PART C

Experiment 8

Write a C/C++ program to do the following:

i. **Bit stuffing**

ii. **Character count**

iii. **Checksum**

```
#include<stdio.h>
#include<conio.h>
#include<math.h>
#include<string.h>
inti,j;
void sender(int b[10],int k)
{
        intchecksum,sum=0;
        printf("\n****SENDER****\n");
        for(i=0;i<k;i++)
                sum+=b[i];
        printf("SUM IS: %d\n",sum);
        checksum=~sum;
        printf("\nSENDER's CHECKSUM IS:%d",checksum);
}

int main()
{
```

```
charstr[100], bstr[100];
        int a[100],m,scheck;
        char choice;
        printf("\n.....YOUR OPTIONS....\n");
        printf("\na.Checksum\nb. Bit stuffing\nc. Character count\n");
        printf("\nEnter your choice:");
        scanf("%c",&choice);
        switch(choice)
        {
           //Checksum Calculation
        case 'a':
        {
                printf("\nENTER SIZE OF THE STRING:");
                scanf("%d",&m);
                printf("\nENTER THE ELEMENTS OF THE ARRAY:");
                for(i=0;i<m;i++)
                scanf("%d",&a[i]);
                sender(a,m);
}
                break;
           //Bit stuffing
        case 'b':
        {
        int count=0;
        printf("Enter the bit string: ");
        scanf("%s",str);
```

```
                for(i=j=0; str[i]; i++)
        {

                        if(str[I ]=='1') count++;
                else            count=0;
                bstr[i+j]=str[i];
                if(count==5)
                {
                j++;
                bstr[i+j]='0';
                count=0;
}
}
        bstr[i+j]='\0';
        printf("\nAfter Bit stuffing : %s\n", bstr);
        }
                break;
 //Inserting  character count code
        case 'c':
        {
        chararr[100]; int x,y;
        printf("\nENTER THE ELEMENTS OF THE ARRAY:");
        scanf("%s",arr);
        printf("\n Resultant Frame using character count =  %d%s\n",strlen(arr)+1,arr);
        }
        break;
```

```
            default:
            printf("\nYou entered an invalid choice run program again");
        }
        getch();
}
```

Exercise: Write a C/C++ program to extract the data from the frames at the receiver using Bit stuffing, Checksum and Character count.