Department of Computer Engineering
Class: S.Y. B.Tech.   **Semester: IV**
Course Code: DJ19CEL405   **Course Name: Computer Networks Lab**

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Date of Performance: 14/08/2024	Date of Submission: 21/08/2024

Experiment No: 2

Aim: Write a program to implement Framing:

Techniques: Character count, Byte stuffing, Bit stuffing.

Theory: (WRITE THE THEORY FOR EACH OF THE TECHNIQUES ALONG WITH THEIR USAGE EXAMPLES.)

Program:
Character Count

```python
print("Vinit Shah C183 60004220097 C3-2")
n=int(input("Enter number of frames:"))
str=""
for i in range(0,n):
    text=input(f"Enter frame {i+1}:")
    str+=f"{len(text)+1}"+text
print("Stuffed String : "+str)
```

Byte Stuffing:

```python
print("Vinit Shah   C183 60004220097")
str=input("Enter string:")
sf=input("Enter start flag:")
ef=input("Enter end flag:")
esc=input("Enter escape flag:")
text=""
text+=sf
for i in str:
    if i==sf:
        text+=(esc+i)
    elif i==ef:
        text+=(esc+i)
    elif i==esc:
        text+=(esc+i)
    else:
        text+=i
text+=ef
```

```python
print("Stuffed String : "+text)
```

Bit Stuffing:-

```python
print("Vinit Shah C3-2 C183 60004220097")
str=input("Enter string:")

text=""
count=-1
for i in range(0,len(str)):
    ch=str[i]
    if ch=='1':
        if i!=0:
            if str[i-1]==0:
                count=0
            else:
                count+=1
    else:
        count=-1

    if count==5:
        text+='0'
    text+=ch
print(text)
```

Screenshots:
Character Count:-

```
PS C:\Users\meghs\Desktop\Computer_Network> & C:/Users/meghs/AppData/Local/Programs/Python/Python312/python.exe c:/Users/meghs/Desktop/Computer_Network/Experi
ment3.py
Vinit Shah C183 60004220097 C3-2
Enter number of frames:3
Enter frame 1:ABCD
Enter frame 2:XY
Enter frame 3:ZZX
Stuffed String : 5ABCD3XY4ZZX
PS C:\Users\meghs\Desktop\Computer_Network>
```
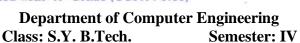
Byte Stuffing:

```
PS C:\Users\meghs\Desktop\Computer_Network> & C:/Users/meghs/AppData/Local/Programs/Python/Python312/python.exe c:/Users/meghs/Desktop/Computer_Network/Experi
ment2a.py
Vinit Shah   C183 60004220097
Enter string:goodday
Enter start flag:d
Enter end flag:g
Enter escape flag:$
Stuffed String : d$goo$d$dayg
PS C:\Users\meghs\Desktop\Computer_Network>
```

Bit Stuffing:-

Shri Vile Parle Kelavani Mandal's
DWARKADAS J. SANGHVI COLLEGE OF ENGINEERING
(Autonomous College Affiliated to the University of Mumbai)
NAAC Accredited with "A" Grade (CGPA : 3.18)

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```
PS C:\Users\meghs\Desktop\Computer_Network> & C:/Users/meghs/AppData/Local/Programs/Python/Python312/python.exe c:/Users/meghs/Desktop/Computer_Network/Experi
ment2b.py
Vinit Shah C3-2 C183 60004220097
Enter string:001111101110101
001111101110101
PS C:\Users\meghs\Desktop\Computer_Network>
```

Conclusion:

Thus, we have studied and implemented the various framing techniques.