

# Wireshark #1

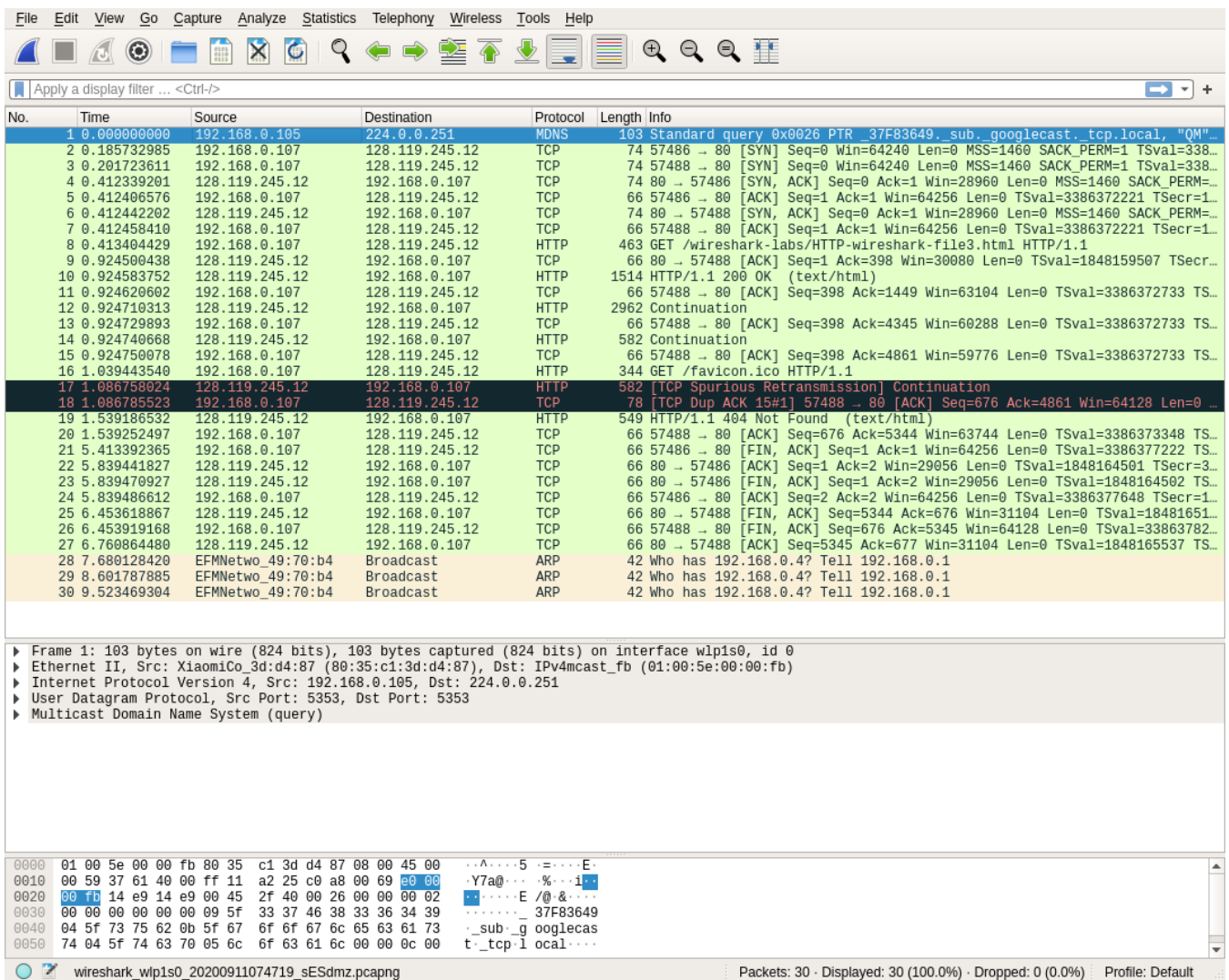


Figure 1: Sniffed packets while visiting <http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file3.html>

- (1) How many HTTP GET request messages were sent by your browser?  
[Answer] There were 2 HTTP GET requests sent by the browser: one for requesting `HTTP-wireshark-file3.html`, and the other for requesting `favicon.ico`.
- (2) How many data-containing TCP segments were needed to carry the single HTTP response?  
[Answer] There were 3 TCP segments containing data for the html file, namely #10, #12, and #14.
- (3) What is the status code and phrase associated with the response to the HTTP GET request?  
[Answer] #10: the status code was 200, and the status text was OK.  
#12: the status code was 404, and the status text was `Not found`.
- (4) Are there any HTTP status lines in the transmitted data associated with a TCP induced “Continuation”?  
[Answer] No. (Only the text `Continuation` is sent.)

No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000000	192.168.0.107	128.119.245.12	TCP	74	58132 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK PERM=1 TSV...
2	0.010038556	192.168.0.107	128.119.245.12	TCP	74	58134 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK PERM=1 TSV...
3	0.207032964	128.119.245.12	192.168.0.107	TCP	74	80 → 58132 [SYN, ACK] Seq=0 Ack=1 Win=28960 Len=0 MSS=1460 SACK...
4	0.207095876	192.168.0.107	128.119.245.12	TCP	66	58132 → 80 [ACK] Seq=1 Ack=1 Win=64256 Len=0 TSV=3388262051 T...
5	0.220756404	128.119.245.12	192.168.0.107	TCP	74	80 → 58134 [SYN, ACK] Seq=0 Ack=1 Win=28960 Len=0 MSS=1460 SACK...
6	0.220814640	192.168.0.107	128.119.245.12	TCP	66	58134 → 80 [ACK] Seq=1 Ack=1 Win=64256 Len=0 TSV=3388262065 T...
7	0.221209050	192.168.0.107	128.119.245.12	HTTP	463	GET /wireshark-labs/HTTP-wireshark-file4.html HTTP/1.1
8	0.440719557	128.119.245.12	192.168.0.107	HTTP	1138	HTTP/1.1 200 OK (text/html)
9	0.440773744	192.168.0.107	128.119.245.12	TCP	66	58134 → 80 [ACK] Seq=398 Ack=1073 Win=63232 Len=0 TSV=3388262...
10	0.443290607	128.119.245.12	192.168.0.107	TCP	66	80 → 58134 [ACK] Seq=1 Ack=398 Win=30080 Len=0 TSV=185094362...
11	0.443321672	192.168.0.107	128.119.245.12	TCP	66	[TCP Window Update] 58134 → 80 [ACK] Seq=398 Ack=1073 Win=64128...
12	0.487201275	192.168.0.107	128.119.245.12	HTTP	428	GET /pearson.png HTTP/1.1
13	0.487997742	192.168.0.107	1.214.68.2	DNS	78	Standard query 0x50a9 A manic.cs.umass.edu
14	0.488110924	192.168.0.107	1.214.68.2	DNS	78	Standard query response 0x50a9 A manic.cs.umass.edu
15	0.700248469	1.214.68.2	192.168.0.107	DNS	113	Standard query response 0x50a9 A manic.cs.umass.edu CNAME gaia...
16	0.703067241	128.119.245.12	192.168.0.107	HTTP	2902	HTTP/1.1 200 OK (PNG)[Unresembled Packet]
17	0.703936632	192.168.0.107	128.119.245.12	TCP	66	58134 → 80 [ACK] Seq=752 Ack=3969 Win=61312 Len=0 TSV=3388262...
18	0.704051075	128.119.245.12	192.168.0.107	HTTP	788	Continuation
19	0.704083067	192.168.0.107	128.119.245.12	TCP	66	58134 → 80 [ACK] Seq=752 Ack=4683 Win=60672 Len=0 TSV=3388262...
20	0.934418684	192.168.0.107	216.58.197.100	TCP	66	53644 → 80 [ACK] Seq=1 Ack=1 Win=501 Len=0 TSV=2041270907 Tse...
21	0.934438688	216.58.197.100	192.168.0.107	TCP	66	[TCP Dup ACK 3661] 58136 → 80 [ACK] Seq=329 Ack=14481 Win=63104...
22	1.003021563	192.168.0.107	128.119.245.12	DNS	150	Standard query response 0x5108 AAAA manic.cs.umass.edu CNAME ga...
23	1.009391766	192.168.0.107	128.119.245.12	TCP	74	58136 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK PERM=1 TSV...
24	1.230619413	128.119.245.12	192.168.0.107	TCP	74	80 → 58136 [SYN, ACK] Seq=0 Ack=1 Win=28960 Len=0 MSS=1460 SACK...
25	1.230697983	192.168.0.107	128.119.245.12	TCP	66	58136 → 80 [ACK] Seq=1 Ack=1 Win=64256 Len=0 TSV=3388263083 T...
26	1.230927074	192.168.0.107	128.119.245.12	HTTP	394	GET /kurose/cover/5th.ed.jpg HTTP/1.1
27	1.473148086	128.119.245.12	192.168.0.107	HTTP	5858	HTTP/1.1 200 OK (JPEG JFIF image)[Unresembled Packet]
28	1.473210256	192.168.0.107	128.119.245.12	TCP	66	58136 → 80 [ACK] Seq=329 Ack=5793 Win=58496 Len=0 TSV=3388263...
29	1.473303464	128.119.245.12	192.168.0.107	HTTP	1514	Continuation
30	1.473323992	192.168.0.107	128.119.245.12	TCP	66	58136 → 80 [ACK] Seq=329 Ack=7241 Win=57088 Len=0 TSV=3388263...
31	1.474129355	128.119.245.12	192.168.0.107	HTTP	4410	Continuation
32	1.474160392	192.168.0.107	128.119.245.12	TCP	66	58136 → 80 [ACK] Seq=329 Ack=11585 Win=59008 Len=0 TSV=338826...
33	1.474200540	128.119.245.12	192.168.0.107	HTTP	1514	Continuation
34	1.474211370	192.168.0.107	128.119.245.12	TCP	66	58136 → 80 [ACK] Seq=329 Ack=13033 Win=57600 Len=0 TSV=338826...
35	1.474295482	128.119.245.12	192.168.0.107	HTTP	1514	Continuation
36	1.474312911	192.168.0.107	128.119.245.12	TCP	66	58136 → 80 [ACK] Seq=329 Ack=14481 Win=63104 Len=0 TSV=338826...
37	1.474325150	128.119.245.12	192.168.0.107	TCP	66	80 → 58136 [ACK] Seq=1 Ack=329 Win=30080 Len=0 TSV=185090405...
38	1.474333766	192.168.0.107	128.119.245.12	TCP	66	[TCP Dup ACK 3661] 58136 → 80 [ACK] Seq=329 Ack=14481 Win=63104...
39	1.703747288	128.119.245.12	192.168.0.107	HTTP	2902	Continuation
40	1.703794574	192.168.0.107	128.119.245.12	TCP	66	58136 → 80 [ACK] Seq=329 Ack=17377 Win=61956 Len=0 TSV=338826...
41	1.704009292	128.119.245.12	192.168.0.107	HTTP	2902	Continuation
42	1.704038163	192.168.0.107	128.119.245.12	TCP	66	58136 → 80 [ACK] Seq=329 Ack=20273 Win=61956 Len=0 TSV=338826...
43	1.704060935	128.119.245.12	192.168.0.107	HTTP	1514	Continuation
44	1.704073531	192.168.0.107	128.119.245.12	TCP	66	58136 → 80 [ACK] Seq=329 Ack=21721 Win=63104 Len=0 TSV=338826...
45	1.704304503	128.119.245.12	192.168.0.107	HTTP	2902	Continuation
46	1.704323337	192.168.0.107	128.119.245.12	TCP	66	58136 → 80 [ACK] Seq=329 Ack=24617 Win=61956 Len=0 TSV=338826...
47	1.704798185	128.119.245.12	192.168.0.107	HTTP	4410	Continuation
48	1.704823411	192.168.0.107	128.119.245.12	TCP	66	58136 → 80 [ACK] Seq=329 Ack=28961 Win=59008 Len=0 TSV=338826...
49	1.704891726	128.119.245.12	192.168.0.107	HTTP	2902	Continuation
50	1.705010947	192.168.0.107	128.119.245.12	TCP	66	58136 → 80 [ACK] Seq=329 Ack=31857 Win=61956 Len=0 TSV=338826...
51	1.705281989	128.119.245.12	192.168.0.107	HTTP	2902	Continuation
52	1.705305511	192.168.0.107	128.119.245.12	TCP	66	58136 → 80 [ACK] Seq=329 Ack=34753 Win=61956 Len=0 TSV=338826...
53	1.705571316	128.119.245.12	192.168.0.107	HTTP	2902	Continuation
54	1.705587050	192.168.0.107	128.119.245.12	TCP	66	58136 → 80 [ACK] Seq=329 Ack=37649 Win=61956 Len=0 TSV=338826...
55	1.705953835	128.119.245.12	192.168.0.107	HTTP	4410	Continuation
56	1.705990632	192.168.0.107	128.119.245.12	TCP	66	58136 → 80 [ACK] Seq=329 Ack=41993 Win=72832 Len=0 TSV=338826...
57	1.706101590	128.119.245.12	192.168.0.107	HTTP	1514	Continuation
58	1.706125202	192.168.0.107	128.119.245.12	TCP	66	58136 → 80 [ACK] Seq=329 Ack=43441 Win=75776 Len=0 TSV=338826...
59	1.935323217	128.119.245.12	192.168.0.107	HTTP	5858	Continuation
60	1.935381393	192.168.0.107	128.119.245.12	TCP	66	58136 → 80 [ACK] Seq=329 Ack=49233 Win=87296 Len=0 TSV=338826...
61	1.935634506	128.119.245.12	192.168.0.107	HTTP	4410	Continuation
62	1.935651240	192.168.0.107	128.119.245.12	TCP	66	58136 → 80 [ACK] Seq=329 Ack=53577 Win=90080 Len=0 TSV=338826...
63	1.935900893	128.119.245.12	192.168.0.107	HTTP	2902	Continuation
64	1.935917727	192.168.0.107	128.119.245.12	TCP	66	58136 → 80 [ACK] Seq=329 Ack=56473 Win=101760 Len=0 TSV=33882...
65	1.936184706	128.119.245.12	192.168.0.107	HTTP	2902	Continuation
66	1.936204889	192.168.0.107	128.119.245.12	TCP	66	58136 → 80 [ACK] Seq=329 Ack=59369 Win=107648 Len=0 TSV=33882...
67	1.936461008	128.119.245.12	192.168.0.107	HTTP	2902	Continuation
68	1.936483977	192.168.0.107	128.119.245.12	TCP	66	58136 → 80 [ACK] Seq=329 Ack=62265 Win=113408 Len=0 TSV=33882...
69	1.936724329	128.119.245.12	192.168.0.107	HTTP	2902	Continuation
70	1.936748392	192.168.0.107	128.119.245.12	TCP	66	58136 → 80 [ACK] Seq=329 Ack=65161 Win=119168 Len=0 TSV=33882...
71	1.936987056	128.119.245.12	192.168.0.107	HTTP	1514	Continuation
72	1.937005408	192.168.0.107	128.119.245.12	TCP	92	40936 → 80 [ACK] Seq=329 Ack=66609 Win=122112 Len=0 TSV=33882...
73	1.937032921	128.119.245.12	192.168.0.107	HTTP	1514	Continuation
74	1.937046224	192.168.0.107	128.119.245.12	TCP	66	58136 → 80 [ACK] Seq=329 Ack=68057 Win=124928 Len=0 TSV=33882...
75	1.937457008	128.119.245.12	192.168.0.107	HTTP	4410	Continuation
76	1.937477311	192.168.0.107	128.119.245.12	TCP	66	58136 → 80 [ACK] Seq=329 Ack=72401 Win=133632 Len=0 TSV=33882...
77	1.937717297	128.119.245.12	192.168.0.107	HTTP	2902	Continuation
78	1.937737449	192.168.0.107	128.119.245.12	TCP	66	58136 → 80 [ACK] Seq=329 Ack=75297 Win=139392 Len=0 TSV=33882...
79	1.938087297	128.119.245.12	192.168.0.107	HTTP	4410	Continuation
80	1.938105722	192.168.0.107	128.119.245.12	TCP	66	58136 → 80 [ACK] Seq=329 Ack=79641 Win=148096 Len=0 TSV=33882...
81	1.939131118	128.119.245.12	192.168.0.107	HTTP	8754	Continuation
82	1.939171251	192.168.0.107	128.119.245.12	TCP	66	58136 → 80 [ACK] Seq=329 Ack=88329 Win=160512 Len=0 TSV=33882...
83	1.939261944	128.119.245.12	192.168.0.107	HTTP	1514	Continuation
84	1.939281095	192.168.0.107	128.119.245.12	TCP	66	58136 → 80 [ACK] Seq=329 Ack=89777 Win=159104 Len=0 TSV=33882...
85	1.939505204	128.119.245.12	192.168.0.107	HTTP	4410	Continuation
86	1.939618149	192.168.0.107	128.119.245.12	TCP	66	58136 → 80 [ACK] Seq=329 Ack=94121 Win=166656 Len=0 TSV=33882...
87	1.940078759	128.119.245.12	192.168.0.107	HTTP	5858	Continuation
88	1.940324774	192.168.0.107	128.119.245.12	TCP	66	58136 → 80 [ACK] Seq=329 Ack=99913 Win=166656 Len=0 TSV=33882...
89	1.940438132	128.119.245.12	192.168.0.107	HTTP	1471	Continuation
90	1.940471648	192.168.0.107	128.119.245.12	TCP	66	58136 → 80 [ACK] Seq=329 Ack=101318 Win=169472 Len=0 TSV=3388...
91	2.639879992	142.82.112.26	192.168.0.107	TLV.1.2	92	Application Data
92	2.640291222	192.168.0.107	142.82.112.26	TLV.1.2	96	Application Data
93	2.855546976	128.119.245.12	192.168.0.107	TCP	66	58132 → 80 [FIN, ACK] Seq=27 Ack=31 Win=69 Len=0 TSV=2273696383 T...
94	5.522639326	192.168.0.107	128.119.245.12	TCP	66	58132 → 80 [FIN, ACK] Seq=1 Ack=1 Win=64256 Len=0 TSV=3388262...
95	5.522639376	192.168.0.107	34.215.78.214	TCP	66	50108 → 443 [ACK] Seq=1 Ack=1 Win=501 Len=0 TSV=645022324 Tse...
96	5.650799270	128.119.245.12	192.168.0.107	TCP	66	80 → 58132 [FIN, ACK] Seq=1 Ack=2 Win=29056 Len=0 TSV=18509504...
97	5.650800055	128.119.245.12	192.168.0.107	TCP	66	58134 → 80 [ACK] Seq=329 Ack=2 Win=64256 Len=0 TSV=3388262...
98	5.701806972	34.215.78.214	192.168.0.107	TCP	66	[TCP ACK unseq segment] 443 → 50108 [ACK] Seq=1 Ack=2 Win=1...
99	5.711387849	128.119.245.12	192.168.0.107	TCP	66	80 → 58134 [FIN, ACK] Seq=4683 Ack=752 Win=31104 Len=0 TSV=18...
100	5.711682411	192.168.0.107	128.119.245.12	TCP	66	58134 → 80 [FIN, ACK] Seq=752 Ack=4684 Win=64128 Len=0 TSV=18...
101	5.927338370	128.119.245.12	192.168.0.107	TCP	66	80 → 58134 [ACK] Seq=4684 Ack=753 Win=31104 Len=0 TSV=18509504...
102	2.470955702	128.119.245.12	192.168.0.107	TCP	66	58132 → 80 [FIN, ACK] Seq=101318 Ack=329 Win=30080 Len=0 TSV=...
103	6.479302021	192.168.0.107	128.119.245.12	TCP	66	58136 → 80 [FIN, ACK] Seq=329 Ack=101318 Win=169472 Len=0 TSV=...
104	6.710257390	128.119.245.12	192.168.0.107	TCP	66	80 → 58136 [ACK] Seq=101318 Ack=330 Win=30080 Len=0 TSV=1850...
105	11.74379119	192.168.0.107	216.58.197.100	TCP	66	[TCP Dup ACK 3661] 58136 → 80 [ACK] Seq=1 Ack=1 Win=501 Len=0 T...
106	2.453670789	192.168.0.107	34.215.78.214	TCP	66	[TCP ACK unseq segment] 80 → 53644 [ACK] ...
107	15.782205459	192.168.0.107	34.215.78.214	TCP	66	[TCP Dup ACK 95#1] 50108 → 443 [ACK] Seq=1 Ack=1 Win=501 Len=0 T...
108	15.942420321	34.215.78.214	192.168.0.107	TCP	66	[TCP Dup ACK 98#1] [TCP ACKED unseq segment] 443 → 50108 [ACK] ...
Source: 192.168.0.107 Destination: 128.119.245.12						
Transmission Control Protocol, Src Port: 58132, Dst Port: 80, Seq: 0, Len: 0						
Source Port: 58132 Destination Port: 80						
(Seq=0, Len=0)						
[TCP Segment Len=61]						
0000	30 3c 81 69 40 50 61 83	3f bd 06 06 06 00 45 00	40 10 10 10 10 10 10 10	C-----E		
0010	50 0c 81 69 40 50 61 83	06 82 bb c9 a8 00 60 80	77 <10 10 10 10 10 10 10 10	-----k-w		
0020	50 0c 81 69 40 50 61 83	21 54 a7 a1 00 00 00 00	80 82 -----PIT			
0030	f4 f0 da 53 00 06 82 04					

The image shows a Wireshark packet capture interface. The top menu bar includes File, Edit, View, Go, Capture, Analyze, Statistics, Telephony, Wireless, Tools, and Help. Below the menu is a toolbar with various icons. The main display area shows a list of captured packets, with the first 89 packets displayed. The packets are filtered by 'http'. The columns shown are No., Time, Source, Destination, Protocol, and Length. The first packet (No. 7) is an HTTP GET request for 'http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file4.html'. The subsequent packets (No. 8-89) are HTTP responses, including 200 OK (text/html), 200 OK (PNG), and 200 OK (JPEG). The bottom pane shows the details of the selected packet (No. 89), including the Transmission Control Protocol (TCP) and the Hypertext Transfer Protocol (HTTP) sections. The TCP section shows the source port as 58134 and the destination port as 80. The HTTP section shows the status as 200 OK and the content type as text/html.

No.	Time	Source	Destination	Protocol	Length	Info
7	0.221209050	192.168.0.107	128.119.245.12	HTTP	463	GET /wireshark-labs/HTTP-wireshark-file4.html HTTP/1.1
8	0.440719557	128.119.245.12	192.168.0.107	HTTP	1138	HTTP/1.1 200 OK (text/html)
12	0.487201275	192.168.0.107	128.119.245.12	HTTP	420	GET /pearson.png HTTP/1.1
16	0.703867241	128.119.245.12	192.168.0.107	HTTP	2962	HTTP/1.1 200 OK (PNG)[Unresembled Packet]
18	0.704051075	128.119.245.12	192.168.0.107	HTTP	780	Continuation
26	1.239278074	192.168.0.107	128.119.245.12	HTTP	394	GET /~kurose/cover_5th_ed.jpg HTTP/1.1
27	1.473148986	128.119.245.12	192.168.0.107	HTTP	5858	HTTP/1.1 200 OK (JPEG JFIF image)[Unresembled Packet]
29	1.473303464	128.119.245.12	192.168.0.107	HTTP	1514	Continuation
31	1.474129355	128.119.245.12	192.168.0.107	HTTP	4410	Continuation
33	1.474200540	128.119.245.12	192.168.0.107	HTTP	1514	Continuation
35	1.474295482	128.119.245.12	192.168.0.107	HTTP	1514	Continuation
39	1.703747288	128.119.245.12	192.168.0.107	HTTP	2962	Continuation
41	1.704009292	128.119.245.12	192.168.0.107	HTTP	2962	Continuation
43	1.704060535	128.119.245.12	192.168.0.107	HTTP	1514	Continuation
45	1.704304503	128.119.245.12	192.168.0.107	HTTP	2962	Continuation
47	1.704798185	128.119.245.12	192.168.0.107	HTTP	4410	Continuation
49	1.704991726	128.119.245.12	192.168.0.107	HTTP	2962	Continuation
51	1.705281989	128.119.245.12	192.168.0.107	HTTP	2962	Continuation
53	1.705571316	128.119.245.12	192.168.0.107	HTTP	2962	Continuation
55	1.705953835	128.119.245.12	192.168.0.107	HTTP	4410	Continuation
57	1.706101590	128.119.245.12	192.168.0.107	HTTP	1514	Continuation
59	1.935323217	128.119.245.12	192.168.0.107	HTTP	5858	Continuation
61	1.935634506	128.119.245.12	192.168.0.107	HTTP	4410	Continuation
63	1.935900383	128.119.245.12	192.168.0.107	HTTP	2962	Continuation
65	1.936184706	128.119.245.12	192.168.0.107	HTTP	2962	Continuation
67	1.936461008	128.119.245.12	192.168.0.107	HTTP	2962	Continuation
69	1.936724329	128.119.245.12	192.168.0.107	HTTP	2962	Continuation
71	1.936987056	128.119.245.12	192.168.0.107	HTTP	1514	Continuation
73	1.937032921	128.119.245.12	192.168.0.107	HTTP	1514	Continuation
75	1.937457608	128.119.245.12	192.168.0.107	HTTP	4410	Continuation
77	1.937717297	128.119.245.12	192.168.0.107	HTTP	2962	Continuation
79	1.938087267	128.119.245.12	192.168.0.107	HTTP	4410	Continuation
81	1.939131118	128.119.245.12	192.168.0.107	HTTP	8754	Continuation
83	1.939261944	128.119.245.12	192.168.0.107	HTTP	1514	Continuation
85	1.939585204	128.119.245.12	192.168.0.107	HTTP	4410	Continuation
87	1.940078759	128.119.245.12	192.168.0.107	HTTP	5858	Continuation
89	1.940438132	128.119.245.12	192.168.0.107	HTTP	1471	Continuation

Source: 192.168.0.107  
Destination: 128.119.245.12  
Transmission Control Protocol, Src Port: 58134, Dst Port: 80, Seq: 1, Ack: 1, Len: 397  
Source Port: 58134  
Destination Port: 80  
[Stream index: 1]  
[TCP Segment Len: 397]

0020 f5 0c e3 16 00 50 5a 97 b0 97 fd 8d 1d e0 80 18 .....PZ.....  
0030 01 f6 06 3a 00 00 01 01 08 0a c9 f4 c6 b1 6e 45 .....nE  
0040 82 7d 47 45 54 20 2f 77 69 72 65 73 68 b1 72 6b ..}GET /w ireshark  
0050 2d 6c 61 62 73 2f 48 54 54 50 2d 77 69 72 65 73 ..-labs/HT TP-wires  
0060 68 61 72 6b 2d 66 69 6c 65 34 2e 68 74 6d 6c 20 hark-fil e4.html  
0070 48 54 54 50 2f 31 2e 31 0d 0a 48 6f 73 74 3a 20 HTTP/1.1 -Host:  
0080 67 61 69 61 2e 63 73 2e 75 6d 61 73 73 2e 65 64 gaia.cs. umass.ed

Stream index (tcp.stream) Packets: 108 · Displayed: 37 (34.3%) · Dropped: 0 (0.0%) Profile: Default

Figure 3: Sniffed packets while visiting <http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file4.html>, filtering the http responses only

- (5) How many HTTP GET request messages were sent by your browser? To which Internet addresses were these GET requests sent?

[Answer] There are 3 HTTP GET request messages were sent by the browser: for requesting `HTTP-wireshark-file4.html`, `pearson.png`, and `cover_5th_ed.jpg`. All 3 requests are sent to the IP address `128.119.245.12`.

The reason why the browser did not try to download the favicon, which is a different behavior from the result of (1), is because of the cache feature of the browser.

- (6) Can you tell whether your browser downloaded the two images serially,

or whether they were downloaded from the two web sites in parallel? Explain.

[Answer] They were downloaded serially. We can identify which requests and continuations correspond to which file streams via seeing the stream index. The HTTP response #16 and Continuation #18 were indexed by the stream index 1, and the HTTP response #27 and the Continuations after #18, which are #29, #31, ..., #89, were indexed by the stream index 3. Thus, we notice that the browser started to download `cover_5th_ed.jpg` from `/~kurose/cover_5th_ed.jpg` after downloading `pearson.png` completely. Hence, the download of two files was done serially.