

```
clc;
clear all;
close all;

[y,Fs]=audioread('MDSP_TUT_1\Another Brick In The Wall Pt.mp3');

y1=y(:,1);
i=1;
time_dft_fft=zeros(6,3);
x=zeros(7,1);
for j=7:1:12
    N=2^j
    tic;
    x_dft=y(1:N)*dftmtx(N);
    toc;
    time_dft=toc;

    tic;
    x_fft=fft(y(1:N));
    toc;
    time_fft=toc;

    time_dft_fft(i,1)=N;
    time_dft_fft(i,2)=time_dft;
    time_dft_fft(i,3)=time_fft;
    i=i+1;

end
%time_dft_fft;

%plotting
subplot(3,1,1);
plot(time_dft_fft(:,1),time_dft_fft(:,2));
xlabel("Segment Length");
ylabel("DFT Computation Time");

subplot(3,1,2);
plot(time_dft_fft(:,1),time_dft_fft(:,3));
xlabel("Segment Length");
ylabel("FFT Computation Time");

subplot(3,1,3);
plot(time_dft_fft(:,1),time_dft_fft(:,2)-time_dft_fft(:,3));
xlabel("Segment Length");
ylabel("DFT-FFT Computation Time Comparison");
```