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Computer Networking
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Socket Programming Lab1: Web Server

Running ifconfig:

```
Last login: Tue Oct 9 13:31:11 on console
[farhads-MacBook-Pro:~ Farhad_Ahmed$ ifconfig
lo0: flags=8049<UP,LOOPBACK,RUNNING,MULTICAST> mtu 16384
    options=1203<RXCSUM,TXCSUM,TXSTATUS,SW_TIMESTAMP>
    inet 127.0.0.1 netmask 0xff000000
    inet6 fe80::1%lo0 prefixlen 64 scopeid 0x1
    nd6 options=201<PERFORMNUD,DAD>
gif0: flags=8010<POINTOPOINT,MULTICAST> mtu 1280
stf0: flags=0<> mtu 1280
XHC20: flags=0<> mtu 0
en0: flags=8863<UP,BROADCAST,SMART,RUNNING,SIMPLEX,MULTICAST> mtu 1500
    ether ac:bc:32:91:a2:af
    inet6 fe80::10c5:42f0:97ec:d3d2%en0 prefixlen 64 secured scopeid 0x5
    inet6 2604:2000:6a97:7300:c05:6887:9be9:1a25 prefixlen 64 autoconf secured
    inet6 2604:2000:6a97:7300:381e:a809:d1fc:1d3f prefixlen 64 autoconf temporary
    inet 192.168.0.11 netmask 0xfffff00 broadcast 192.168.0.255
    nd6 options=201<PERFORMNUD,DAD>
    media: autoselect
    status: active
p2p0: flags=8843<UP,BROADCAST,RUNNING,SIMPLEX,MULTICAST> mtu 2304
    ether 0e:bc:32:91:a2:af
    media: autoselect
    status: inactive
awd10: flags=8943<UP,BROADCAST,RUNNING,PROMISC,SIMPLEX,MULTICAST> mtu 1484
    ether 56:d9:d2:27:41:9e
    inet6 fe80::54d9:d2ff:fe27:419e%awd10 prefixlen 64 scopeid 0x7
    nd6 options=201<PERFORMNUD,DAD>
    media: autoselect
    status: active
en1: flags=8963<UP,BROADCAST,SMART,RUNNING,PROMISC,SIMPLEX,MULTICAST> mtu 1500
    options=60<TS04,TS06>
    ether 4a:00:02:92:f1:80
    media: autoselect <full-duplex>
    status: inactive
en2: flags=8963<UP,BROADCAST,SMART,RUNNING,PROMISC,SIMPLEX,MULTICAST> mtu 1500
    options=60<TS04,TS06>
    ether 4a:00:02:92:f1:81
    media: autoselect <full-duplex>
    status: inactive
```

```
status: inactive
bridge0: flags=8863<UP,BROADCAST,SMART,RUNNING,SIMPLEX,MULTICAST> mtu 1500
options=63<RXCSUM, TXCSUM, TS04, TS06>
ether 4a:00:02:92:f1:80
Configuration:
id 0:0:0:0:0:0 priority 0 hellotime 0 fwddelay 0
maxage 0 holdcnt 0 proto stp maxaddr 100 timeout 1200
root id 0:0:0:0:0:0 priority 0 ifcost 0 port 0
ipfilter disabled flags 0x2
member: en1 flags=3<LEARNING,DISCOVER>
ifmaxaddr 0 port 8 priority 0 path cost 0
member: en2 flags=3<LEARNING,DISCOVER>
ifmaxaddr 0 port 9 priority 0 path cost 0
nd6 options=201<PERFORMNUD,DAD>
media: <unknown type>
status: inactive
utun0: flags=8051<UP,POINTOPOINT,RUNNING,MULTICAST> mtu 2000
inet6 fe80::e0e4:153f:d2e4:1c87%utun0 prefixlen 64 scopeid 0xb
nd6 options=201<PERFORMNUD,DAD>
utun1: flags=8051<UP,POINTOPOINT,RUNNING,MULTICAST> mtu 1380
inet6 fe80::aca1:f2d3:1844:51b1%utun1 prefixlen 64 scopeid 0xc
nd6 options=201<PERFORMNUD,DAD>
```

HelloWorld being served on the server:

The screenshot shows a web browser window with the address bar displaying 'localhost:1080/HelloWorld.html'. The page content is 'Hello World!'. In the background, a terminal window shows the execution of a Python script named 'fa961_WebServer.py'. The script uses the 'socket' module to create a server socket on port 1080. It enters a loop where it accepts connections and serves files. For the request 'HelloWorld.html', it successfully reads the file content and sends it to the client. The terminal output shows the server's internal state, including the file being served and the data being sent over the socket.

```
Python 3.6.4 Shell
[GCC 4.2.1 (Apple LLVM 3.2.1.0.2.1)]
Type "copyright" for more details.
>>> RESTART: /Users/Farhad_Ahmed/Desktop/CompNetworking/Lab - Web Server/fa961_WebServer.py
Ready to serve
Ready to serve
Traceback (most recent call last):
  File "/Users/Farhad_Ahmed/Desktop/CompNetworking/Lab - Web Server/fa961_WebServer.py", line 11, in <module>
    filename = message.split()[1]
IndexError: list index out of range
>>> RESTART: /Users/Farhad_Ahmed/Desktop/CompNetworking/Lab - Web Server/fa961_WebServer.py
Ready to serve
Ready to serve
<html>
<head>
<h1>WELCOME</h1>
</head>
<body>
<h1>HELLO WORLD</h1>
</body>
</html>
Ready to serve
Ready to serve
```

404 Error when trying to serve HelloWorlds.html:

