```
//dft using C
#include<stdio.h>
#include<conio.h>
#include<math.h>
 void main()
{
      float k,x[10],sum1,sum2,n,y1[10],y2[10];
      int N;
      clrscr();
      printf("/n enter the length of dft sequence:");
      scanf("%d",&N);

      for(n=0;n<N;n++)
          {
            printf("\nEnter the input sequence");
            scanf("%f",&x[n]);
          }
            //Calculation of DFT
      for(k=0;k<N;k++)
            {
               sum1=sum2=0;
               for(n=0;n<N;n++)
            {
               sum1=    sum1+x[n]*cos(2*3.14*k*n/N);
               sum2=sum2-x[n]*sin(2*3.14*k*n/N);
               }
                 y1[k]=sum1;
                 y2[k]=sum2;

      printf("\n y[%f]= %f + j(%f)",k,y1[k],y2[k]);
      }
      getch();
}


\\idft using C

#include<stdio.h>
#include<conio.h>
#include<math.h>
 void main()
{
      float k,x[10],sum1,sum2,n,y1[10],y2[10];
      int N;
      clrscr();
      printf("/n enter the length of dft sequence:");
      scanf("%d",&N);
      printf("\nEnter the input sequence");
      //idft of seq [1 0 1 0] is [0.5 0 0.5 0]
      for(n=0;n<N;n++)
          {
             scanf("%f",&x[n]);
          }
            //Calculation of IDFT
      for(k=0;k<n;k++)
            {
```

```
            sum1=sum2=0;
            for(n=0;n<N;n++)
          {
            sum1=    sum1+x[n]*cos(2*3.14*k*n/N);
            sum2=sum2-x[n]*sin(2*3.14*k*n/N);
            }
             y1[k]=sum1;
             y2[k]=sum2;
    printf("\n y[%f]= %f + j(%f)",k,y1[k]/N,y2[k]/N);
    }
    getch();
}
```