

**MAWLANA BHASHANI SCIENCE AND TECHNOLOGY
UNIVERSITY**



DEPARTMENT OF ICT

Lab Report No : 06

Course Code : ICT-4206

Course Title : Digital Signal Processing Lab

Lab Report name : Evaluate DFT of given sequence

Submitted by

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Experiment No: 6

Experiment name: Evaluate DFT of given sequence.

Objectives: Through this experiment we will learn how to evaluate DFT of given sequence.

DFT of a sequence:

Corresponding code:

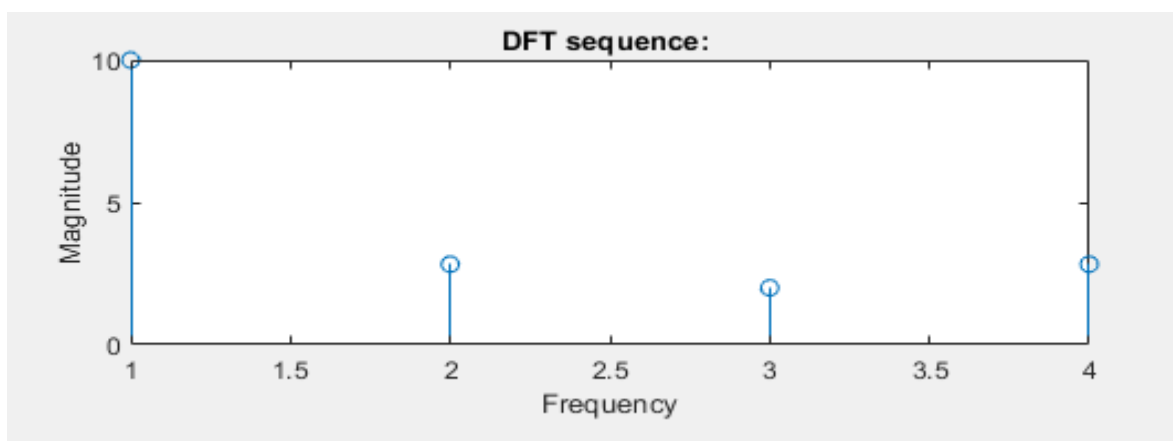
```
%DFT
x=[1 2 3 4]
[N]=length(x);
x=x.';
n=0:N-1;
for k=0:N-1
    Xk(k+1)=exp(-i*2*pi*n*k/N)*x;
end
Xk
mgXk = abs(Xk);
subplot (2,1,1);
stem(x,mgXk);
title ('DFT sequence: ');
xlabel('Frequency');
ylabel('Magnitude');
```

Output:

x = 1 2 3 4

Xk =

10.0000 + 0.0000i -2.0000 + 2.0000i -2.0000 - 0.0000i -2.0000 - 2.0000i



Discussion:

After completing this experiment, we have learnt, about how to evaluate DFT of given sequence.