```
% DFT Using Function
clear all;
close all;
clc;

N = input('Enter the no.of samples:');
xn = input('Enter the input sequence:');
L = length(xn)
```

```
Xk = 17
Xk = 1×2 complex
   17.0000 + 0.0000i  -2.5000 + 2.5981i
Xk = 1×3 complex
   17.0000 + 0.0000i  -2.5000 + 2.5981i  -2.5000 - 2.5981i
```

```
    disp(Xk);
```

```
   17.0000 + 0.0000i  -2.5000 + 2.5981i  -2.5000 - 2.5981i
```

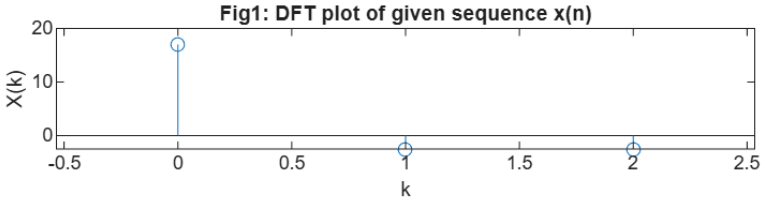
```
k=0:1:N-1;
subplot(3,1,1);
stem(k,Xk);
```

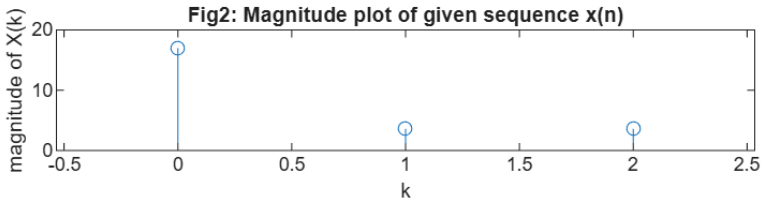
```
Warning: Using only the real component of complex data.
```

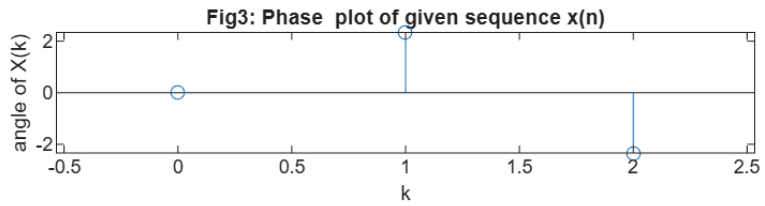
```
xlabel('k');
ylabel('X(k)');
title('Fig1: DFT plot of given sequence x(n)');

subplot(3,1,2);
stem(k,abs(Xk));
xlabel('k');
ylabel('magnitude of X(k)');
title('Fig2: Magnitude plot of given sequence x(n)');

subplot(3,1,3);
stem(k,angle(Xk));
xlabel('k');
ylabel('angle of X(k)');
title('Fig3: Phase  plot of given sequence x(n)');
```








```
 function[Xk]=dft11(xn,N)
L=length(xn);
       if(N<L)
               error ('N should be greater than L');
       end
               xn=[xn zeros(1,N-L)];
               Xk=[];


   for k=0:1:N-1
   [x]=0;
   for n=0:1:N-1;
   x=[x+xn(1,n+1)*exp((-1j*2*pi*k*n)/N)];
end
   Xk=[Xk x]
end

 end
```