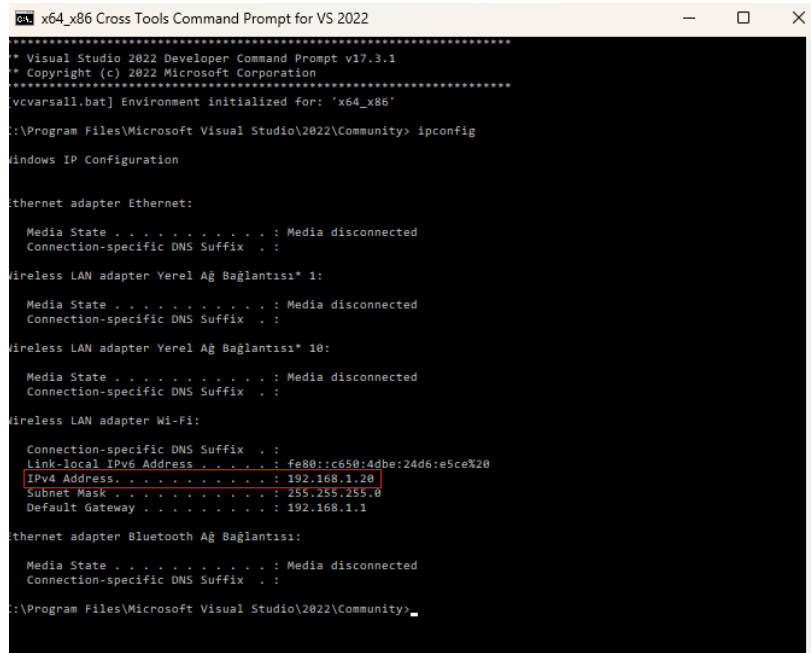


Web Server

After we completed the given python code, here are the steps we followed to get required outputs:

1. Get the IP address of the server with the usage of “ipconfig” command in command prompt in windows.



```
x64_x86 Cross Tools Command Prompt for VS 2022
*****
* Visual Studio 2022 Developer Command Prompt v17.3.1
* Copyright (c) 2022 Microsoft Corporation
*****
[vcvarsall.bat] Environment initialized for: 'x64_x86'

C:\Program Files\Microsoft Visual Studio\2022\Community> ipconfig

Windows IP Configuration

Ethernet adapter Ethernet:

   Media State . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :

Wireless LAN adapter Yerel Ağ Bağlantısı* 1:

   Media State . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :

Wireless LAN adapter Yerel Ağ Bağlantısı* 10:

   Media State . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :

Wireless LAN adapter Wi-Fi:

   Connection-specific DNS Suffix  . :
   Link-local IPv6 Address . . . . . : fe80::c650:4d6e:24d6:e5ce%20
   IPv4 Address. . . . . : 192.168.1.20
   Subnet Mask . . . . . : 255.255.255.0
   Default Gateway . . . . . : 192.168.1.1

Ethernet adapter Bluetooth Ağ Bağlantısı:

   Media State . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :

C:\Program Files\Microsoft Visual Studio\2022\Community>
```

2. We run the completed skeleton code named WebServer.py (can be found in the uploaded zip file) and at the same time searched for the web page <http://192.168.1.20:6789/HelloWorld.html>. This way we were able to see what was written in HelloWorld.html file (again, can be found in the uploaded zip file) of ours that we created for this programming assignment. While our code is running, HelloWorld.html file looks like the following in the browser:



And the HTTP response of looks like the following the Wireshark:

No.	Time	Source	Destination	Protocol	Length	Info
99	17.925717	192.168.1.20	212.252.126.88	TCP	55	54726 → 80 [ACK] Seq=1 Ack=1 Win=515 Len=1
100	17.935681	212.252.126.88	192.168.1.20	TCP	66	80 → 54726 [ACK] Seq=1 Ack=2 Win=501 Len=0 SLE=1 SRE=2
133	25.146056	77.234.45.65	192.168.1.20	HTTP	235	HTTP/1.1 200 OK
134	25.147365	192.168.1.20	77.234.45.65	HTTP	372	GET /R/A4UKIDc0ZGI3NGQxYTZlHzRjMTd1ZTU5NTQzMwY5NzRhYzExEgQEBwQjGPw0IgeBkggI8BD1jsOpA5oICAPQxZj-pwEqCag-
135	25.201525	77.234.45.65	192.168.1.20	TCP	60	80 → 51385 [ACK] Seq=182 Ack=319 Win=7 Len=0
180	32.844717	77.234.45.65	192.168.1.20	TCP	200	80 → 51385 [PSH, ACK] Seq=182 Ack=319 Win=7 Len=154 [TCP segment of a reassembled PDU]
181	32.845664	77.234.45.65	192.168.1.20	TCP	1506	80 → 51385 [ACK] Seq=336 Ack=319 Win=7 Len=1452 [TCP segment of a reassembled PDU]
182	32.845664	77.234.45.65	192.168.1.20	TCP	1506	80 → 51385 [ACK] Seq=1788 Ack=319 Win=7 Len=1452 [TCP segment of a reassembled PDU]
183	32.845856	192.168.1.20	77.234.45.65	TCP	54	51385 → 80 [ACK] Seq=319 Ack=3240 Win=521 Len=0
187	32.930685	77.234.45.65	192.168.1.20	HTTP	624	HTTP/1.1 200 OK
188	32.982872	192.168.1.20	77.234.45.65	TCP	54	51385 → 80 [ACK] Seq=319 Ack=3810 Win=519 Len=0
189	33.320241	192.168.1.20	77.234.45.65	HTTP	372	GET /R/A4UKIDc0ZGI3NGQxYTZlHzRjMTd1ZTU5NTQzMwY5NzRhYzExEgQEBwQjGPw0IgeBkggI8BD1jsOpA5oICAPQxZj-pwEqCag-
190	33.391178	77.234.45.65	192.168.1.20	TCP	60	80 → 51385 [ACK] Seq=3810 Ack=637 Win=7 Len=0
191	33.506086	212.252.126.88	192.168.1.20	TCP	54	80 → 54726 [FIN, ACK] Seq=1 Ack=2 Win=501 Len=0
192	33.506448	192.168.1.20	212.252.126.88	TCP	54	54726 → 80 [ACK] Seq=2 Ack=2 Win=515 Len=0

```

> Frame 99: 55 bytes on wire (440 bits), 55 bytes captured (440 bits) on interface \Device\NPF_{F5D95852-F366-472E-921A-935C64FE8BD0}, id 0
> Ethernet II, Src: IntelCor_be:0a:0a (c8:09:a8:be:0a:0a), Dst: zte_b2:f0:e8 (e0:19:54:b2:f0:e8)
> Internet Protocol Version 4, Src: 192.168.1.20, Dst: 212.252.126.88
> Transmission Control Protocol, Src Port: 54726, Dst Port: 80, Seq: 1, Ack: 1, Len: 1

```

3. Lastly, when we search for a file other than HelloWorld.html in the exact format in our browser, we get the following HTTP response message as it was requested:

