

```
In [1]: from socket import socket
import time
```

```
In [64]: ip = "*****"
port = 8080

def request_response(request, ip, port):
    s = socket()
    s.connect((ip, port))
    s.sendall(request)
    time.sleep(2)
    print(s.recv(4096).decode())
```

## TEST 1

200 Expect ; Simple Valid Request ; also check for content-length, which should be 307

```
In [34]: test1 = b"GET /index.html HTTP/1.1\r\nHost: Ha\r\n\r\n"
request_response(test1, ip, port)
```

```
HTTP/1.1 200 OK
Server: Go-Triton-Server-1.0
Last-Modified: Friday, 23-Oct-20 09:38:02 UTC
Content-Type: text/html
Content-Length: 307

<html>
<head>
<title>Basic index file</title>
</head>
<body>
<h1>This is a basic index file</h1>
You can use this for testing.
<p>
<ul>
<li><a href=UCSD_Seal.png alt="UCSD Seal">UCSD seal</a>
<li><a href=kitten.jpg alt="Kitten">Kitten photo</a>
<li><a href=subdir1/>A subdirectory</a>
</ul>
</body>
</html>
```

## TEST 2

200 Expect ; Support Subdir ; /subdir1/index.html

```
In [35]: test2 =b"GET /subdir1/index.html HTTP/1.1\r\nHost: Ha\r\n\r\n"
request_response(test2,ip,port)
```

```
HTTP/1.1 200 OK
Server: Go-Triton-Server-1.0
Last-Modified: Friday, 23-Oct-20 09:38:02 UTC
Content-Type: text/html
Content-Length: 177

<html>
<head>
  <title>Basic subdirectory file</title>
</head>
<body>
<h1>This is a basic index file for a subdirectory</h1>
You can use this for testing.
<p>
</body>
</html>
```

## TEST 3

200 Expect ; translate / to /index.html

```
In [41]: test3 = b"GET / HTTP/1.1\r\nHost: Ha\r\n\r\n"
request_response(test3,ip,port)
```

```
HTTP/1.1 200 OK
Server: Go-Triton-Server-1.0
Last-Modified: Friday, 23-Oct-20 09:38:02 UTC
Content-Type: text/html
Content-Length: 307

<html>
<head>
<title>Basic index file</title>
</head>
<body>
<h1>This is a basic index file</h1>
You can use this for testing.
<p>
<ul>
<li><a href=UCSD_Seal.png alt="UCSD Seal">UCSD seal</a>
<li><a href=kitten.jpg alt="Kitten">Kitten photo</a>
<li><a href=subdir1/>A subdirectory</a>
</ul>
</body>
</html>
```

## Test 4

200 Expect ; translate /subdir1/ to /subdir/index.html

```
In [42]: test4 =b"GET /subdir1/ HTTP/1.1\r\nHost: Ha\r\n\r\n"
request_response(test4,ip,port)

HTTP/1.1 200 OK
Server: Go-Triton-Server-1.0
Last-Modified: Friday, 23-Oct-20 09:38:02 UTC
Content-Type: text/html
Content-Length: 177

<html>
<head>
  <title>Basic subdirectory file</title>
</head>
<body>
<h1>This is a basic index file for a subdirectory</h1>
You can use this for testing.
<p>
</body>
</html>
```

## Test 5

400 Expect ; malformed GET

```
In [43]: test5 =b"get /index.html HTTP/1.1\r\nHost: Ha\r\n\r\n"
request_response(test5,ip,port)

HTTP/1.1 400 Bad Request
Server: Go-Triton-Server-1.0
```

## Test 6

400 Expect ; malformed HTTP/1.1

```
In [45]: test6 =b"GET /index.html http\r\nHost: Ha\r\n\r\n"
request_response(test6,ip,port)

HTTP/1.1 400 Bad Request
Server: Go-Triton-Server-1.0
```

## Test 7

400 Expect ; no host in request

```
In [47]: test7 =b"GET /index.html HTTP/1.1\r\n\r\n"
request_response(test7,ip,port)
```

```
HTTP/1.1 400 Bad Request
Server: Go-Triton-Server-1.0
```

## Test 8

200 Expect ; test connection close header

```
In [49]: test8 =b"GET /index.html HTTP/1.1\r\nHost: Ha\r\nConnection: close\r\n\r\n"
request_response(test8,ip,port)
```

```
HTTP/1.1 200 OK
Server: Go-Triton-Server-1.0
Last-Modified: Friday, 23-Oct-20 09:38:02 UTC
Content-Type: text/html
Content-Length: 307
Connection: close
```

```
<html>
<head>
<title>Basic index file</title>
</head>
<body>
<h1>This is a basic index file</h1>
You can use this for testing.
<p>
<ul>
<li><a href=UCSD_Seal.png alt="UCSD Seal">UCSD seal</a>
<li><a href=kitten.jpg alt="Kitten">Kitten photo</a>
<li><a href=subdir1/>A subdirectory</a>
</ul>
</body>
</html>
```

## Test 9

404 Expect ; test file not found

```
In [52]: test9 =b"GET /sue.html HTTP/1.1\r\nHost: Ha\r\n\r\n"  
request_response(test9,ip,port)
```

```
HTTP/1.1 404 Not Found  
Server: Go-Triton-Server-1.0
```

## Test 10

400 Expect ; missing forward slash

```
In [54]: test10 =b"GET index.html HTTP/1.1\r\nHost: Ha\r\n\r\n"  
request_response(test10,ip,port)
```

```
HTTP/1.1 400 Bad Request  
Server: Go-Triton-Server-1.0
```

## Test 11

404 Expect ; file escaping doc root

```
In [69]: test11 =b"GET ../../request.input HTTP/1.1\r\nHost: Ha\r\n\r\n"  
request_response(test11,ip,port)
```

```
HTTP/1.1 404 Not Found  
Server: Go-Triton-Server-1.0
```

## Test 12

200 Expect; file not escaping doc root

```
In [7]: test12 =b"GET /subdir1/subdir11/../../../../subdir1/subdir11 HTTP/1.1\r\nHost:
Ha\r\n\r\n"
request_response(test12,ip,port)

HTTP/1.1 200 OK
Server: Go-Triton-Server-1.0
Last-Modified: Monday, 02-Nov-20 00:10:11 UTC
Content-Type: text/html
Content-Length: 184

<html>
<head>
  <title>Twice subdirectory file</title>
</head>
<body>
<h1>This is a basic index file for a double-subdirectory</h1>
You can use this for testing.
<p>
</body>
</html>
```

## Test 13

404 Expect ; file not found in subdir

```
In [71]: test13 =b"GET /subdir1/sue.html HTTP/1.1\r\nHost: Ha\r\n\r\n"
request_response(test13,ip,port)
```

```
HTTP/1.1 404 Not Found
Server: Go-Triton-Server-1.0
```

## Test 14

400 Expect ; malformed header

```
In [73]: test14 =b"GET /index.html HTTP/1.1\r\nHost Ha\r\n\r\n"
request_response(test14,ip,port)
```

```
HTTP/1.1 400 Bad Request
Server: Go-Triton-Server-1.0
```

## Test 15

200 Expect ; other header added

```
In [77]: test15 =b"GET /index.html HTTP/1.1\r\nHost: Ha\r\nAgent: Chrome\r\n\r\n"
request_response(test15,ip,port)

HTTP/1.1 200 OK
Server: Go-Triton-Server-1.0
Last-Modified: Friday, 23-Oct-20 09:38:02 UTC
Content-Type: text/html
Content-Length: 307

<html>
<head>
<title>Basic index file</title>
</head>
<body>
<h1>This is a basic index file</h1>
You can use this for testing.
<p>
<ul>
<li><a href=UCSD_Seal.png alt="UCSD Seal">UCSD seal</a>
<li><a href=kitten.jpg alt="Kitten">Kitten photo</a>
<li><a href=subdir1/>A subdirectory</a>
</ul>
</body>
</html>
```

## Test 16

400 Expect ; Partial Request + Timeout

```
In [83]: s = socket()
s.connect((ip,port))
test16 =b"GET /index.html HTTP/1.1\r\n"
s.sendall(test16)
start = time.time()
print(s.recv(4096).decode())
end = time.time()
print('time interval in seconds: ',end - start)
```

```
HTTP/1.1 400 Bad Request
Server: Go-Triton-Server-1.0
```

```
time interval in seconds: 6.196410179138184
```

## Test 17

200, 200, 200 Expect ; Valid Pipeline

```
In [84]: test17 =b"GET /index.html HTTP/1.1\r\nHost: Ha\r\n\r\n"  
test17 +=b"GET /subdir1/index.html HTTP/1.1\r\nHost: Ha\r\n\r\n"  
test17 +=b"GET /subdir1/subdir11/index.html HTTP/1.1\r\nHost: Ha\r\n\r\n"  
request_response(test17,ip,port)
```



```
HTTP/1.1 200 OK
Server: Go-Triton-Server-1.0
Last-Modified: Friday, 23-Oct-20 09:38:02 UTC
Content-Type: text/html
Content-Length: 307
```

```
<html>
<head>
<title>Basic index file</title>
</head>
<body>
<h1>This is a basic index file</h1>
You can use this for testing.
<p>
<ul>
<li><a href=UCSD_Seal.png alt="UCSD Seal">UCSD seal</a>
<li><a href=kitten.jpg alt="Kitten">Kitten photo</a>
<li><a href=subdir1/>A subdirectory</a>
</ul>
</body>
</html>
```

```
HTTP/1.1 200 OK
Server: Go-Triton-Server-1.0
Last-Modified: Friday, 23-Oct-20 09:38:02 UTC
Content-Type: text/html
Content-Length: 177
```

```
<html>
<head>
  <title>Basic subdirectory file</title>
</head>
<body>
<h1>This is a basic index file for a subdirectory</h1>
You can use this for testing.
<p>
</body>
</html>
```

```
HTTP/1.1 200 OK
Server: Go-Triton-Server-1.0
Last-Modified: Friday, 23-Oct-20 09:38:02 UTC
Content-Type: text/html
Content-Length: 184
```

```
<html>
<head>
  <title>Twice subdirectory file</title>
</head>
<body>
<h1>This is a basic index file for a double-subdirectory</h1>
You can use this for testing.
<p>
</body>
</html>
```

## Test 18

200, 404, 200 Expect ; Pipeline + 404

```
In [85]: test18 =b"GET /index.html HTTP/1.1\r\nHost: Ha\r\n\r\n"
test18 +=b"GET /hello.html HTTP/1.1\r\nHost: Ha\r\n\r\n"
test18 +=b"GET /subdir1/subdir11/index.html HTTP/1.1\r\nHost: Ha\r\n\r\n"
request_response(test18,ip,port)
```

```
HTTP/1.1 200 OK
Server: Go-Triton-Server-1.0
Last-Modified: Friday, 23-Oct-20 09:38:02 UTC
Content-Type: text/html
Content-Length: 307
```

```
<html>
<head>
<title>Basic index file</title>
</head>
<body>
<h1>This is a basic index file</h1>
You can use this for testing.
<p>
<ul>
<li><a href=UCSD_Seal.png alt="UCSD Seal">UCSD seal</a>
<li><a href=kitten.jpg alt="Kitten">Kitten photo</a>
<li><a href=subdir1/>A subdirectory</a>
</ul>
</body>
</html>
```

```
HTTP/1.1 404 Not Found
Server: Go-Triton-Server-1.0
```

```
HTTP/1.1 200 OK
Server: Go-Triton-Server-1.0
Last-Modified: Friday, 23-Oct-20 09:38:02 UTC
Content-Type: text/html
Content-Length: 184
```

```
<html>
<head>
<title>Twice subdirectory file</title>
</head>
<body>
<h1>This is a basic index file for a double-subdirectory</h1>
You can use this for testing.
<p>
</body>
</html>
```

## Test 19

200, 400 Expect ; Pipeline + malformed

```
In [88]: test19 =b"GET /subdir1/index.html HTTP/1.1\r\nHost: Ha\r\n\r\n"  
test19 +=b"GET /index.html HTTP/1.1\r\nHost:: Ha\r\n\r\n"  
request_response(test19,ip,port)
```

```
HTTP/1.1 200 OK  
Server: Go-Triton-Server-1.0  
Last-Modified: Friday, 23-Oct-20 09:38:02 UTC  
Content-Type: text/html  
Content-Length: 177
```

```
<html>  
<head>  
  <title>Basic subdirectory file</title>  
</head>  
<body>  
<h1>This is a basic index file for a subdirectory</h1>  
You can use this for testing.  
<p>  
</body>  
</html>  
HTTP/1.1 400 Bad Request  
Server: Go-Triton-Server-1.0
```

## Test 20

200,200, N/A ; Pipeline + connection close

```
In [90]: test20 =b"GET /index.html HTTP/1.1\r\nHost: Ha\r\n\r\n"
test20 +=b"GET /subdir1/index.html HTTP/1.1\r\nHost: Ha\r\nConnection: c
lose\r\n\r\n"
test20 +=b"GET /subdir1/subdir11/index.html HTTP/1.1\r\nHost: Ha\r\n\r\n"
request_response(test20,ip,port)
```

```
HTTP/1.1 200 OK
Server: Go-Triton-Server-1.0
Last-Modified: Friday, 23-Oct-20 09:38:02 UTC
Content-Type: text/html
Content-Length: 307
```

```
<html>
<head>
<title>Basic index file</title>
</head>
<body>
<h1>This is a basic index file</h1>
You can use this for testing.
<p>
<ul>
<li><a href=UCSD_Seal.png alt="UCSD Seal">UCSD seal</a>
<li><a href=kitten.jpg alt="Kitten">Kitten photo</a>
<li><a href=subdir1/>A subdirectory</a>
</ul>
</body>
</html>
```

```
HTTP/1.1 200 OK
Server: Go-Triton-Server-1.0
Last-Modified: Friday, 23-Oct-20 09:38:02 UTC
Content-Type: text/html
Content-Length: 177
Connection: close
```

```
<html>
<head>
<title>Basic subdirectory file</title>
</head>
<body>
<h1>This is a basic index file for a subdirectory</h1>
You can use this for testing.
<p>
</body>
</html>
```

## Test 21

200 Expect ; get image file

```
In [93]: test21 =b"GET /UCSD_Seal.png HTTP/1.1\r\nHost: Ha\r\n\r\n"  
s = socket()  
s.connect((ip,port))  
s.sendall(test21)  
time.sleep(2)  
print(s.recv(4096))
```

14/18

\x00\x00\x00\x94\x12\n\xc0\x00\x00\x00\x90\x07\xab\xbf\xd6T\x19\xb0  
\xb9\xe9>\xd7\xb4ZkfYi\xaaq\xd4\*\xabY:\xd2\xad\xdb\xaa#\xdd\xba\x00^kHR  
\x97\xa4N\x19\xed\xb1\xae\xba~\xddQ\xacN\x19\xf7\xa5s\x96\x0f\xc6\xbc\x  
0e\t\x00\x00\x00\x00\xc5\x82\x020\x00\x00\x00\x00\xbc\x85\xbb\xee\x92\x  
af\xfdP\xc3\x14\x1b\xb4\xldr}m\xc6\x1c\xed\xde\x95\xda\x8c\xd4.i\x9a\x8  
e\x14x\x03\xde&\x05JRNr\x8f\x919 \xeb\x1e\xb6\xd2!k\xccAY\x1d\xfd\x9c\x  
1c\xca\xfd92\x07k\xfb\x87\xbb\x189\r\x00\x00\x00\x00GP\x00\x06\x00\x00\x  
00P\xfd6\xac\x95YsK\xcbL\xbf/;\xcbZ3\xcb\x183\xcb\xca\xce\x92\xfd4\xfd2\x0  
f:w\x81\xc27\$!\x8f\xa4=Ff\x8f\xb5v\x8f1v06\xe7\xfd\x31\xa4g\x9fy!\xd7  
\xeb\x80\x00\x00\x00\x000\x19(\x00\x03\x00\x00\x00(\x0b\xcf}\xa5%\x9a\x  
08\xe6Nv\x1d3\xcbZw\x961f\x96\xacf\x9h\x96\xac\xda\$\x85\xbc\xce\x08`\x  
c2\xa4etHV{dt\xb48\xec\xecq\\\xb'\x9b\xd4\xcee7\xfd6\x8fz\x1d\x10\x00  
\x00\x00\x00\xfd2\x85\x020\x00\x00\x00\x80\x92@\x17/\x80\x13@\xf70\x00\x  
00\x00\x80\x92A\x01\x18\x00\x00\x00@\xd1y\reak\xfd5\xd3\\\xab\x93m\xcew  
\xb2k\xec|#\xcd\x934\_G\xce\xe1\x05\x80<2\x03Vv\xbb\xa4\x1d\x92vXk\xb6  
[\xd7\xd9Aa\x18\x00\x00\x00@\xa1\xa2\x00\x0c\x00\x00\x00\xa0 \xad\xfd9\x  
d7\xc6\*\xf7\xd8\x9c\xe6\xca.0\xc6\xcc\x32\xd6.\x94\xa3\x05\xb2\x9a&)\xe  
0u>\x00e/+\xa3\x03\xb2\xdacd\xb7Yk\xb6\x1ac\xfd7\xb8\x01\xff\xfd3K?\xd1\x  
d3\xebu8\x00\x00\x00\x00\xe5\x8b\x020\x00\x00\x00\x00\xcf\xbcfl\x3q\x1  
6Jv\x81\xac\x16JZ F6\x03(^C\x92\xb6\x9h\xab\xb5v\x8f#\xb3~\x9b\xfd3m\xa  
5k\x18\x00\x00\x00\x0d\xa0\x00\x0c\x00\x00\x00`R<\xf1\xef5u\xfe\\\xe04  
\xeb\xda\x85F\xce\x02k\xec\xcbc\x9b\xa7z\x9d\r\x00&\x83\x95\xfa\x8d\xb4  
\xddH;d\xb5\xc35\xee\x0b>\xd7\xff\xdc9\x9f\xee\xed\xfd1:\x1b\x00\x00\x00  
\x80\xd2A\x01\x18\x00\x00\x00@^\xad\xbb\xa9=\xe2\xfd8R\x8b\x8f\x8cn\xb6  
\x0b\xad\xccbI\x0b%\xd5z\x9d\r\x00\nTL\xd2K\x92\xb6\x9c\x98M\x8e\xabM\x  
91\xb4\xb3\xfd9\xb4\xcf\xfd7\xc4\xbd\x0e\x06\x00\x00\x00\xa0\xfd8P\x00\x06  
\x00\x00\x00p\xdc\x1e\xbf\xb9\xb15\xe0\xd3\x12\xd7j\xb11Z\xa0#\x85\xde  
\xb9\x92\xfd\x1eG\x03\x80R\xd0%\xabMV\xdad\x1c\xb3\xd55\xb9mK\xaf\x1f\x  
dcf\x8c\xac\xdc7\x1c\x00\x00\x00\x00\x14.\n\xc0\x00\x00\x00\x00\xde\xdc2  
\xea;f\x84#\xb1\xfd8\x92\xfd\xe8\xea\xe5\x9c^\x00\x98|#\x92^\x90\xdc1V\x  
9ls\m\xfd2\x87\x03\xcf,\xb9\xae\xdc\xeb`\x00\x00\x00\x00\n\x03\x05`\x0  
0\x00\x00\x00\xaf\xb1\xee\xa6\xfd6\x88\r\x8e\x9f\xeeX\xe74ku\xbad\x16I\x  
f6TI\x95^g\x03\x00\xbc\xa1\x94\xa4\xad\xc6\xda\xe7\xac1\xcf\xbbV\xcf\xfd  
9\x8d\xbb\xe9\x9c\xe5\x831\xaf\x83\x01\x00\x00\x00\x98|\x14\x80\x01\x00  
\x00\x802\xfd6Jg\xaf\xa3\xc5\xb2v\xa9\xa4e\x92Z\xbd\xce\x05\x00\xc8\x8bW  
FH;F\x9b\x92\xb9\xec\x13\x17}fx\xdc8\xebP\x00\x00\x00\x00&\x16\x05`\x00  
\x00\x00\xa0L\xdc8\x15r\xdc66\xdc6\xcfwr\xceR\x19~\x93\xb4X\x9c\xdc7\x0b\x0  
0\xe5\$`'\xe9EI\x9bd\xcc&\xc7\xdc5\xa6AS\xfd3\xfd4\xe5\xcbw\xa5\xbc\x0e\x06  
\x00\x00\x00 \xf7(\x00\x03\x00\x00\x00%\xea\x9U-3s6{\xbe\x91\x16\x1f=  
\xb3w\x91\xa4\*\xafs\x01\x00\nJF\xdc2\xfd3Fv\xad\x956\xb9\x8e\xdd\xb4\xfd4  
\xfa\xclm\xc6\xc8z\x1d\x0c\x00\x00\x00\x00\x0c\x00\x00\x00\x00  
\x94\x80u7\xb5G\xe4K\x9f!\xc7\x9e%\xd7\xbeCFgI:\xc9\xeb\|\@ \xbe\x9bVJf|9  
k\_\xfbz6\xeb\x1a\x9b\xcc:\xaf{\x8d\x9b\xcc\xfd8\x94\x99\xce\xdbY\xdb\xe  
7XU\x04\xb3\xeeo~>\xe8\xb3\n\xfa^\xf7iEB\xaeqdyj\x8dRtH2OY\xb90Yk\x9e\x  
e2<a\x00\x00\x00\xa0\xb8\xfd0B\x15\x00\x00\x00(BO\xdc\xdc2\xcb\xe7\xcc  
b.\x935\xe7\xca\xe8\x1d\x92N\x95\x14\xfd0:\x17\xcaG"\xe3\xb8\xe3i\xbf\x1  
dM\xfd9L6\xe78\x89\xb409k4\x9er\xe4\xca(\x9e\xfd2\xcbJ\x8a\xa7\xfd\xcaYi<  
\xed\x93\xeb\x1a\x8dg|\xca\xb9\x8e\x92\x19G\xe9\x9cQ:\xeb(\x95\xfd5)\x93  
3Jf\x1der\x8e\x12\x19\x9f\\\xf7\xe8\xdc7\x14a}\xb52\x94\x95c\xac"AW~\xc7  
\*\x12\xc8\xc9w\xfd4g\xbf\xcf\*\xecw\x15\xfd4\xe7\x148\xfa\xbf\xcf=\xf2{\x  
8e\x14\t\xe6\xe43V\x91`N\x8e\xb1\xaa\x0c\x1d\xfd9\xb9"xd\x8dh(\xebV\x06s  
\xaa\x08\xe6\xdeVQ\x1b\xc8\x13W\xdc2\x0e\x19\xfd3\xb4\xacj\xef:\xee\x1a\x  
ba\x84\x01\x00\x00\x80\xcc2U|\xaf\xa4\x01\x00\x00\x802\xb3\xfa\x8e\x19\x  
e1\xfd0\xe8\xe82\xdc7\x9ae\x9c6h\xa9\xa4\xb3\xc5(g\x1c`k\xa5\xdc1\x94?\x93  
\xca9Jg\x1c\x13K\xfa\x9d\xb1\xa4\xfd\x19K\xfb5\x96\xfd2i4\xe9W\xfc\xe8\x  
af\x97R~\xc5\x93~\x8d\xa6\x8f\xfcz,\xe5W:K\xdd\xb1\x90\x04\xfd\xae\*CYU  
\x86\xb2\xaa\n\xe6\x14\rg\x8f~\x9cS4\x98UU\xfd8\xc8\xaf+\x83Y\x05\xfdV!

\x7f\xce\xad\x0eg\xdd\xaaPV\x95\xel\xac\xff\xf5=\xd3\xc0\xdb\x16\x97\xfa  
4\xac\x91Y#\xd9\xb5\x81P\xee\xf1%\xd7\r\x8dx\x1d\n\x00\x00\x00\x00\x05`  
\x00\x00\x00\xa0\xe0\xac\xbb\xa9=b\x9d\xd4Y\x8e\xd1\xf9\xd6\xd8\xa5\x92  
\x96J\xaa\xf6:\x17\nW,\xe5sc\x89\xa0\x19\x19\xf7\x9b\xeld@\xc3\xe3\x01  
\xc5\x92\x01\r\''\xfc\x1a\x1e\x0fh8\x11\xd0x\xda\xafx\xcaQ<\xed\xd7x\xda  
\xe7ud\x14\x80p \xa7\xca`N\x15\xa1\xac\*C\xae\xaa\xc3i\xd5F\xb2\xaa\xad  
\xc8\xa8:\x92Qm8\xab\xdaHF5\x91\xacj\*2\xb6\*\x945\x8e\xa1\xel\x13o\*!\xe  
9)#\xfb\x84\xb5\xceZ\xc7\xe4\xd616\x1a\x00\x00\x00\xf0\x06\x05`\x00\x00  
\x00\xc0cko\xab\x9dn\\\xdf;e\xccRY-\x9340\x12\x15\xba2\xe5Zc\xc7R\xbel  
\xffXP\x83\xf1\xa0o4\xe5w\x06\xe3A\r\x8e\x07^\xe9\xca\xfd\xf5\xc7t\xe4b  
r\xbd\xba\xe3\xb8\xbe"\xa3\xfbahZ\x95\xa1\xdc\xaf\x7f\x1d\xcc\xaa2\x94\x  
b5\rUi\xb7!\x9aq|\xa6\x08gx#\x7f\x8c\xf6\x8j\xad\xac\xd6\xb8>w-c\xa3\x  
01\x00\x00\x80\xc9\xc1\x0b1\x00\x00\x00`\x92\xad\xb9\xb5\xae\xc3g|\xe7  
[\xab2:\_\xd2\x02\xb17/\x0b\x99\x9c\xb1\xfd\xf1\xa0\x1d\x1c\x0b:}c!\r\x  
8e\x07\xd4?\x16\xd2@<\xa0\xc1\xf1\x80\x06\xc6\x82\x1aI\x06(\xea\xa2\$\xf  
8}V\xb5\xel\x8c\xea\*\xd2\xaa\x8ff\xd4T\x95RjEF\x8d\xd1\x8c\x1a+S\xaa\x8  
bf\xd4\\\x95\xb2!\x9f\xcb\xe3\_\xf9\xd8-c\xd6\x18\xd7\xae\xbl\x8ejs\xde  
'\x07vx\x1d\x08\x00\x00\x00(E\xbc\xc8\x02\x00\x00\x00&\x90\xb52k\xbfV  
\xbf\xc0X\xf3N\xe3\x9a\xa5\xd6\xe8|#M\xf3:\x17\xf2/\x9e\xfe\x06\xc7\x8  
2\xea\x8d\x85\xfc\xfd\xe3\x013\x18\x0f\xa9\x7f,\xa8\x81x@\xfdcA\r\x1d\x  
1d\xcb\x0c\xe0\xb5\*\x8295F\xd3j\xa8L\xa9\xbe"\xa3\xa6\xaa\xfa\xd1BqZM\x  
95)[\x1fM\xbb5\x91,S\x11JS\x9f\xa4\xb5\xc6\xea\t\xd7\xda'\x0e0\x1dx\xe  
6\xdak\x95\xf3:\x14\x00\x00\x00P\xec(\x00\x03\x00\x00\x00y\xb6ve\xf3l\x  
c9\xbd\xd81\xba\xd8Zj\$\xa9\xc5\xebL81\xd9\x9cq\xbbca\xdb9\x12\xf6u\xc7B  
\xaf\x14t{\xc7B\x1a\x1a\x0f\xa8?\x1eR&\xcb\xcb+\xa2\x04\x1cWu\xd1\x8c  
\x1a+3j\x8c\x1e\xed\$\xaeL\xa9\xa5:\xad)\xd5I\xb5\xd6\xa41\xd8\x9f\xe3\x  
1fa\xf1\x1b\xb6\xd2\xe3\x92yD6\xfb\xe8y\xcb\x87\xb622\x1a\x00\x00\x008v  
\xbc8\x02\x00\x00\x00N\xd0\x9a\xdb\xea\x17:9g\xa9\x8c\xde-\xe9\x9d\x92  
\x9a\xbd\xce\x84c\xe3Zc\x07\xc6\x83\xd9\xce\xel\x90\xaf{\$\xect\xc5B\xea  
\x89\x85\xd5\x1d\x0b\xa9;\x16\xd2X\xca\xefuD\x00o!\xe0\xb7\xaa\xafH\xab  
\xb5:\xa9\x96\xea\x94Z\xabSj9R\x1cv\xa7\xd5&L\xd0\xcf\xa8\xe9"4&i\x83\x  
95\xfd\xa5\xcf\x9a\_\x9e\xbd\xbc\xff\x19\n\x02\x00\x00\x00\x00[\xe3\xc5  
\x0f\x00\x00\x00p\x8c\xd6\xdcZ\xd7\xel\x8w\xe9\xd1\x82\xef2I\xad^g\xc2  
[Ke\x9dL\xf7h({x0\x1c\xec\x8ae|G\x8a\xbc!u\xc5\xc2\x1a\x18\x0b\*Km\x08(i  
\x95\xal\xac\xa6T\xa74\xe5\xe5xc2puJSj\x92n[m2\xdb\x18M\x07\xbd\xce\x8  
7\xb7\xa50\xd2c\xb2\xfa\xa5\xeb\x8d7.\xbbaP\xab\xd7\x81\x00\x00\x00\x80  
B\xc4\x1d\x0e\x00\x00\x00\xe0-\xac\xfeZSe \xab\x0b\x1c\xc7^\$\xab\x8b%\x  
9d.\xc9\xf1:\x17^\xe7\x1a\xf7p,\x9c\xdb?\x10\tt\x0e\x87\xd5}\xb4\x8b\x  
b7'\x16\xd2@<(\xd7\xf2\x12\x08\xc0\xeb\xd5Ud\xd4Z\x93RKUR\xad5)M\xadN  
\xa8\xbd.\xa9\xf6\xfa\x84\r\xf9xwH\x01\xdba\xacy\xd4u\xcc\xa3~\x93x\xec  
\xec\x1bF\x07\xbc\x0e\x04\x00\x00\x00\x14\x02^\xc4\x00\x00\x00\x00\xbf  
\xe3\xedu5\xe9\xb4\xff\xbd\x92}\xb7\xac\x96I:Y\x14|\x0b\x86\xb5\xd2\xe0  
x0\xb5\xaf\xbf\xc2\xd97X\x11\xe8\x8a\x85th0\xa2\xfdC\x11F5\x03\xc8\xbb  
\x97;\x87;\xea\xc7\xd5Q\x97TG\xdd\xb8:\x1a\xc6\xdd\xa6\xca\xb4\xe3pW\xa  
5\xb0\x18\xed\x91\xf4K\xc9\xfc\xd2g\x92\x8fR\x10\x06\x00\x000@\xb9\xe2\x  
a5\n\x00\x00\x00 \xe9\x89\x95\xcd\xa7\xf9L\xee2Y\xf3.IK%E\xbc\xce\x04ih  
<\x98\xd9?\x18\xf1\x1d\x1c\x0e;\x07\x07#:4\x1c\xd1\xa1\xa1\x88\x86\xc6  
\x03^G\x03P\xe6\xaa\xc3\x19M\xabM\x1e\xe9\x14\xaeM\xa8\xfdH\x81\xd86V\x  
a6\x0c\x85\xel\x82\x90\x95\xecS\xb2\xe6\x11\xc9\xf9\xe9\xa1\xd6\xde'\x  
af\xbdV9\xafC\x01\x00\x00\x00\x93\x81\x97\$\x00\x00\x00(K\x8f\xfd\xdc\xd  
8\xeaWt\xe5\x91s|\xcd\xc5\x92m\xf0:S\xb9\xcadM\xf6\x0P\$\xb5\xbb?\x1a\x  
ee\x1c\t\xfb\x0e\x0eE\xb4\x7f\xb0\x82sy\x01\x14%\x9f\xblj\xacJ\xab\x  
5:\xa9\x8e\xfa\x84:\xea\x12\xea\xa8\x1fwg6\x8e\xdb\xb0\xfd\xf5y\x9d\xaf  
\x8c\x8dKZ\c\x1lep\xdd\xec\xbd\xcb>5t\xc0\xeb@\x00\x00\x00\x00D\xeln\n  
\x00\x00\x00\xca\xc6\x86\x95\xf5\x0b\\\xeb\\\xa3\xcb\$-\x93\x14\xf4:S\x  
b9\x89%\xfc\xd9\xdd\xfd\x15\xce\x9e\xfeJg\xef`\x85\xf6\xf6G\xd49\x1c\xa



```
1\xd0\x0b\xa0\xe49\xe5\x94\xaa\x94f6\x8ckfc\\3\x1b\x12\x9a\xd54n\x1b\xa3)\x1e\x00\''\x9f+i\xa3lz\xc8\xcd\xd9\x87\xce\x1b\x1e\xd8d'
```

## Test 22

200 Expect ; File type outside MimeType

```
In [96]: test22 =b"GET /subdir1/subdir11/maoyo.giaogiao HTTP/1.1\r\nHost: Ha\r\n\r\n"
request_response(test22,ip,port)
```

```
HTTP/1.1 200 OK
Server: Go-Triton-Server-1.0
Last-Modified: Friday, 23-Oct-20 09:38:02 UTC
Content-Type: application/octet-stream
Content-Length: 4
```

Yeet

## Test 23

200, 400, 404 Expect; Concurrency test

```
In [22]: def concurrency_test(request):
s = socket()
s.connect((ip,port))
s.sendall(request)
time.sleep(2)
print(s.recv(4096).decode())
print()
```

```
In [25]: from multiprocessing import Pool
pool = Pool(processes=3)
test23 =[b"GET / HTTP/1.1\r\nHost: Ha\r\n\r\n",
         b"GET /subdir1/sue.html HTTP/1.1\r\nHost: Ha\r\n\r\n",
         b"GET index.html HTTP/1.1\r\nHost: Ha\r\n\r\n"]
results = pool.map(request_response, test23)
```

```
HTTP/1.1 200 OK
Server: Go-Triton-Server-1.0
Last-Modified: Monday, 02-Nov-20 00:10:11 UTC
Content-Type: text/html
Content-Length: 307
```

```
<html>
<head>
<title>Basic index file</title>
</head>
<body>
<h1>This is a basic index file</h1>
You can use this for testing.
<p>
<ul>
<li><a href=UCSD_Seal.png alt="UCSD Seal">UCSD seal</a>
<li><a href=kitten.jpg alt="Kitten">Kitten photo</a>
<li><a href=subdir1/>A subdirectory</a>
</ul>
</body>
</html>
```

```
HTTP/1.1 400 Bad Request
Server: Go-Triton-Server-1.0
```

```
HTTP/1.1 404 Not Found
Server: Go-Triton-Server-1.0
```