

Batch: A3**Experiment Number:4****Roll Number:16010423099****Name:Suryanshu Banerjee****Aim of the Experiment:** To write a program to implement TCP header

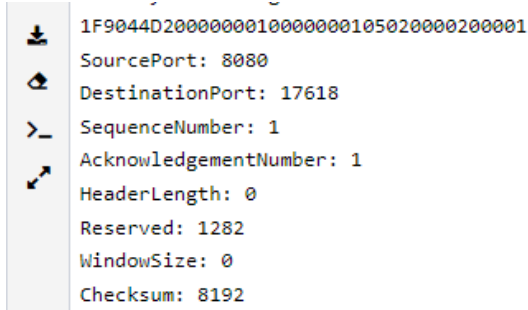
Program/ Steps:

```
def mytcpheader(stringer):

    sourceport = int(stringer[0:4], 16)
    destinationport = int(stringer[4:8], 16)
    sequence = int(stringer[8:16], 16)
    acknowledgement = int(stringer[16:24], 16)
    hlen = int(stringer[24], 16)
    reserved = int(stringer[25:28], 16)
    window size = int(stringer[28:32], 16)
    checksum = int(stringer[32:36], 16)
    urgent pointer = int(stringer[36:40], 16)

    print(f"SourcePort: {sourceport}")
    print(f"DestinationPort: {destinationport}")
    print(f"SequenceNumber: {sequence}")
    print(f"AcknowledgementNumber: {acknowledgement}")
    print(f"HeaderLength: {hlen}")
    print(f"Reserved: {reserved}")
    print(f"WindowSize: {window size}")
    print(f"Checksum: {checksum}")
    print(f"UrgentPointer: {urgent pointer}")

stringer = input("Enter your string: ").strip()
mytcpheader(stringer)
```

Output/Result:A screenshot of a network packet capture tool showing the details of a TCP segment. The IP address is 1F9044D200000000100000000105020000200001. The source port is 8080 and the destination port is 17618. The sequence number is 1, and the acknowledgement number is 1. The header length is 0, reserved is 1282, window size is 0, and the checksum is 8192.

```
1F9044D200000000100000000105020000200001
SourcePort: 8080
DestinationPort: 17618
SequenceNumber: 1
AcknowledgementNumber: 1
HeaderLength: 0
Reserved: 1282
WindowSize: 0
Checksum: 8192
```

Post Lab Question-Answers:

The unit of data transfer between two devices using TCP is called _____ segment _____.

1) Which type of addressing is used at Transport Layer?

- a) Port addressing
- b) Logical addressing
- c) Physical Addressing
- d) None of the Above

Answer: Port Addressing

2) What is the difference between TCP and UDP?

Answer: TCP is connection-oriented, ensuring reliable data transfer with error checking and flow control, while UDP is connectionless, offering faster, simpler transmission without guarantees of delivery or order.

Outcomes:

CO2: Enumerate the layers of the OSI model and TCP/IP model, their functions and Protocols.

Conclusion (based on the Results and outcomes achieved):

Successfully executed a python program to implement TCP header.

References:

Books/ Journals/ Websites:

- Behrouz A Forouzan, Data Communication and Networking, Tata Mc Graw hill, India, 4th Edition
- A. S. Tanenbaum,” Computer Networks”, 4th edition, Prentice Hall