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Batch A2

Code-

```
def TCPResult():

    tcp = input("Enter TCP header: ")

    test={'1','2','3','4','5','6','7','8','9','A','B','C','D','E','F'}

    if len(tcp) != 40:

        print("Invalid Length")

        return

    for i in tcp:

        if i not in test:

            print("Invalid TCP")

            return

    print(f"Source Port- {tcp[:4]}")

    print(f"Destination Post Address- {tcp[4:8]}")

    print(f"Sequence Number- {tcp[8:16]}")

    print(f"Acknowledgement Number- {tcp[16:24]}")

    print(f"HLEN- {tcp[24]}")

    arr=tcp[25:28]

    res=""
```

```
for i in arr:

    res+="{0:04b}".format(int(i,16))

print(f"Reserved- {res[:6]}")

print(f"Urgent- {res[6]}")

print(f"Acknowledgment- {res[7]}")

print(f"Push- {res[8]}")

print(f"Reset- {res[9]}")

print(f"Sync- {res[10]}")

print(f"Finish- {res[11]}")


print(f"Window Size- {tcp[28:32]}")

print(f"Checksum- {tcp[32:36]}")

print(f"Urgent Pointer- {tcp[36:]}")


if __name__ == '__main__':

    TCPResult()
```

## Output

```
PS D:\> & C:/Users/EXAM.16DITB213-12.000/AppData/Local/Programs/Powercat/Powercat.exe
Enter TCP header: A1234BCD6789BCDEF56781234ABCDEF123456789
Source Port- A123
Destination Post Address- 4BCD
Sequence Number- 6789BCDE
Acknowledgement Number- F5678123
HLEN- 4
Reserved- 101010
Urgent- 1
Acknowledgment- 1
Push- 1
Reset- 1
Sync- 0
Finish- 0
Window Size- DEF1
Checksum- 2345
Urgent Pointer- 6789
PS D:\> █
```