Computer Assignment - 05 - Spring 2019
Signals & Systems

- P . Venkatesh
- S20180010135

DFT and Circular Convolution

Compute and compare the eight point circular convolution for the following sequences x1(n) and x2(n) using
(a) the circular convolution definition and
(b) the DFT method.

x1(n) = (1/4)^n 0<=n<=7
x2(n) = cos(3π/8*n) 0<=n<=7

using DEFINITION & DFT method

```
clc
clear
close all
%%
n = 0:1:7;
N=length(n);
x1((0<=n)&(n<=7)) = (1/4).^n((0<=n)&(n<=7));
x2((0<=n)&(n<=7)) = cos(3*pi/8.*n((0<=n)&(n<=7)));
for n1 = 1:N
def(n1) = 0;
for l = 1:N
k = n1-l+1;
if(k<=0)
k=N+k;
end
def(n1) = def(n1)+x1(l)*x2(k);
end
end
subplot(211);
stem(n,def);
title('using definition');

circ = ifft(fft(x1).*fft(x2));
subplot(212);
stem(n,circ);
title('using dft');
```