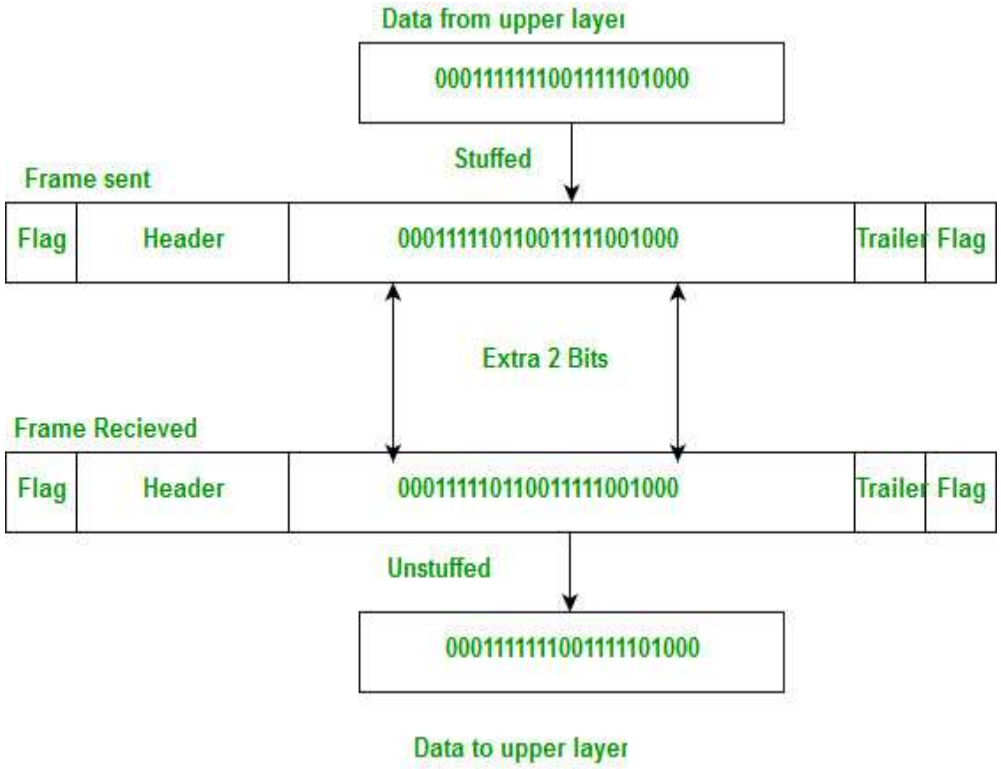
Programming for problem solving:

Project : Bit Stuffing in Computer networks:

The data link layer is responsible for something called Framing, which is the division of stream of bits from network layer into manageable units (called frames). Frames could be of fixed size or variable size. In variable-size framing, we need a way to define the end of the frame and the beginning of the next frame.

Bit stuffing is the insertion of non information bits into data. Note that stuffed bits should not be confused with overhead bits.

Overhead bits are non-data bits that are necessary for transmission (usually as part of headers, checksums etc.).



Example of bit stuffing –

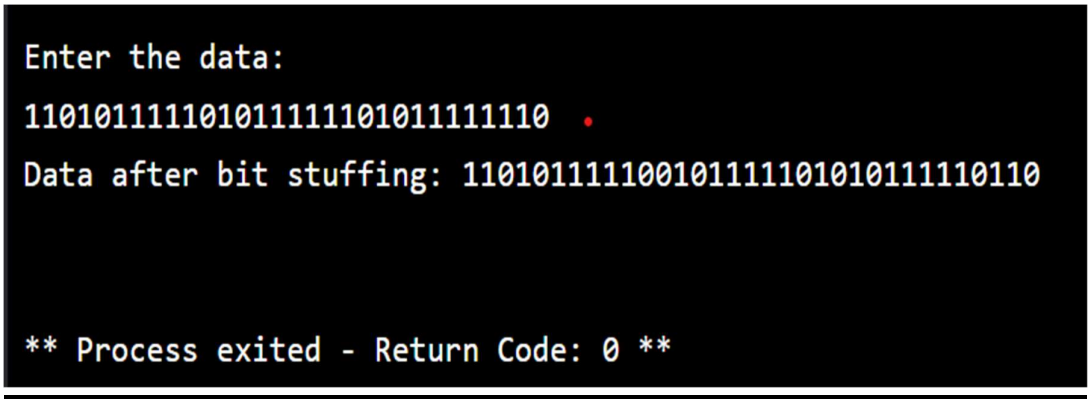
Bit sequence: 11010111110101111101011111110 (without bit stuffing)

Bit sequence: 11010111110010111110101011111010110 (with bit stuffing)

```
#include <stdio.h>
#include <string.h>

int main()
 {
   char data[100], stuffed_Data[200];
   int i, count = 0, j = 0;

   printf("Enter the data: ");
   scanf("%s", data);

    for(i = 0; i < strlen(data); i++)
     {
      if(data[i] == '1')
        {
            count++;
            stuffed_Data[j++] = data[i];
```

```
        }
      else
        {
         count = 0;
         stuffed_Data[j++] = data[i];
       }

       if(count == 5)
       {
         count = 0;
         stuffed_Data[j++] = '0';
       }
  }


   stuffed_Data[j] = '\0';

   printf("Data after bit stuffing: %s\n", stuffed_Data);

   return 0;

}
```

OUTPUT :



By

Pravalika (23WH1A6609)

Mahima Meghana p (23WH1A6607)

Vaishnavi G (23WH1A6660)

Abhigna B (23WH1A6662)