

1. List 3 different protocols that appear in the protocol column in the unfiltered packet-listing window in step 7 above.
 - a. HTTP
 - b. TCP
 - c. ICMPv6

No.	Time	Source	Destination	Protocol	Length	Info
772	92.139969000	10.0.0.2	128.119.245.12	HTTP	478	GET /wireshark-labs/INTRO-wireshark-
773	92.140766000	128.119.245.12	10.0.0.2	TCP	74	80->37390 [SYN, ACK] Seq=0 Ack=1 Win=
774	92.140777000	10.0.0.2	128.119.245.12	TCP	66	37390->80 [ACK] Seq=1 Ack=1 Win=29312
775	92.239305000	128.119.245.12	10.0.0.2	TCP	66	80->37391 [ACK] Seq=1 Ack=413 Win=3008
776	92.240274000	128.119.245.12	10.0.0.2	HTTP	506	HTTP/1.1 200 OK (text/html)
777	92.240281000	10.0.0.2	128.119.245.12	TCP	66	37391->80 [ACK] Seq=413 Ack=441 Win=30
778	92.311966000	10.0.0.2	128.119.245.12	HTTP	424	GET /favicon.ico HTTP/1.1
779	92.409499000	128.119.245.12	10.0.0.2	HTTP	552	HTTP/1.1 404 Not Found (text/html)
780	92.409517000	10.0.0.2	128.119.245.12	TCP	66	37391->80 [ACK] Seq=771 Ack=927 Win=30
781	92.470085000	2601:1c0:8801:6d9a:8cc2607:f8b0:400a:806::2	2601:1c0:8801:6d9a:8cc2607:f8b0:400a:806::2	TCP	86	[TCP Keep-Alive] 39649-443 [ACK] Seq=
782	92.485257000	2601:1c0:8801:6d9a:8cc2607:f8b0:400a:806::2	2601:1c0:8801:6d9a:8cc2607:f8b0:400a:806::2	TCP	86	[TCP Keep-Alive ACK] 443-39649 [ACK]
783	92.534088000	2601:1c0:8801:6d9a:8cc2607:f8b0:400a:806::2	2601:1c0:8801:6d9a:8cc2607:f8b0:400a:806::2	TCP	86	[TCP Keep-Alive] 41560-5228 [ACK] Seq=
784	92.562388000	2601:1c0:8801:6d9a:8cc2607:f8b0:400a:806::2	2601:1c0:8801:6d9a:8cc2607:f8b0:400a:806::2	TCP	86	[TCP Keep-Alive ACK] 5228-41560 [ACK]
785	94.551774000	fe80::226:f3ff:fe5:6f ff02::1	fe80::226:f3ff:fe5:6f ff02::1	ICMPv6	150	Router Advertisement from 00:26:f3:f
786	95.606114000	2601:1c0:8801:6d9a:8cc2607:f8b0:400a:806::2	2601:1c0:8801:6d9a:8cc2607:f8b0:400a:806::2	TCP	86	[TCP Keep-Alive] 49279-443 [ACK] Seq=
787	95.606123000	2601:1c0:8801:6d9a:8cc2607:f8b0:400a:806::2	2601:1c0:8801:6d9a:8cc2607:f8b0:400a:806::2	TCP	86	[TCP Keep-Alive] 49278-443 [ACK] Seq=
788	95.621180000	2601:1c0:8801:6d9a:8cc2607:f8b0:400a:806::2	2601:1c0:8801:6d9a:8cc2607:f8b0:400a:806::2	TCP	86	[TCP Keep-Alive ACK] 443-49279 [ACK]
789	95.625255000	2601:1c0:8801:6d9a:8cc2607:f8b0:400a:806::2	2601:1c0:8801:6d9a:8cc2607:f8b0:400a:806::2	TCP	86	[TCP Keep-Alive ACK] 443-49278 [ACK]
790	95.862110000	2601:1c0:8801:6d9a:8cc2607:f8b0:400a:806::2	2601:1c0:8801:6d9a:8cc2607:f8b0:400a:806::2	TCP	86	[TCP Keep-Alive] 59622-443 [ACK] Seq=
791	95.877232000	2601:1c0:8801:6d9a:8cc2607:f8b0:400a:806::2	2601:1c0:8801:6d9a:8cc2607:f8b0:400a:806::2	TCP	86	[TCP Keep-Alive ACK] 443-59622 [ACK]
792	96.118091000	2601:1c0:8801:6d9a:8cc2607:f8b0:400a:806::2	2601:1c0:8801:6d9a:8cc2607:f8b0:400a:806::2	TCP	86	[TCP Keep-Alive] 39654-443 [ACK] Seq=
793	96.133365000	2601:1c0:8801:6d9a:8cc2607:f8b0:400a:806::2	2601:1c0:8801:6d9a:8cc2607:f8b0:400a:806::2	TCP	86	[TCP Keep-Alive ACK] 443-39654 [ACK]
794	96.950086000	fe80::d63d:7eff:feb6:6 fe80::226:f3ff:fe5:6f	fe80::d63d:7eff:feb6:6 fe80::226:f3ff:fe5:6f	ICMPv6	86	Neighbor Solicitation for fe80::226:f
795	96.950594000	fe80::226:f3ff:fe5:6f fe80::d63d:7eff:feb6:6	fe80::226:f3ff:fe5:6f fe80::d63d:7eff:feb6:6	ICMPv6	78	Neighbor Advertisement fe80::226:f3f
796	97.413879000	128.119.245.12	10.0.0.2	TCP	66	80->37391 [FIN, ACK] Seq=927 Ack=771 W
797	97.450083000	10.0.0.2	128.119.245.12	TCP	66	37391->80 [ACK] Seq=771 Ack=928 Win=30
798	97.931646000	fe80::226:f3ff:fe5:6f ff02::1	fe80::226:f3ff:fe5:6f ff02::1	ICMPv6	150	Router Advertisement from 00:26:f3:f

2. How long did it take from when the HTTP GET message was sent until the HTTP OK reply was received?
 - a. 0.1003 seconds

772	16:29:44.527624000	10.0.0.2	128.119.245.12	HTTP	478	GET /wireshark-labs/INTRO-wireshark-file1.html HTTP/1.1
776	16:29:44.627929000	128.119.245.12	10.0.0.2	HTTP	506	HTTP/1.1 200 OK (text/html)

3. What is the Internet address of the gaia.cs.umass.edu? What is the Internet address of your computer?
 - a. Gaia.cs.umass.edu: 128.119.245.12
 - b. My computer: 10.0.0.2
4. Print the two HTTP messages (GET and OK) referred to in question 2 above.

No.	Time	Source	Destination	Protocol	Length	Info
772	16:29:44.527624000	10.0.0.2	128.119.245.12	HTTP	478	GET /wireshark-labs/INTRO-wireshark-file1.html HTTP/1.1

Frame 772: 478 bytes on wire (3824 bits), 478 bytes captured (3824 bits) on interface 0
 Ethernet II, Src: Micro-St_bc:6b:1c (d4:3d:7e:bc:6b:1c), Dst: SmcNetwo_f5:6f:e2 (00:26:f3:f5:6f:e2)
 Internet Protocol Version 4, Src: 10.0.0.2 (10.0.0.2), Dst: 128.119.245.12 (128.119.245.12)

Version: 4
 Header Length: 20 bytes
 Differentiated Services Field: 0x00 (DSCP 0x00: Default; ECN: 0x00: Not-ECT (Not ECN-Capable Transport))
 Total Length: 464
 Identification: 0x7197 (29079)
 Flags: 0x02 (Don't Fragment)
 Fragment offset: 0
 Time to live: 64
 Protocol: TCP (6)
 Header checksum: 0x480b [validation disabled]
 Source: 10.0.0.2 (10.0.0.2)
 Destination: 128.119.245.12 (128.119.245.12)
 [Source GeoIP: Unknown]
 [Destination GeoIP: Unknown]
 Transmission Control Protocol, Src Port: 37391 (37391), Dst Port: 80 (80), Seq: 1, Ack: 1, Len: 412
 Hypertext Transfer Protocol
 GET /wireshark-labs/INTRO-wireshark-file1.html HTTP/1.1\r\n
 Host: gaia.cs.umass.edu\r\n
 Connection: keep-alive\r\n
 Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0.8\r\n
 Upgrade-Insecure-Requests: 1\r\n
 User-Agent: Mozilla/5.0 (X11; Linux x86_64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/49.0.2623.110 Safari/537.36\r\n
 Accept-Encoding: gzip, deflate, sdch\r\n
 Accept-Language: en-US,en;q=0.8\r\n
 \r\n
 [Full request URI: http://gaia.cs.umass.edu/wireshark-labs/INTRO-wireshark-file1.html]
 [HTTP request 1/2]
 [Response in frame: 776]
 [Next request in frame: 778]

GET

No.	Time	Source	Destination	Protocol	Length	Info
776	16:29:44.627929000	128.119.245.12	10.0.0.2	HTTP	506	HTTP/1.1 200 OK (text/html)

Frame 776: 506 bytes on wire (4048 bits), 506 bytes captured (4048 bits) on interface 0
 Ethernet II, Src: SmcNetwo_f5:6f:e2 (00:26:f3:f5:6f:e2), Dst: Micro-St_bc:6b:1c (d4:3d:7e:bc:6b:1c)
 Internet Protocol Version 4, Src: 128.119.245.12 (128.119.245.12), Dst: 10.0.0.2 (10.0.0.2)
 Version: 4
 Header Length: 20 bytes
 Differentiated Services Field: 0x20 (DSCP 0x08: Class Selector 1; ECN: 0x00: Not-ECT (Not ECN-Capable Transport))
 Total Length: 492
 Identification: 0x81e3 (33251)
 Flags: 0x02 (Don't Fragment)
 Fragment offset: 0
 Time to live: 47
 Protocol: TCP (6)
 Header checksum: 0x4883 [validation disabled]
 Source: 128.119.245.12 (128.119.245.12)
 Destination: 10.0.0.2 (10.0.0.2)
 [Source GeoIP: Unknown]
 [Destination GeoIP: Unknown]
 Transmission Control Protocol, Src Port: 80 (80), Dst Port: 37391 (37391), Seq: 1, Ack: 413, Len: 440
 Hypertext Transfer Protocol
 HTTP/1.1 200 OK\r\n
 Date: Mon, 04 Apr 2016 23:29:44 GMT\r\n
 Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.1e-fips PHP/5.4.16 mod_perl/2.0.9dev Perl/v5.16.3\r\n
 Last-Modified: Mon, 04 Apr 2016 05:59:02 GMT\r\n
 ETag: "51-52fa26cea06be"\r\n
 Accept-Ranges: bytes\r\n
 Content-Length: 81\r\n
 Keep-Alive: timeout=5, max=100\r\n
 Connection: Keep-Alive\r\n
 Content-Type: text/html; charset=UTF-8\r\n
 \r\n
 [HTTP response 1/2]
 [Time since request: 0.100305000 seconds]
 [Request in frame: 772]
 [Next request in frame: 778]
 [Next response in frame: 779]
 Line-based text data: text/html

OK