Shiv Nadar University
Department of Electrical Engineering-(SoE)

EED305: Digital Signal Processing   **Lab-8**   **Instructor:** Prof. Vijay Kumar Chakka

Topics: DIT, DIF-FFT Algorithms- PSD

Lab Instructors: Prof. Vijay Kumar Chakka **& Dr.** Ravi Kant Saini

DIT-FFT Algorithm:

1. Compute the $N - \text{DFT}$ of the sequence $x(n)$ (discussed in class) using DIT-FFT algorithm.

2. Repeat question 1 using DIF-FFT algorithm.

3. Calculate the DFT of the given ECG signal ($inputData.mat$) of sampling frequency $500Hz$ using DIT-FFT algorithm

   a. Plot the normalized magnitude square of the DFT coefficients (normalized Power Spectral Density (PSD)).

   b. Calculate the $3dB$ power bandwidth of the above PSD.

   c. Find out the frequency range (bandwidth) by choosing 90% of normalized power.