

- DNS

```
server.py U X
DNS > server.py > ...
1  import socket
2
3
4  server = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
5  Host = socket.gethostname()
6  Port = 12345
7  server.bind((Host, Port))
8  DNSTable = {
9      "www.google.com" : "142.251.35.164" ,
10     "www.facebook.com" : "157.240.214.35" ,
11     "www.e-learn.suezuni.edu.eg" : "195.246.40.171"
12 }
13 server.listen(5)
14 Communication_socket ,address = server.accept()
15 print(f"Connection to {address} established" )
16 while True :
17     message = Communication_socket.recv( 1024).decode( 'utf-8' )
18     ip = DNSTable.get(message , "Not Found")
19     Communication_socket.send(ip.encode( 'utf-8' ))
```

```
server.py U client.py X
DNS > client.py > ...
1  import socket
2
3
4  client = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
5  Host = socket.gethostname()
6  Port = 12345
7  client.connect((Host, Port))
8  c = "y"
9  while c == "y":
10     domain = input("Enter the domian name : \n")
11     client.send(domain.encode('utf-8'))
12     message = client.recv(1024).decode('utf-8')
13     print(message)
14     c = input("Continue? (y / n)\n")
15 client.close()
```

```
PS D:\College\Sems\Semester 8\Network Programming\Network Programming Section\Sec5\DNS> py .\server.py
Connection to ('192.168.16.2', 51132) established
```

```
PS D:\College\Sems\Semester 8\Network Programming\Network Programming Section\Sec5\DNS> py .\client.py
Enter the domain name :
www.youtube.com
Not Found
Continue? (y / n)
y
Enter the domain name :
www.facebook.com
157.240.214.35
Continue? (y / n)
y
Enter the domain name :
www.google.com
142.251.35.164
Continue? (y / n)
█
```

- Download a web page

```
server.py U X
Web Page > server.py > ...
1 import socket
2
3
4 server = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
5 server.connect(("www.facebook.com", 80))
6 server.sendall(b"GET/HTTP/1.1\nHost:www.facebook.com\n")
7 print(server.recv(4096).decode('utf-8'))
```

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```
PowerShell PowerShell + v
PS D:\College\Sems\Semester 8\Network Programming\Network Programming Section\Sec5\Web Page> py .\server.py
HTTP/1.1 400 Bad Request
Content-Type: text/html; charset=utf-8
Date: Tue, 12 Apr 2022 20:38:38 GMT
Connection: close
Content-Length: 2959

<!DOCTYPE html>
<html lang="en" id="facebook">
<head>
<title>Facebook | Error</title>
<meta charset="utf-8">
<meta http-equiv="cache-control" content="no-cache">
<meta http-equiv="cache-control" content="no-store">
<meta http-equiv="cache-control" content="max-age=0">
<meta http-equiv="expires" content="-1">
<meta http-equiv="pragma" content="no-cache">
<meta name="robots" content="noindex,nofollow">
<style>
html, body {
color: #141823;
background-color: #e9eae2;
font-family: Helvetica, Lucida Grande, Arial,
Tahoma, Verdana, sans-serif;
margin: 0;
padding: 0;
text-align: center;
}

#header {
height: 30px;
padding-bottom: 10px;
padding-top: 10px;
text-align: center;
}

#icon {
width: 30px;
}

h1 {
```

○

- File Transfer

```
server.py U × client.py U textFile.py U
File Transfer > server.py > ...
1 import socket
2
3
4 s = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
5 Host = socket.gethostname()
6 Port = 1235
7 s.bind((Host, Port))
8 s.listen(5)
9 client_socket, address = s.accept()
10 print(f"Connection to {address} established")
11 fileName = "test.txt"
12 client_socket.send(fileName.encode('utf-8'))
13 file = open("test.txt", "rb")
14 data = file.read()
15 client_socket.send(data)
16 file.close()
17 client_socket.close()
```

```
server.py U client.py U × textFile.py U
File Transfer > client.py > ...
1 import socket
2
3 client = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
4 Host = socket.gethostname()
5 Port = 1235
6 client.connect((Host, Port))
7 file_name = client.recv(1024).decode('utf-8')
8 file_name = "The new file" + file_name
9 file = open(file_name, "wb")
10 data = client.recv(1024)
11 file.write(data)
12 file.close()
13
```

The screenshot shows the Visual Studio Code interface. The top panel displays a Python script with the following code:

```
1 with open('test.txt', 'w') as f:  
2     f.write('asadaswdasaaasdaddsdaaaaaaaadsdddddadaa')
```

The bottom panel shows the Explorer view on the left, listing the following files and folders:

- server.py
- client.py
- textFile.py
- The new file test.txt

The main editor area displays the content of 'The new file test.txt', which is:

```
1 asadaswdasaaasdaddsdaaaaaaaadsdddddadaa
```

A red arrow points from the file 'The new file test.txt' in the Explorer view to the first line of the file in the editor.

- Image Transfer

```
client.py U server.py U
Image Transfer > server.py > ...
1 import socket
2
3 s = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
4 Host = socket.gethostname()
5 Port = 1235
6 s.bind((Host, Port))
7 s.listen(5)
8 client_socket, address = s.accept()
9 print(f"Connection to {address} established \n")
10 name = input("Enter the name of the img: \n")
11 ext = input("Enter the extension of your received file - jpg, png or bmp\n")
12 nwImg = name + "." + ext
13 file = open(nwImg, "wb")
14 image_data = client_socket.recv(2048)
15
16 while image_data:
17     file.write(image_data)
18     image_data = client_socket.recv(2048)
19
20 file.close()
21 client_socket.close()
```

```
client.py U x server.py U
Image Transfer > client.py > ...
1 import socket
2
3
4 client = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
5 Host = socket.gethostname()
6 Port = 1235
7 client.connect((Host, Port))
8 file = open('f6.jpg', 'rb')
9 image_data = file.read(2048)
10
11 while image_data:
12     client.send(image_data)
13     image_data = file.read(2048)
14
15 file.close()
16 client.close()
```

