 'Next' and enter the following



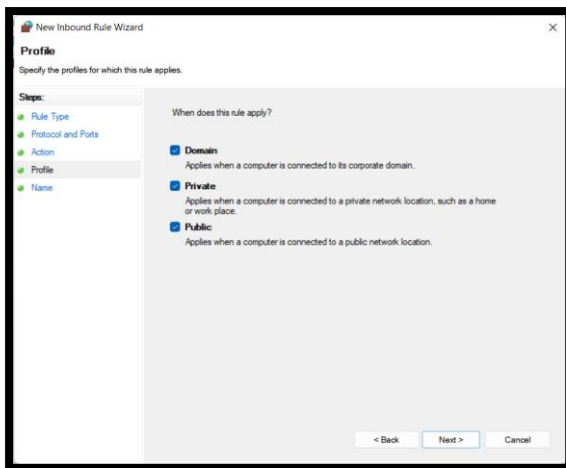
Select the radio button 'Port' and click 'Next' and enter the following



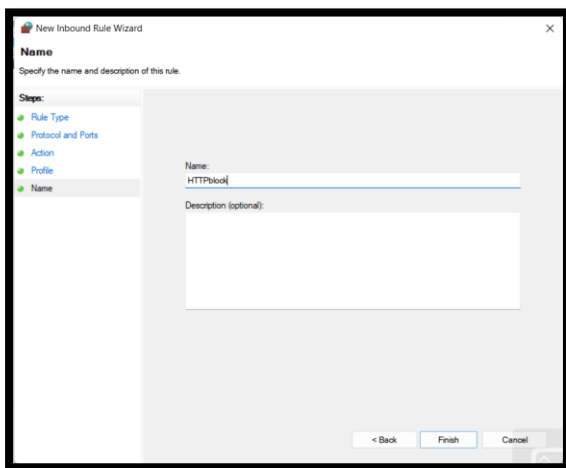
After next, we need to finalise the rule



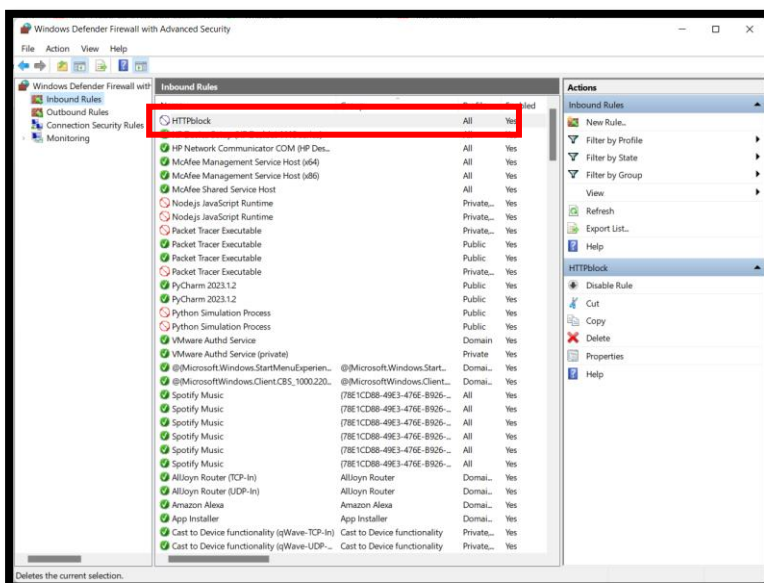
Click 'Next' and we get the following



After clicking the 'Next' button we need to name the rule and click finish



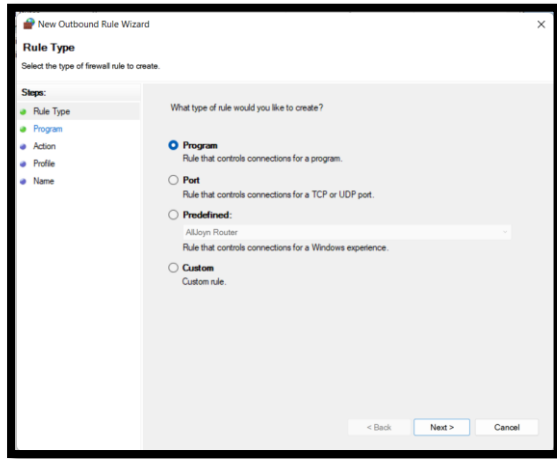
The Inbound rule is added



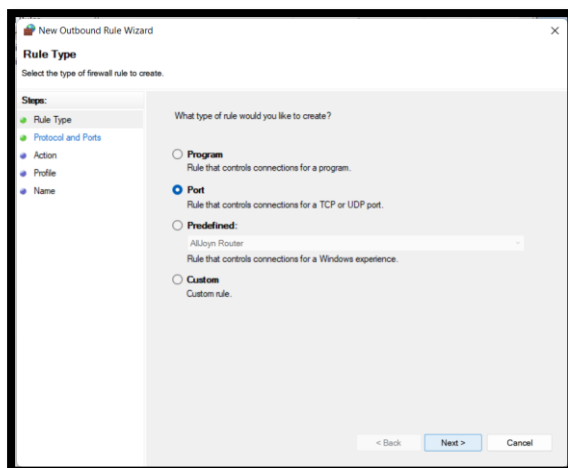
We repeat all the above steps for creating 'Outbound Rules', and then try to access the internet. We see that the accessed is blocked

### For Outbound Rule:

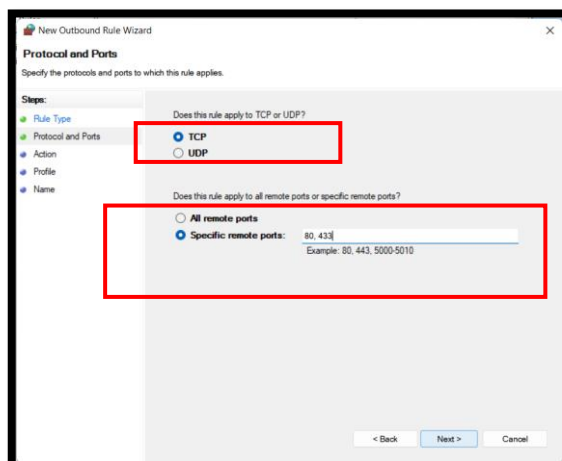
Then click on 'New Rule'



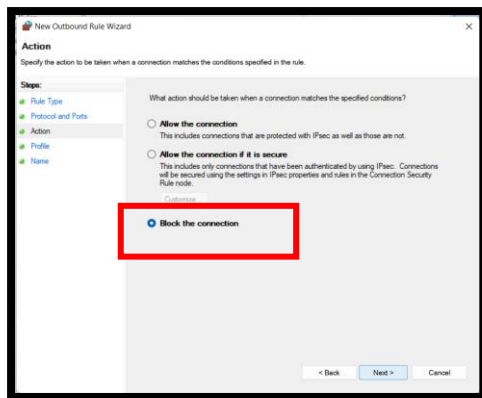
Select the radio button 'Port' and click 'Next' and enter the following



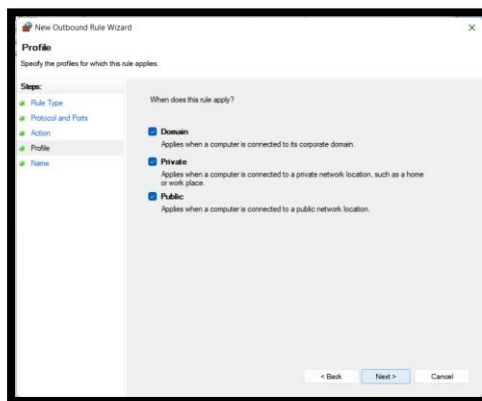
Select the radio button 'Port' and click 'Next' and enter the following



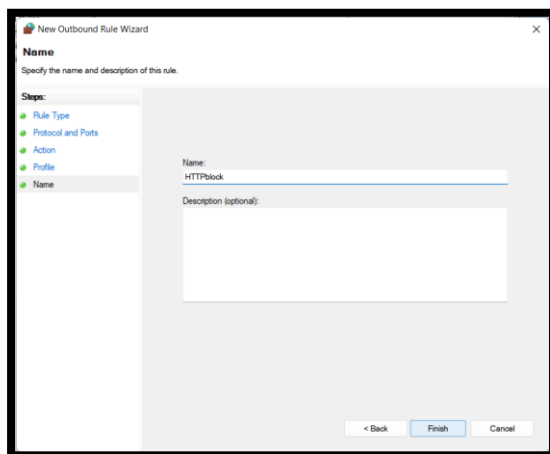
After next, we need to finalise the rule



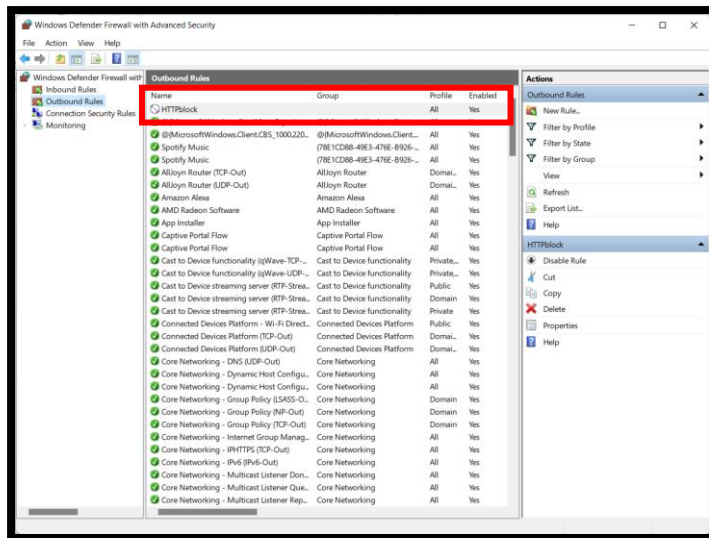
Click 'Next' and we get the following



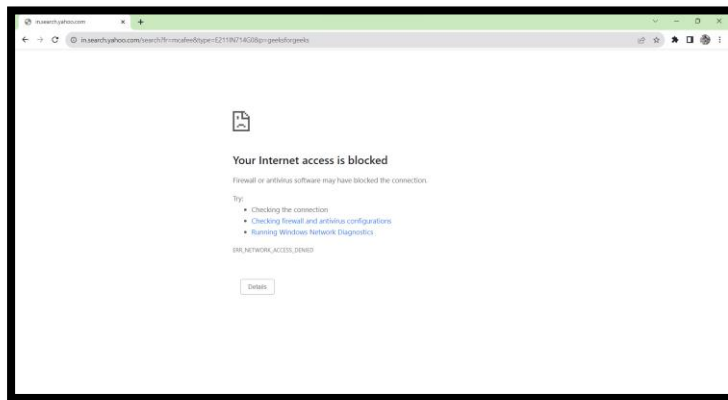
After clicking the 'Next' button we need to name the rule and click finish



The Outbound rule is added

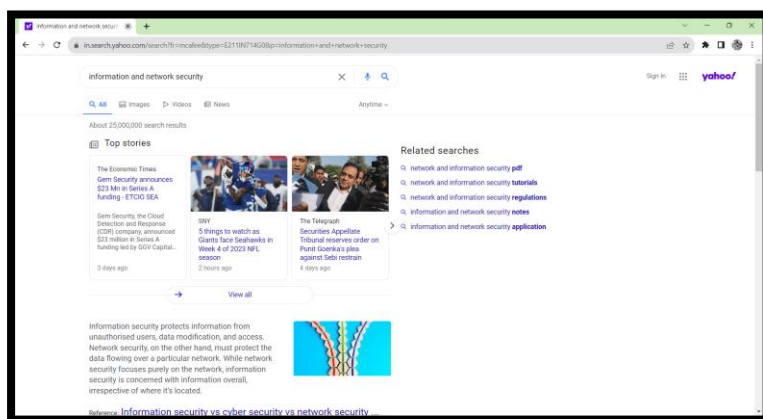


Trying to access the internet. We see that the accessed is blocked



Now to unblock the internet access.

Go to the Windows Defender Firewall > Go to Inbound > Simply right click and delete it > Go to Outbound > Simply right click and delete it.



## Part 2: Blocking the Program

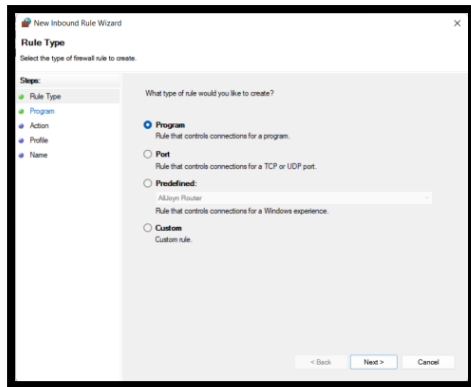
Step 1: Open Windows Defender Firewall.

Step 2: Go to Advance Settings

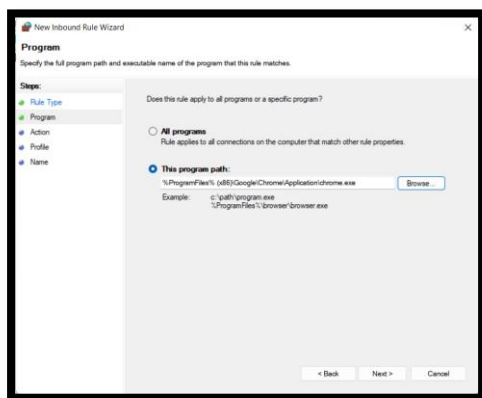
Step 3: Click on Inbound Rule

Step 4: Create new rule

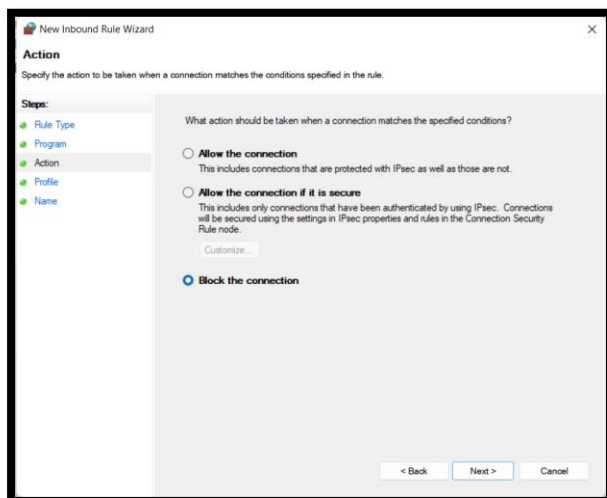
Step 5: Select Program and click on Next button



Step 6: We are blocking the chrome program so browse the path and click on next

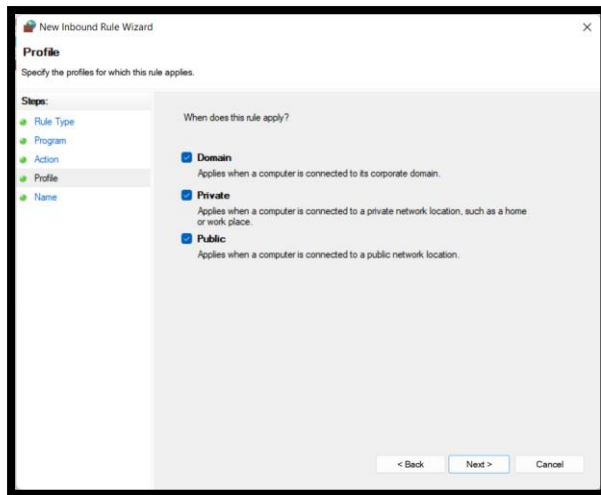


Step 7: Now click on block the connection

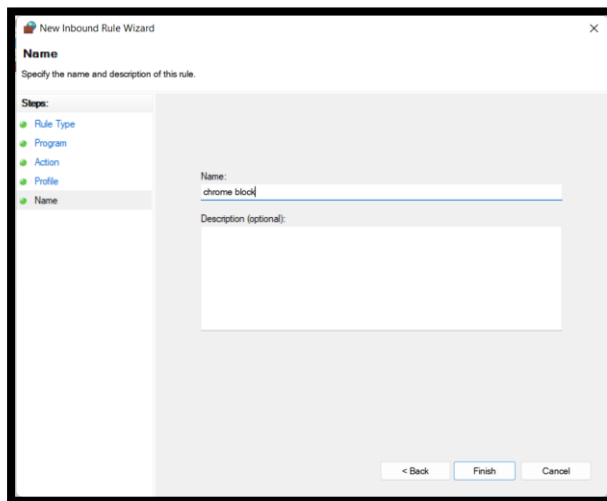


Step 8: Tick all the checkboxes





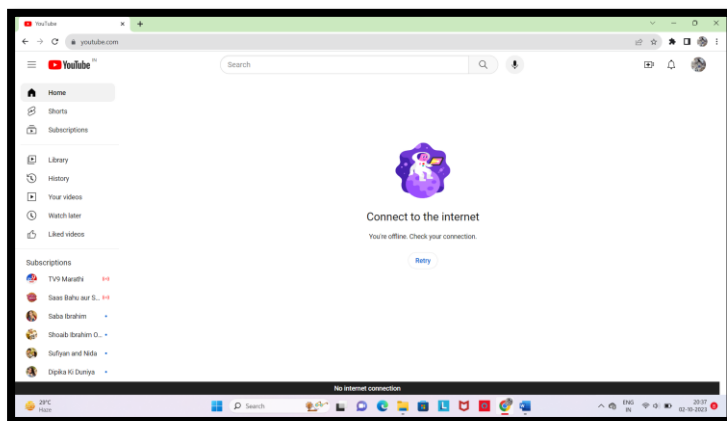
Step 9: After clicking on Next button give the name to that rule



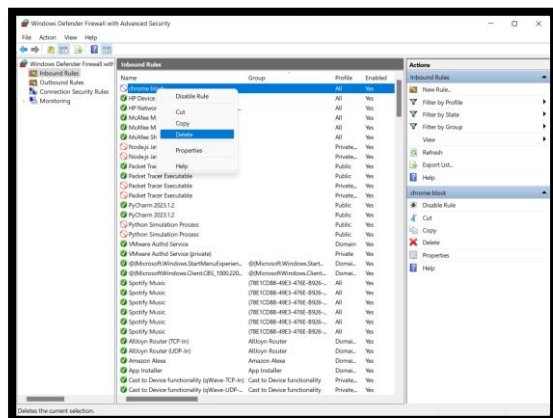
Step 10: Click on Finish button and Inbound Rule is created

Step 11: Follow the same steps for Outbound Rule

Step 12: Now open chrome and check it will show connect to internet

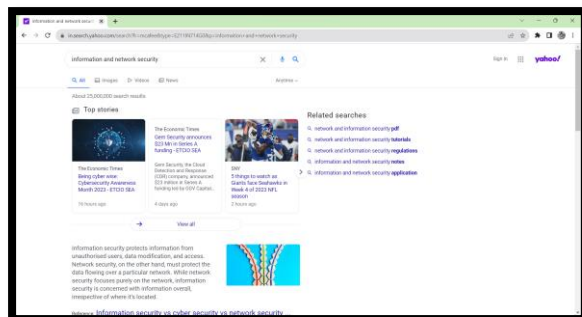


Step 13: To unblock the chrome > Go to Windows Defender Firewall > Advance Setting > Inbound Rule > Simply right click on that rule and delete it.



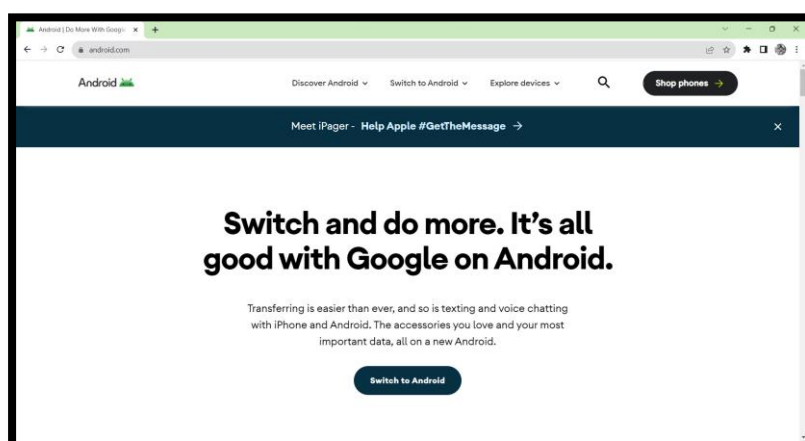
Step 14: Same process for Outbound Rule

Step 15: Now open the chrome and check



### Part 3: Blocking the website [www.android.com](http://www.android.com)

We open the browser and access the website, which is now accessible



We find the IP addresses of the website using the following command

```
Microsoft Windows [Version 10.0.22000.2176]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Sufiya ahmed>nslookup android.com
Server: Unknown
Address: 192.168.1.1

Non-authoritative answer:
Name:   android.com
Address: 2404:6800:4009:822::2004
        142.250.192.100

C:\Users\Sufiya ahmed>
```

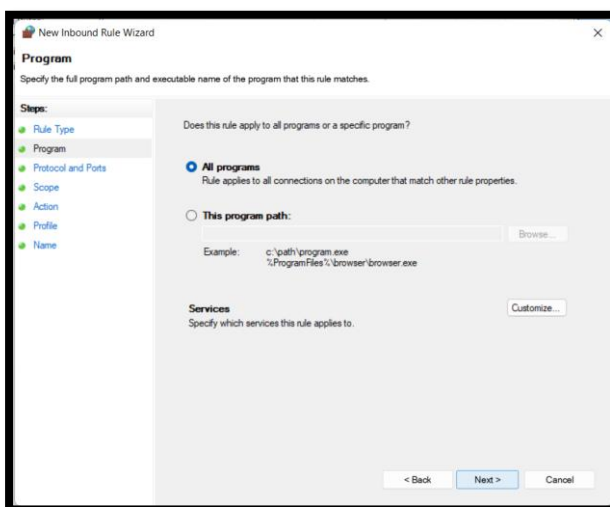
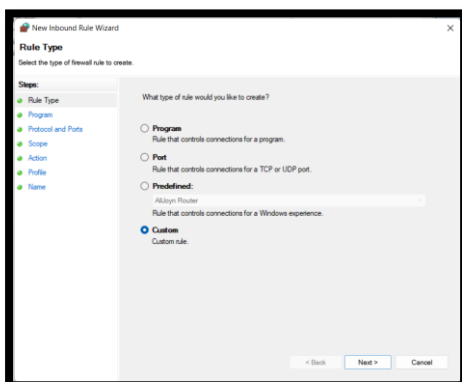
We save the IP addresses

IPV4 - 142.250.192.100

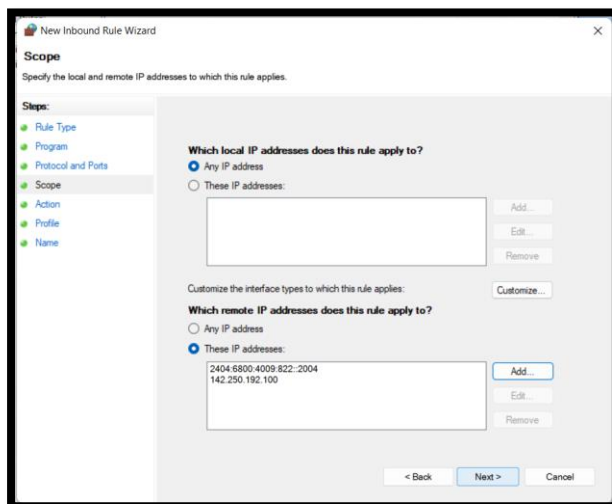
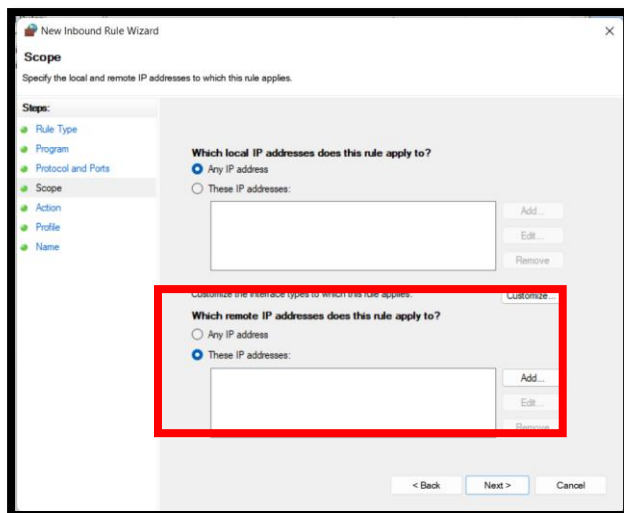
IPV6 - 2404:6800:4009:822::2004

Create Inbound Rule for IPV6:

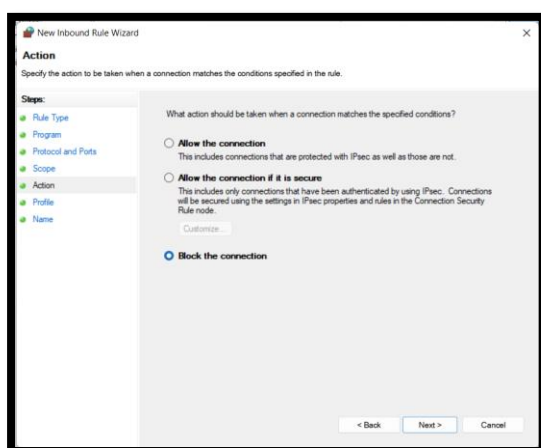
We open the windows Firewall settings and apply the Inbound Rule



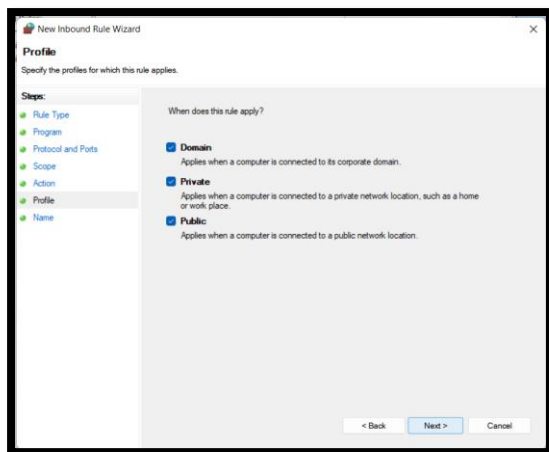
Insert the IP addresses of IPv6 and IPv4



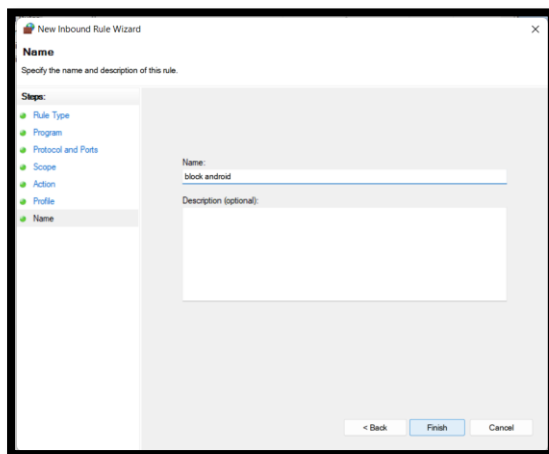
Click on block connection



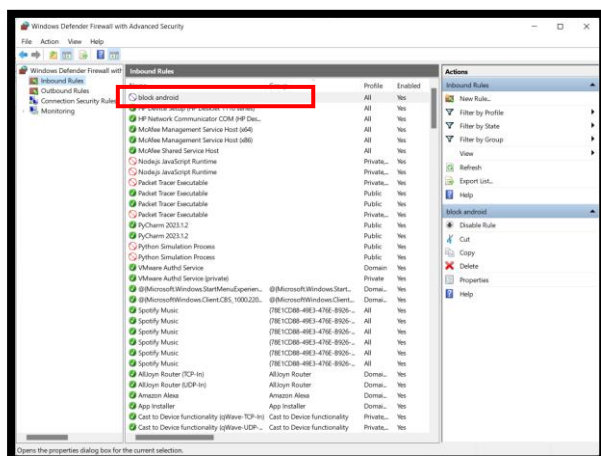
Click on Next simply



Now write the name for this Inbound rule

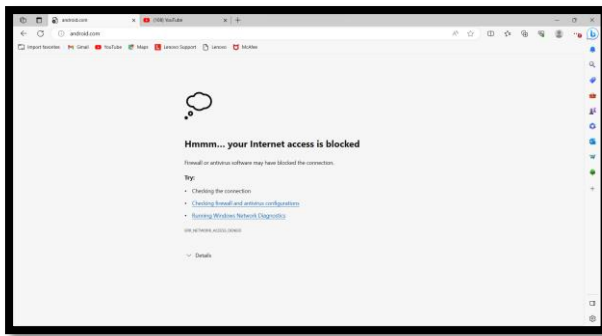


Click on Finish button and Inbound rule is added

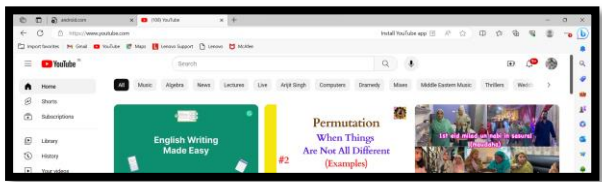


Now, follow the same steps for creating the outbound rule

Go to browser and search android.com



Simultaneously we checked for other search its working properly



Now to unblock the website > Go to Windows Defender Firewall > Advance Settings > Inbound Rule > Simply right click on that rule and delete it > Same process for Outbound > Now check below

