# **PROGRAM-2:** CRC

```
#include<stdio.h>
int* rem0(int *data,int *rem,int m,int i)
{
   int j;
  for(j=1;j<m;j++)
   {
      rem[j-1]=rem[j];
      if(j==m-1)
      {
         rem[j]=data[i];
      }
   }
   return *rem;
}
int* rem1(int *data,int *rem,int *q,int m,int i)
{
   int j;
   for(j=0;j<m;j++)
   {
      rem[j]=rem[j]^q[j];
```

```
    }
    if(i==7)
    {
        return *rem;
    }
    if(rem[0]==0)
    {
        *rem=rem0(data,rem,m,i);
    }
    return *rem;
}
int* server(int *data,int *q,int n,int m)
{
    int i=0,j=0;
    int rem[m];
    for(j=0;j<m;j++)
    {
        rem[j]=data[j];
    }
    i=m;
    while(i<n)
```

```
{
   if(rem[0]==1)
   {
      *rem=rem1(data,rem,q,m,i);
   }
   else
   {
      *rem=rem0(data,rem,m,i);
   }
   i++;
}
if(rem[0]==1)
{
   *rem=rem1(data,rem,q,m,i);
}
for(j=m-1,i=n-1;i>=(n-m+1);i--,j--)
{
   data[i]=rem[j];
}
/* printf("\n");
 for(j=0;j<n;j++)
```

```
    {
        printf("%d ",data[j]);
    }*/
    return *data;
}
int main()
{
    int data[16],q[7],i,n,m;
    printf("length of dataword  n:");
    scanf("%d",&n);
    printf("length of divisor  m:");
    scanf("%d",&m);
    int result[n];
    printf("Dataword should contain %d zero's at the end\n",m-1);
    printf("Dataword:  ");
    for(i=0;i<n;i++)
    {
        scanf("%d",&data[i]);
        result[i]=data[i];
    }
    printf("Divisor:  ");
```

```
    for(i=0;i<m;i++)
    {
       scanf("%d",&q[i]);
    }
    *data=server(data,q,n,m);
    printf("Verification=>");
    *data=server(data,q,n,m);
    for(i=0;i<n && data[i]==result[i];i++);
    if(i==n)
    {
       printf("\nData bits not corrupted");
    }
    else
    {
       printf("\nData bits corrupted");
    }
    return 0;
}
```