Lab 10

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Lab Task:

1. What is the source and destination port numbers?

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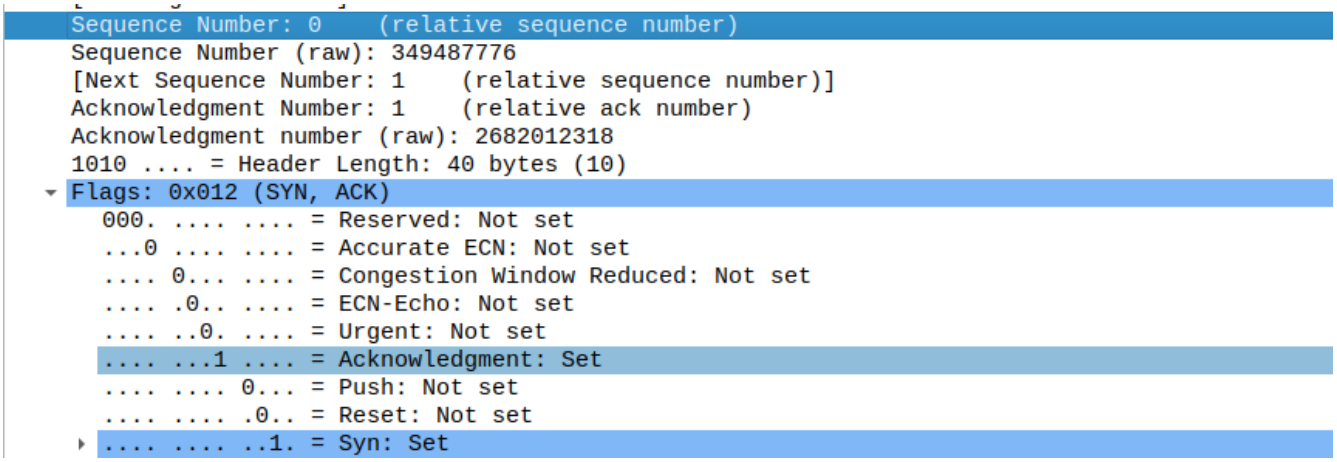
▾ Transmission Control Protocol, Src Port: 60643, Dst Port: 80, Seq: 0, Len: 0
    Source Port: 60643
    Destination Port: 80
```

2. What is the sequence number of the TCP SYN segment that is used to initiate the TCP connection? What is it in the segment that identifies the segment as a SYN segment?

```
    Sequence Number: 0    (relative sequence number)
    Sequence Number (raw): 2682012317
    [Next Sequence Number: 1    (relative sequence number)]
    Acknowledgment Number: 0
    Acknowledgment number (raw): 0
    1011 .... = Header Length: 44 bytes (11)
  ▾ Flags: 0x002 (SYN)
      000. .... .... = Reserved: Not set
      ...0 .... .... = Accurate ECN: Not set
      .... 0... .... = Congestion Window Reduced: Not set
      .... .0.. .... = ECN-Echo: Not set
      .... ..0. .... = Urgent: Not set
      .... ...0 .... = Acknowledgment: Not set
      .... .... 0... = Push: Not set
      .... .... .0.. = Reset: Not set
    ▸ .... .... ..1. = Syn: Set
```

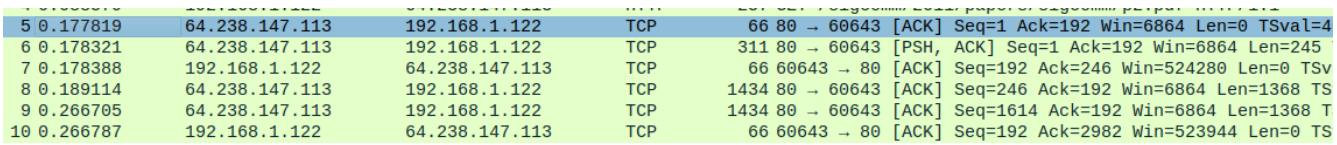
The sequence number of the TCP SYN segment is 1 since it is used to imitate the TCP connection between the client and receiver .
The Flags section, the Syn flag is set which indicates that this segment is a SYN segment.

3. What is the sequence number of the SYNACK segment sent by the server to the client computer in reply to the SYN? What is the value of the Acknowledgement field in the SYNACK segment? How did server determine that value? What is it in the segment that identifies the segment as a SYNACK segment?



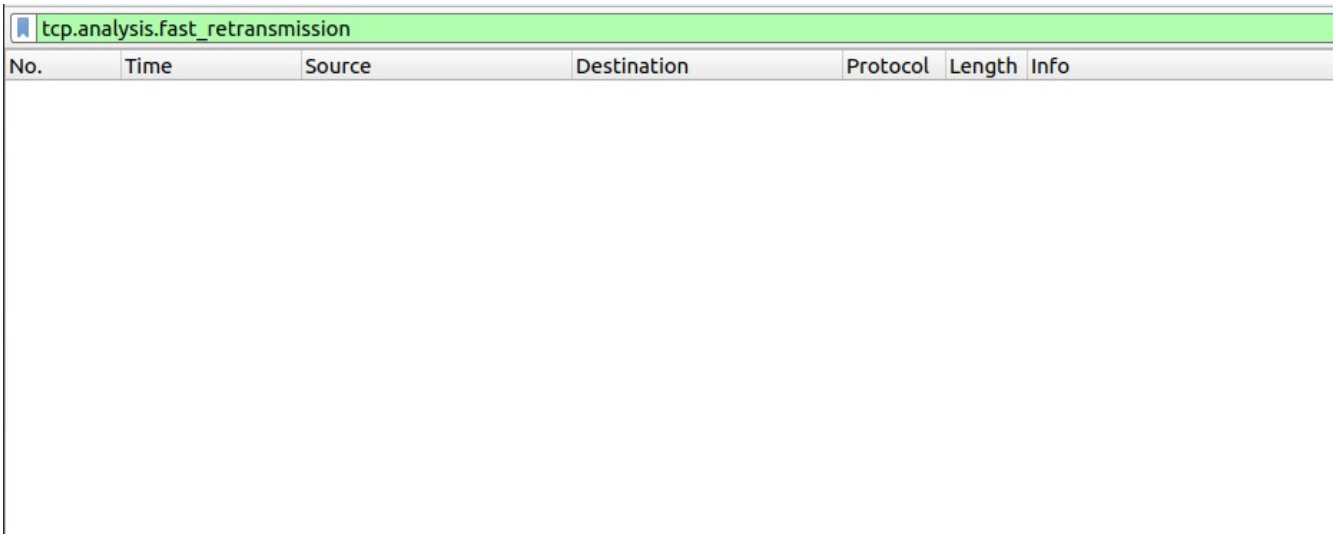
The sequence number of the SYNACK segment sent by server to the client computer in reply to the SYN is 1.
The value of the acknowledgement field in the SYNACK segment is 1. The value of the Acknowledgement field in the SYNACK segment is determined by the server.
The server adds 1 to the initial sequence number of SYN segment form the client computer.
For this case, the initial sequence number of SYN segment from the client computer is 0, thus the value of the ACKnowledgement field in the SYNACK segment is 1. A segment will be identified as a SYNACK segment if both SYN flag and Acknowledgement in the segment are set to 1.

4. What is the length of each of the first six TCP segments?



The length of the first TCP segment is 0 bytes, the length of the second TCP segment is 245 bytes.
The length of the 3rd TCP segment is 0 bytes, the length of the 4th, 5th TCP segment is 1368 bytes and 6th 0 bytes.

5. Are there any retransmitted segments in the trace file? What did you check for (in the trace) in order to answer this question?



There is no retransmitted segments in the trace file .