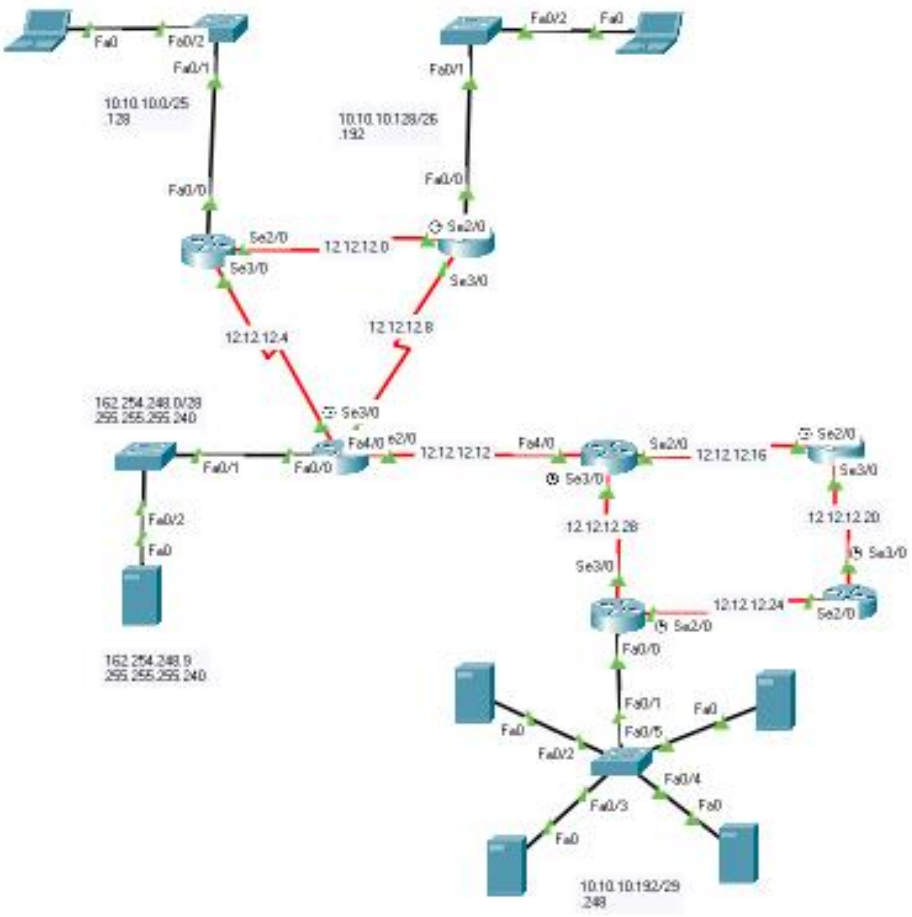
19101020
Shawan Das

Problem Statement : Design following diagram.



IP Calculation:

CSE: 70, CE: 60, Server: 4 (Network Address: 10.10.10.0/24)

Router- Router: 8 (12.12.12.0/30). DNS Server: 162.254.248.9 [255.255.255.240]

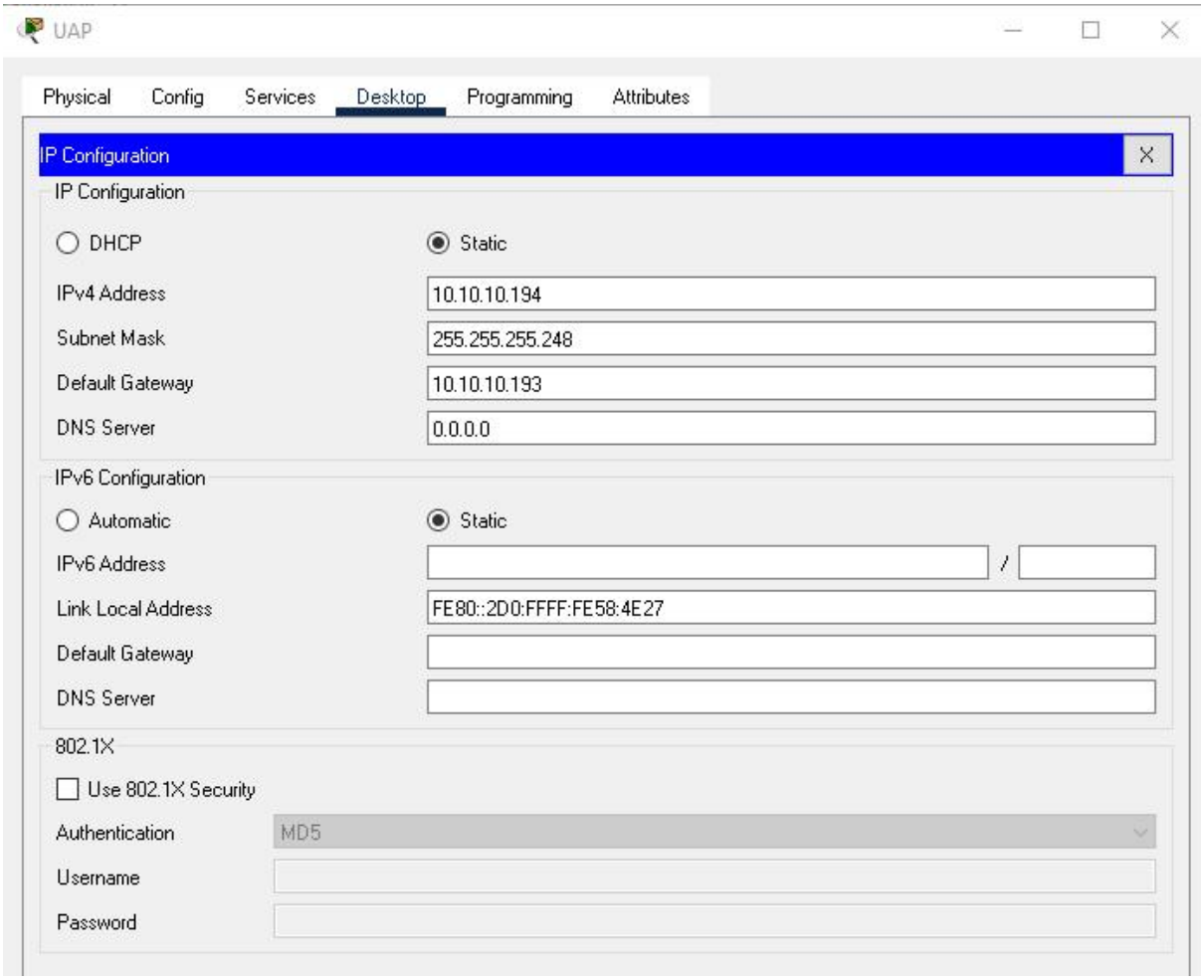
Subnet Name	Needed Size	Allocated Size	Address	Mask	Dec Mask	Assignable Range	Broadcast
CSE	70	126	10.10.10.0	/25	255.255.255.128	10.10.10.1 - 10.10.10.126	10.10.10.127
CE	50	62	10.10.10.128	/26	255.255.255.192	10.10.10.129 - 10.10.10.190	10.10.10.191
Server	4	6	10.10.10.192	/29	255.255.255.248	10.10.10.193 - 10.10.10.198	10.10.10.199

Server Setup :

Select server[uap, cse, ce, admin, main].

Go to Desktop > IP Configuration.

Insert IPv4 address and Default Gateway according to the note.



And we are done for server setup.

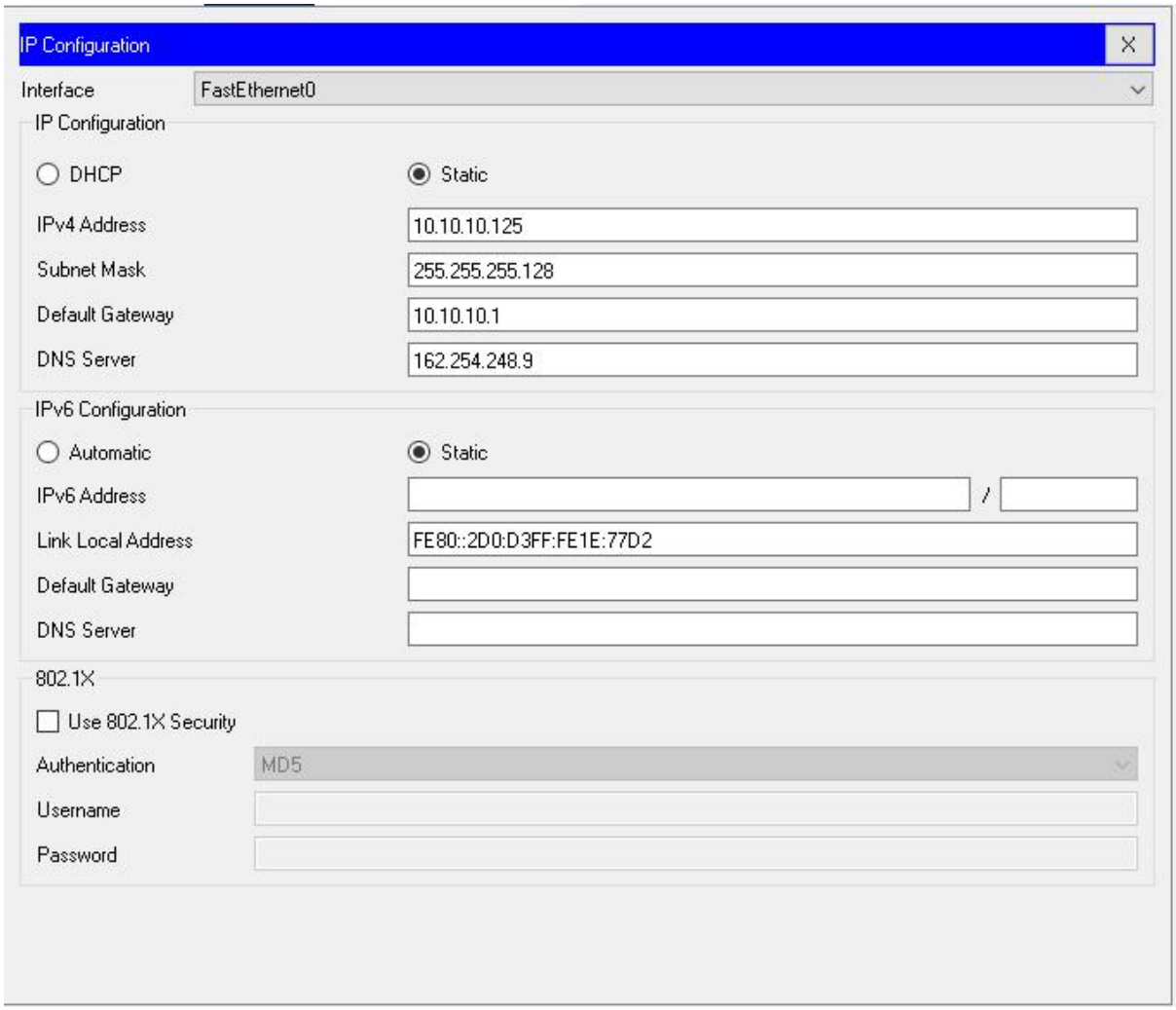
PC/Laptop Configuration :

Now we will configure our PC according to our excel note

Select a PC to configure.

Desktop > IP Configuration.

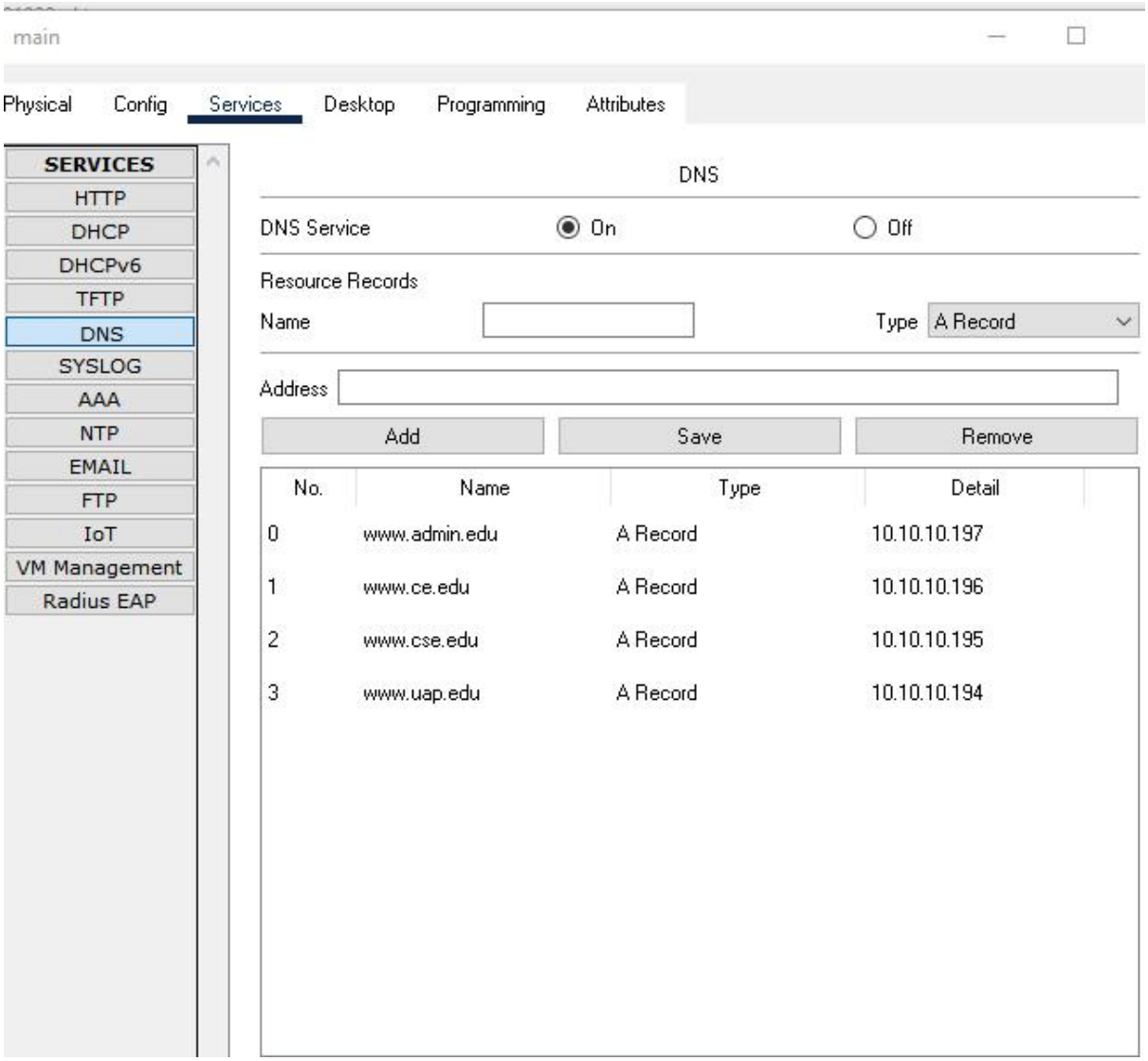
Inset IPv4 address, default gateway, DNS server according to the note.



DNS Configuration :

Select server. Then Services > DNS

Then click ADD button and you can see the added Name below.



Password
enable
conf t
enable se 19101020
line console 0
pass 19101020
line vty 0 4
pass 19101020

OSPF Configuration :

Now we have to establish OSPF configuration to establish a successful communicative connection between all used routers.

Select a router. Then CLI there comes a box where we need to write some code.

Follow the steps:

conf t

```
router ospf 020
network 10.10.10.8 0.0.0.3 area 19101020
network 10.10.10.20 0.0.0.3 area 19101020
network 10.10.10.16 0.0.0.3 area 19101020
network 192.168.7.0 0.0.0.255 area 19101020
network 192.168.8.0 0.0.0.255 area 19101020
end
```

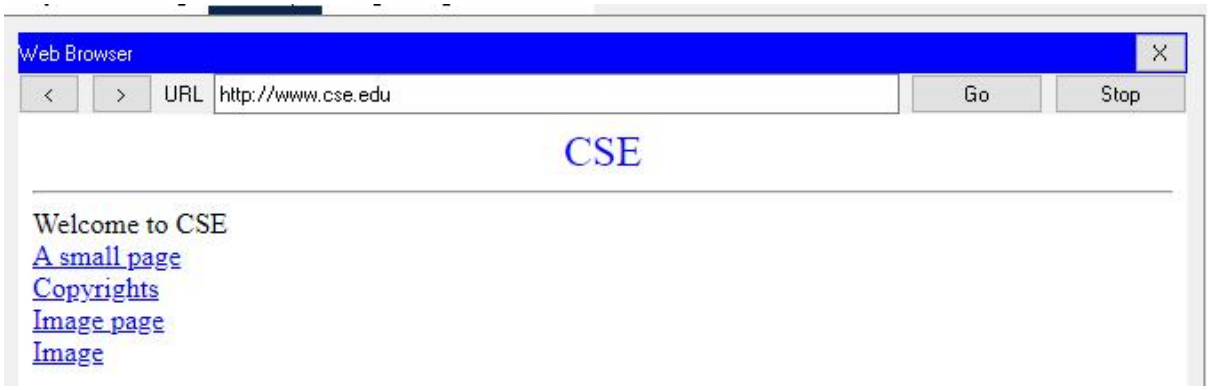
Do this work for all routers according to the table below:

After configuring all routers, we can check using [show ip route] to confirm that all networks are connected.

You can check, if all networks are connected or not, using “show ip route”.

```
00:00:10: %OSPF-5-ADJCHG: Process 20, Nbr 162.254.248.1 on Serial3/0 from LOADING to
FULL, Loading Done


Router>show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     10.0.0.0/8 is variably subnetted, 3 subnets, 3 masks
C       10.10.10.0/25 is directly connected, FastEthernet0/0
O       10.10.10.128/26 [110/65] via 12.12.12.2, 00:44:22, Serial2/0
O       10.10.10.192/29 [110/258] via 12.12.12.6, 00:43:47, Serial3/0
     12.0.0.0/30 is subnetted, 8 subnets
C       12.12.12.0 is directly connected, Serial2/0
C       12.12.12.4 is directly connected, Serial3/0
O       12.12.12.8 [110/128] via 12.12.12.2, 00:44:12, Serial2/0
                   [110/128] via 12.12.12.6, 00:44:12, Serial3/0
O       12.12.12.12 [110/65] via 12.12.12.6, 00:43:47, Serial3/0
O       12.12.12.16 [110/129] via 12.12.12.6, 00:43:47, Serial3/0
O       12.12.12.20 [110/193] via 12.12.12.6, 00:43:47, Serial3/0
O       12.12.12.24 [110/257] via 12.12.12.6, 00:43:47, Serial3/0
O       12.12.12.28 [110/129] via 12.12.12.6, 00:43:47, Serial3/0
     162.254.0.0/28 is subnetted, 1 subnets
O       162.254.248.0 [110/65] via 12.12.12.6, 00:44:12, Serial3/0

Router>
Router>
Router>
```

if everything is ok, we are good to go for web search.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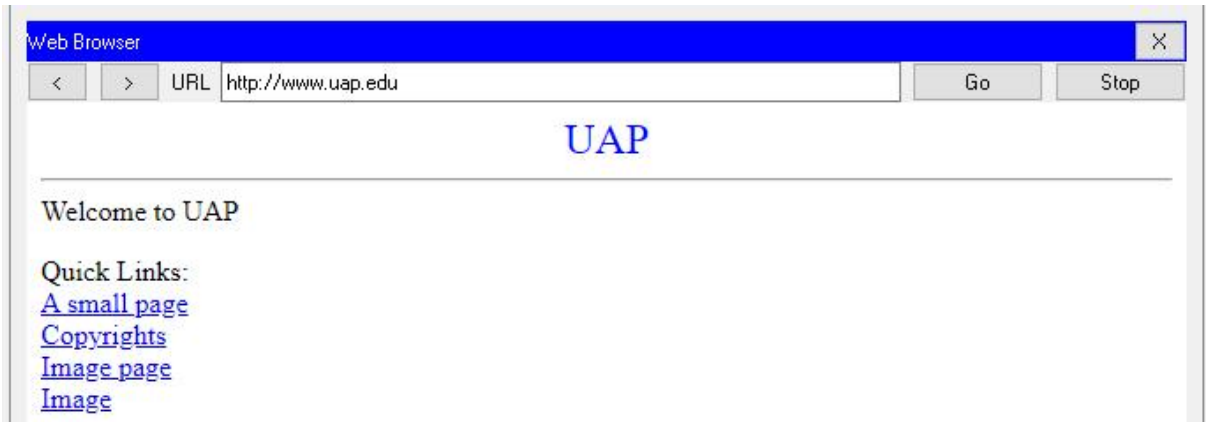
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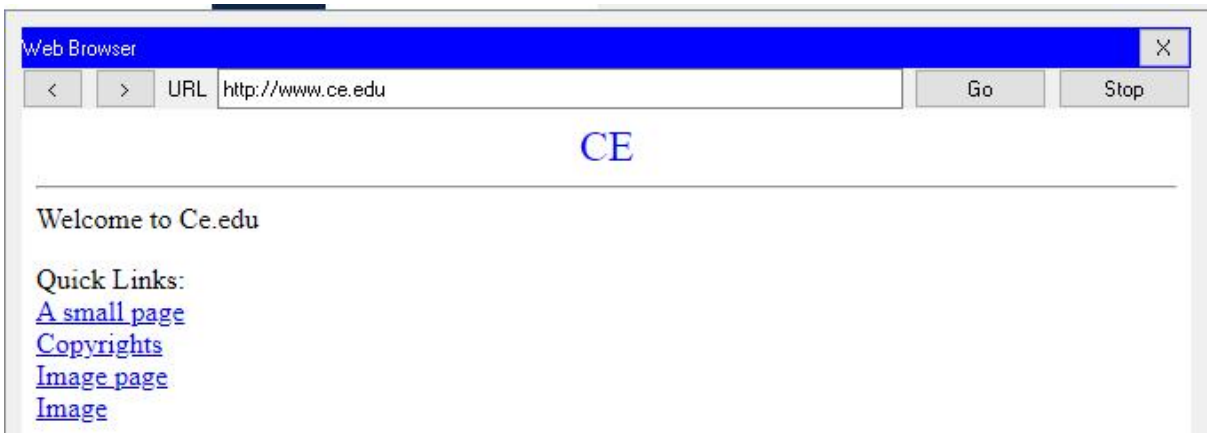
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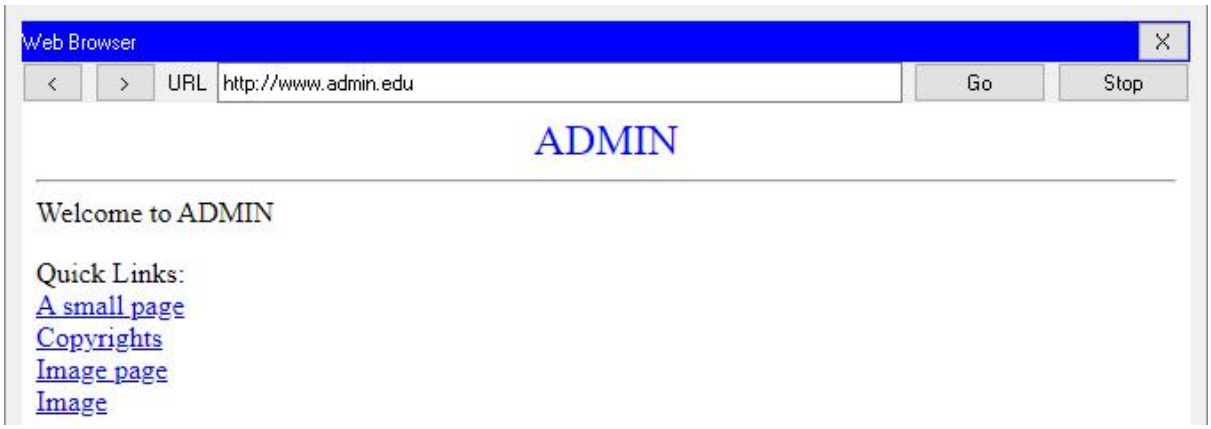
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