

Practical: 4

AIM: Write a program to implement various framing techniques.

- a. Bit Stuffing
- b. Byte Stuffing



**Ganpat
University**

॥ विद्यया समाजोत्कर्षः ॥

**U.V. Patel
College of
Engineering**

Department of Computer
Engineering/Information Technology

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Q.1 Byte Stuffing

```
flag=input("Enter flag: ")
esc_char=input("Enter ESC Character: ")
data=input("Enter Data: ")
byte_stuff=[]
byte_stuff.append(flag)
for i in data:
    if(i==flag or i==esc_char):
        byte_stuff.append(esc_char)
    byte_stuff.append(i)
byte_stuff.append(flag)
print("Flag is: ",flag)
print("ESC is: ",esc_char)
print("Original data is: ",data)
print("ByteStuff Data is: ","".join(byte_stuff))
```

Output:

```
PS E:\B_Tech\SEM_5\CN\Practical\Code\Practical 4> python -u
"e:\B_Tech\SEM_5\CN\Practical\Code\Practical 4\byte_stuffi
ng.py"
Enter flag: a
Enter ESC Character: b
Enter Data: abcdgfstvabvbn
Flag is: a
ESC is: b
Original data is: abcdgfstvabvbn
ByteStuff Data is: ababbcdgfstvbabbvnbba
PS E:\B_Tech\SEM_5\CN\Practical\Code\Practical 4> |
```

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Q.2 Bit Stuffing

```
flag = "01111110"
data=list(input("Enter Data: "))
print("Flag is: ",flag)
print("Original Data is: ","".join(data))
for i in range(0,len(data)):
    if(data[i]=='1'):
        f=1
        for j in range(1,6):
            if(flag[j]!=data[i]):
                f=0
                break
            i=i+1
        if(f==1):
            data.insert(i-1,'0')
print("Bit Stuff Data is: ","".join(data))
```

Output:

```
PS E:\B_Tech\SEM_5\CN\Practical\Code\Practical 4> python -u "e:\B_Tech\SEM_5\CN\Practical\Code\Practical 4\bit_stuffing.py"
Enter Data: 1111111110110101011011111111
Flag is: 01111110
Original Data is: 1111111110110101011011111111
Bit Stuff Data is: 1111011110110101011011110111101
PS E:\B_Tech\SEM_5\CN\Practical\Code\Practical 4> █
```