**DFT and IDFT Computation & FFT Computation**

Aim: Write a MATLAB program to compute the DFT and IDFT for a discrete signal.

Program:

%DFT FFT

clc;

close all;

clear all;

xn=input('Enter inputs:');

N=length(xn);

in=menu('DFT/IDFT or FFT/IFFT','DFT','FFT');

if(in==1)

n=0:N-1;

k=0:N-1;

wn=exp((-1i\*2\*pi\*k'\*n)/N);

X=wn\*xn';

display(X);

Wn=exp((1i\*2\*pi\*k'\*n)/N);

x\_n=Wn\*X/N;

display(x\_n);

else

X=fft(xn);

display(X);

x\_n=ifft(X);

display(x\_n);

end