SAMSUNG SW ACADEMY FOR YOUTH

함께가요 미래로! Enabling People

계절학기 자기주도 학습

CSR vs SSR

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함께가요 미래로!
Enabling People
Education for Future Generations

CSR vs SSR

최 인 국 Project consultant

- Cymer(2006, 10 ~) 반도체 장비 모니터링 시스템 개발
- Future System(2013, 05 ~) 네트워크 보안 장비 개발
- ESTMOB(2014, 06 ~) 파일 전송 솔루션
- 프리랜서 (2017, 03 ~) 카메라 제어, 출퇴근 시스템 등 개발

CSR(Client side rendering)

- ✓ Single page application
- ✓ Java script
- ✓ Vue, React 등
- ✓ 뷰(HTML) 를 웹-브라우저에서 동적으로 생성

SSR(Server side rendering)

- ✓ Multi page application
- ✓ Java script를 제외한 대부분 Framework
- ✓ PHP, ASP, Java spring 등
- ✓ 웹-서버가 뷰를 생성하여 웹-브라우저에게 보냄

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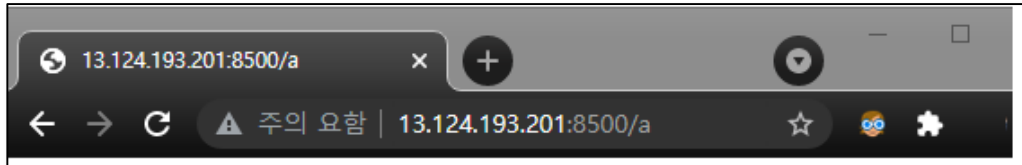
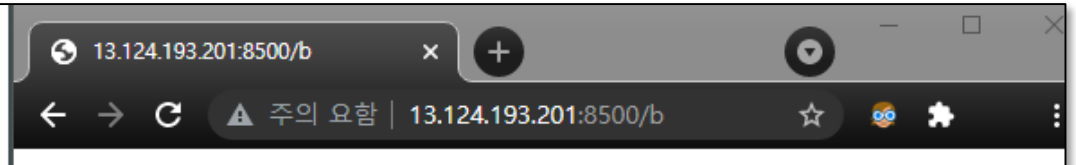
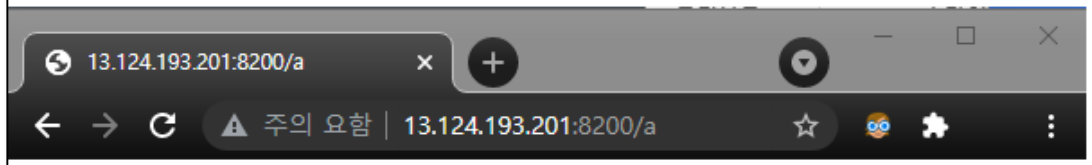
SSR, CSR 웹 서비스



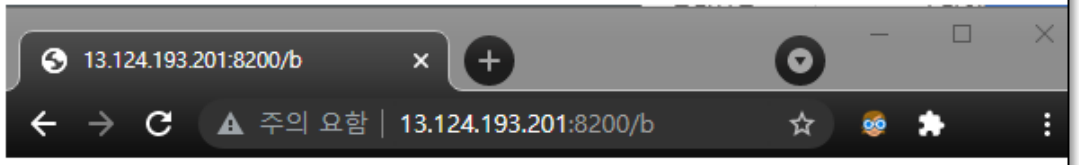
server side rendering : page A



server side rendering : page B



client side rendering : page A



client side rendering : page B

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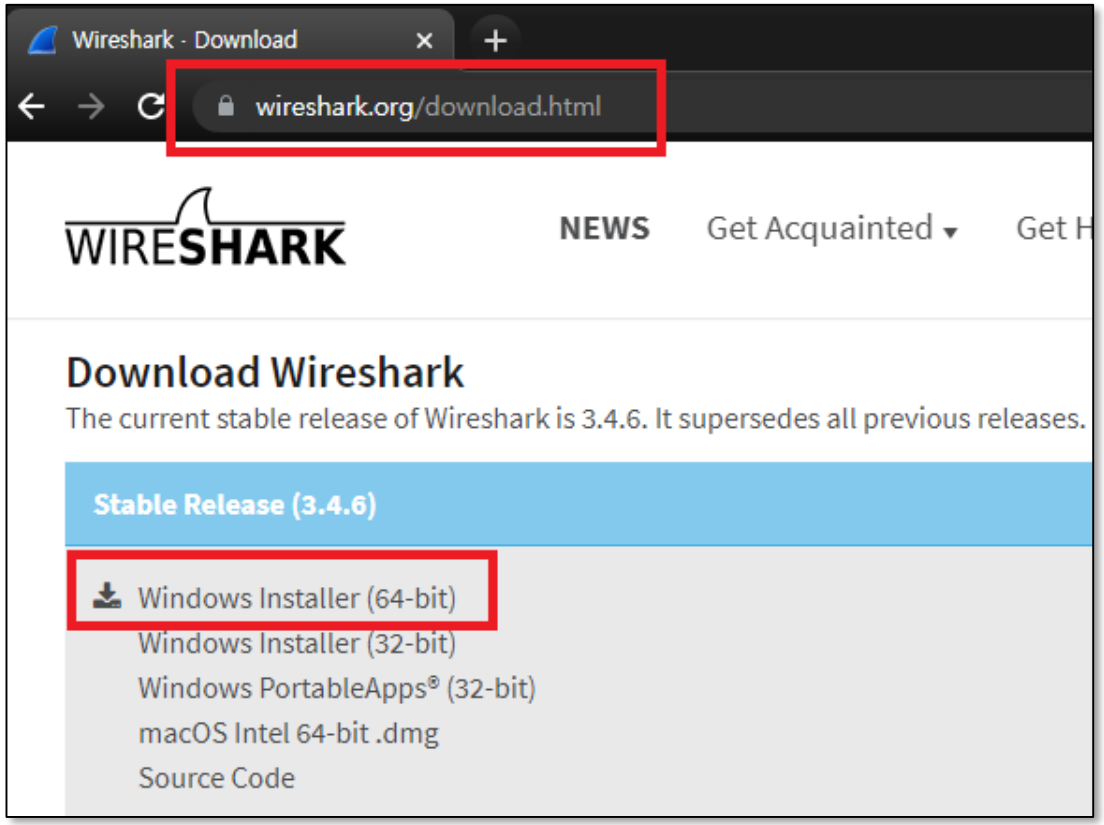
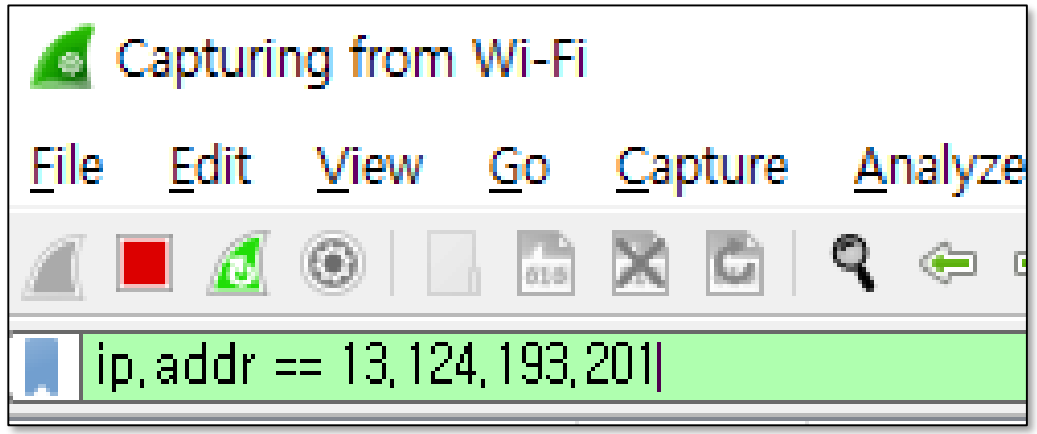
Wire shark





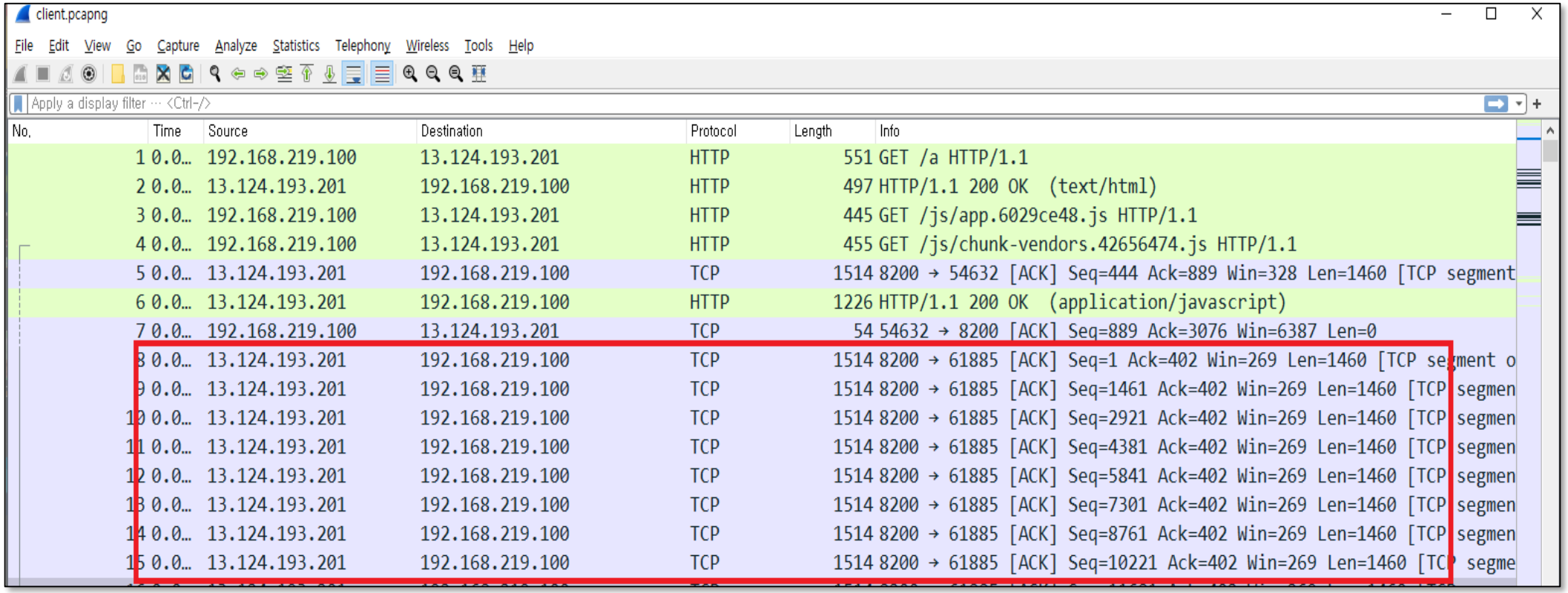
SSR

1	0.0…	192.168.219.100	13.124.193.201	TCP	54 61885 → 8200 [FIN, ACK] Seq=1 Ack=1 Win=3768 Len=0
2	0.0…	192.168.219.100	13.124.193.201	TCP	54 53547 → 8200 [FIN, ACK] Seq=1 Ack=1 Win=513 Len=0
3	0.0…	192.168.219.100	13.124.193.201	TCP	54 54632 → 8200 [FIN, ACK] Seq=1 Ack=1 Win=6387 Len=0
4	0.0…	192.168.219.100	13.124.193.201	TCP	66 60194 → 8500 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 WS=
5	0.0…	13.124.193.201	192.168.219.100	TCP	54 8200 → 54632 [RST] Seq=1 Win=0 Len=0
6	0.0…	13.124.193.201	192.168.219.100	TCP	66 8500 → 60194 [SYN, ACK] Seq=0 Ack=1 Win=26883 Len=0 M
7	0.0…	13.124.193.201	192.168.219.100	TCP	54 8200 → 53547 [RST] Seq=1 Win=0 Len=0
8	0.0…	13.124.193.201	192.168.219.100	TCP	54 8200 → 61885 [RST] Seq=1 Win=0 Len=0
9	0.0…	192.168.219.100	13.124.193.201	TCP	54 60194 → 8500 [ACK] Seq=1 Ack=1 Win=131328 Len=0
10	0.0…	192.168.219.100	13.124.193.201	HTTP	551 GET /a HTTP/1.1
11	0.0…	13.124.193.201	192.168.219.100	TCP	54 8500 → 60194 [ACK] Seq=1 Ack=498 Win=28032 Len=0
12	0.0…	13.124.193.201	192.168.219.100	HTTP	364 HTTP/1.1 200 OK (text/html)
13	0.0…	192.168.219.100	13.124.193.201	TCP	54 60194 → 8500 [ACK] Seq=498 Ack=311 Win=131072 Len=0
14	3.7…	192.168.219.100	13.124.193.201	HTTP	551 GET /b HTTP/1.1
15	3.7…	13.124.193.201	192.168.219.100	HTTP	362 HTTP/1.1 200 OK (text/html)
16	3.7…	192.168.219.100	13.124.193.201	TCP	54 60194 → 8500 [ACK] Seq=995 Ack=619 Win=130560 Len=0

SSR

Wireshark · Packet 15 · server.pcapng

```
> Frame 15: 362 bytes on wire (2896 bits), 362 bytes captured (2896 bits) on interface \Device\NPF_{6CEF3232-F33C-4DD3-BCDB-7CB7E3ACBC81}, id 0
> Ethernet II, Src: Mercury_56:a0:a9 (b4:a9:4f:56:a0:a9), Dst: IntelCor_aa:89:94 (98:2c:bc:aa:89:94)
> Internet Protocol Version 4, Src: 13.124.193.201, Dst: 192.168.219.100
> Transmission Control Protocol, Src Port: 8500, Dst Port: 60194, Seq: 311, Ack: 995, Len: 308
> Hypertext Transfer Protocol
v Line-based text data: text/html (1 lines)
    <span style="color:red; font-size:40px">server side rendering : page B</span>
```


client.pcapng
File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help
Apply a display filter ··· <Ctrl-/>
No. Time Source Destination Protocol Length Info
1 0.0… 192.168.219.100 13.124.193.201 HTTP 551 GET /a HTTP/1.1
2 0.0… 13.124.193.201 192.168.219.100 HTTP 497 HTTP/1.1 200 OK (text/html)
3 0.0… 192.168.219.100 13.124.193.201 HTTP 445 GET /js/app.6029ce48.js HTTP/1.1
4 0.0… 192.168.219.100 13.124.193.201 HTTP 455 GET /js/chunk-vendors.42656474.js HTTP/1.1
5 0.0… 13.124.193.201 192.168.219.100 TCP 1514 8200 → 54632 [ACK] Seq=444 Ack=889 Win=328 Len=1460 [TCP segment
6 0.0… 13.124.193.201 192.168.219.100 HTTP 1226 HTTP/1.1 200 OK (application/javascript)
7 0.0… 192.168.219.100 13.124.193.201 TCP 54 54632 → 8200 [ACK] Seq=889 Ack=3076 Win=6387 Len=0
8 0.0… 13.124.193.201 192.168.219.100 TCP 1514 8200 → 61885 [ACK] Seq=1 Ack=402 Win=269 Len=1460 [TCP segment o
9 0.0… 13.124.193.201 192.168.219.100 TCP 1514 8200 → 61885 [ACK] Seq=1461 Ack=402 Win=269 Len=1460 [TCP segmen
10 0.0… 13.124.193.201 192.168.219.100 TCP 1514 8200 → 61885 [ACK] Seq=2921 Ack=402 Win=269 Len=1460 [TCP segmen
11 0.0… 13.124.193.201 192.168.219.100 TCP 1514 8200 → 61885 [ACK] Seq=4381 Ack=402 Win=269 Len=1460 [TCP segmen
12 0.0… 13.124.193.201 192.168.219.100 TCP 1514 8200 → 61885 [ACK] Seq=5841 Ack=402 Win=269 Len=1460 [TCP segmen
13 0.0… 13.124.193.201 192.168.219.100 TCP 1514 8200 → 61885 [ACK] Seq=7301 Ack=402 Win=269 Len=1460 [TCP segmen
14 0.0… 13.124.193.201 192.168.219.100 TCP 1514 8200 → 61885 [ACK] Seq=8761 Ack=402 Win=269 Len=1460 [TCP segmen
15 0.0… 13.124.193.201 192.168.219.100 TCP 1514 8200 → 61885 [ACK] Seq=10221 Ack=402 Win=269 Len=1460 [TCP segme

Wireshark · Packet 9 · client.pcapng

```
    [Next Sequence Number: 2921    (relative sequence number)]
    Acknowledgment Number: 402    (relative ack number)
    Acknowledgment number (raw): 3169765577
    0101 .... = Header Length: 20 bytes (5)
  > Flags: 0x010 (ACK)
    Window: 269
    [Calculated window size: 269]
    [Window size scaling factor: -1 (unknown)]
    Checksum: 0x7bfa [unverified]
    [Checksum Status: Unverified]
    Urgent Pointer: 0
  > [SEQ/ACK analysis]
  > [Timestamps]
    TCP payload (1460 bytes)
    [Reassembled PDU in frame: 132]
    TCP segment data (1460 bytes)
```

```
0030  01 0d 7b fa 00 00 65 29  7b 74 2e 65 78 70 6f 72   ··{···e) {t.expor
0040  74 73 3d 66 75 6e 63 74  69 6f 6e 28 74 29 7b 69   ts=funct ion(t){i
0050  66 28 22 66 75 6e 63 74  69 6f 6e 22 21 3d 74 79   f("funct ion"!=ty
0060  70 65 6f 66 20 74 29 74  68 72 6f 77 20 54 79 70   peof t)t hrow Typ
0070  65 45 72 72 6f 72 28 53  74 72 69 6e 67 28 74 29   eError(S tring(t)
0080  2b 22 20 69 73 20 6e 6f  74 20 61 20 66 75 6e 63   +" is no t a func
0090  74 69 6f 6e 22 29 3b 72  65 74 75 72 6e 20 74 7d   tion");r eturn t}
00a0  7d 2c 22 31 63 37 65 22  3a 66 75 6e 63 74 69 6f   },"1c7e" :functio
00b0  6e 28 74 2c 65 2c 6e 29  7b 76 61 72 20 72 3d 6e   n(t,e,n) {var r=n
00c0  28 22 62 36 32 32 22 29  2c 6f 3d 72 28 22 69 74   ("b622") ,o=r("it
00d0  65 72 61 74 6f 72 22 29  2c 69 3d 21 31 3b 74 72   erator") ,i=!1;tr
00e0  79 7b 76 61 72 20 61 3d  30 2c 73 3d 7b 6e 65 78   y{var a= 0,s={nex
00f0  74 3a 66 75 6e 63 74 69  6f 6e 28 29 7b 72 65 74   t:functi on(){ret
0100  75 72 6e 7b 64 6f 6e 65  3a 21 21 61 2b 2b 7d 7d   urn{done :!!a++}}
0110  2c 72 65 74 75 72 6e 3a  66 75 6e 63 74 69 6f 6e   ,return: function
```

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과제

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과제 제출

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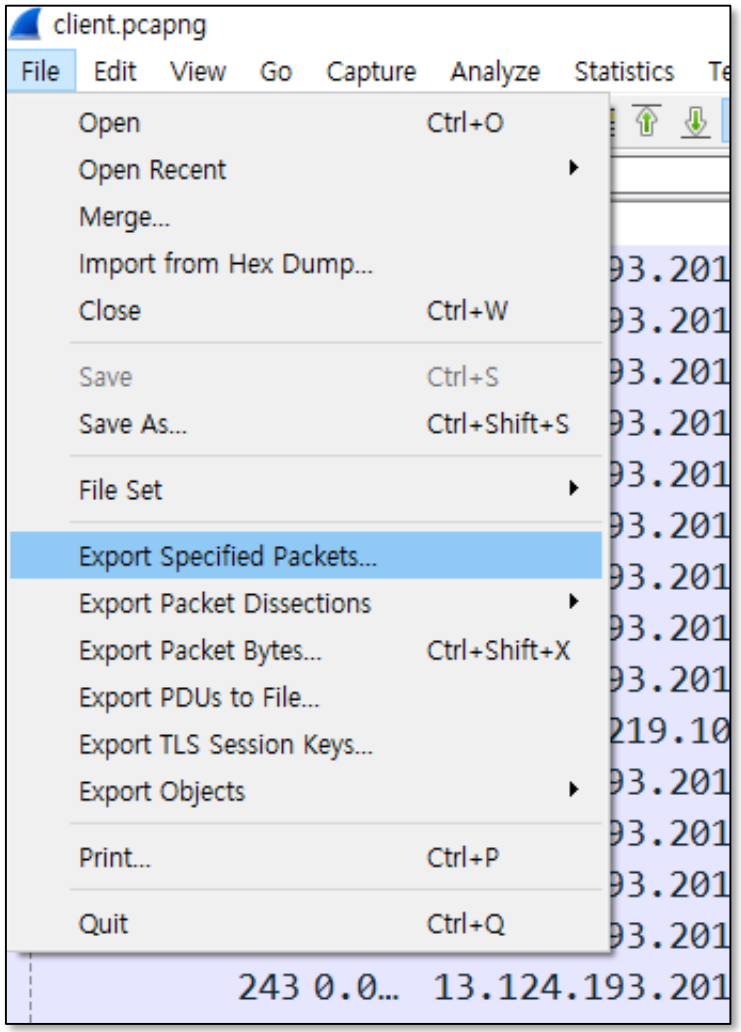

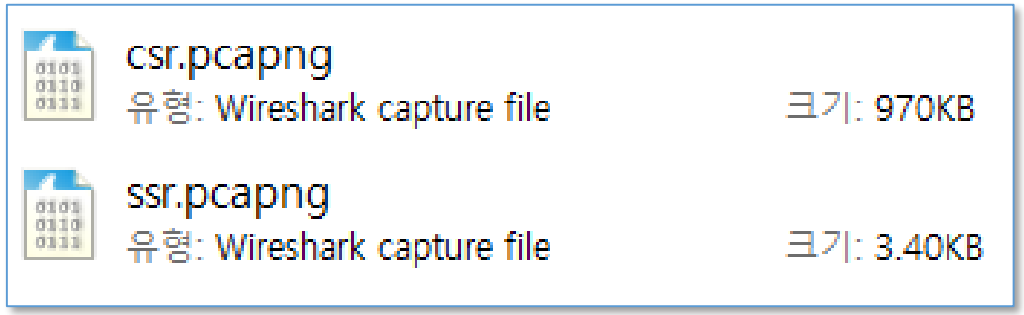

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여러분의
폭풍 성장을 응원합니다!!