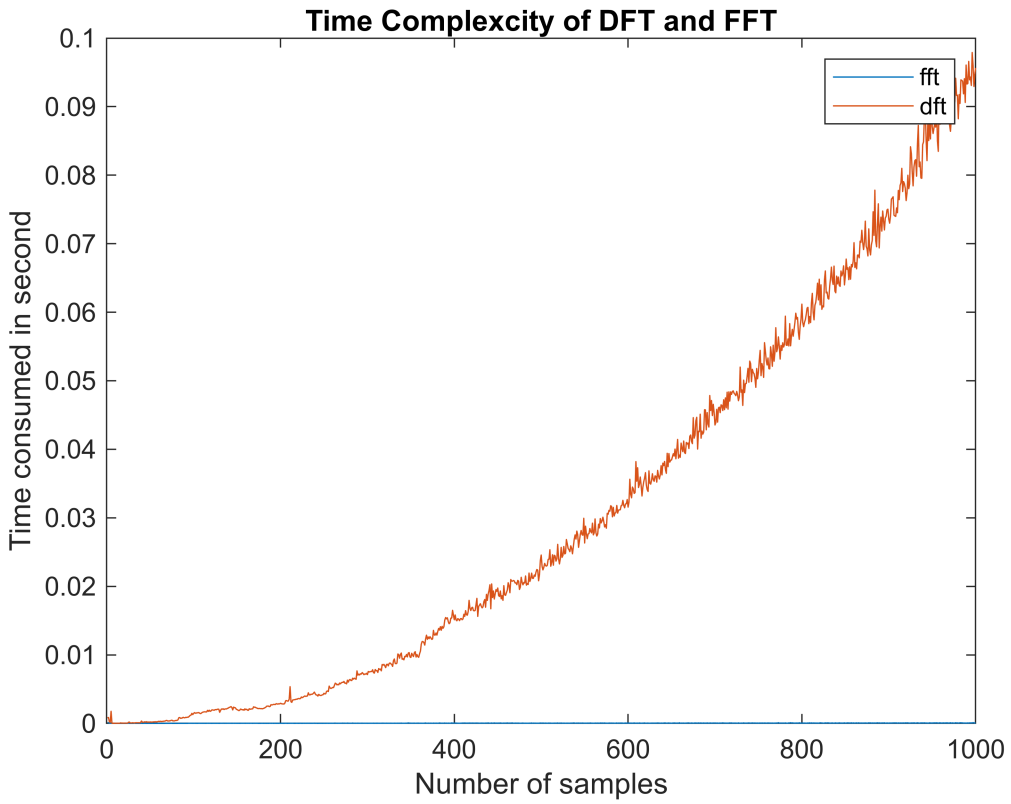
```
clc;
clear all;
timefft=[];
timedft=[];
tdft=[];
tfft=[];
N=[];
p=input("Enter the size");
for i=1:p
         N(i)=i;
         x=rand;
         inputfft(i)=x;
         inputdft(i)=x;
         M=i;
        tic;
        x_dft=DFTuse(inputdft,M);
        tdft(i)=toc;
        tic;
        x_fft=fft(inputfft,M);
        tfft(i)=toc;
        % timeDFT=tdft1*10e3
        % timeFFT=tfft1*10e3
end


plot(N,tfft)
hold on;
plot(N,tdft)
title("Time Complexcity of DFT and FFT")
xlabel("Number of samples")
ylabel("Time consumed in second")
legend('fft' ,'dft')
```




```
%time complex for fft is in milisecond so it will be near to zero thats why
%in grahp it is not been observed but if you zoom in then you can find it
%while in dft it will go in seconds too so you can clearly observe that



function X=DFTuse(x,M)
N=length(x);
i=[ones(N)];
u=(i'*i)./N;
k=[0:M-1];
n=[0:N-1];
kn=k'*n;

w1=[cos(2*pi/M)-(j*sin(2*pi/M))];
w=i.*w1;
wm=(w.^kn);
X=(x*wm);

end
```