TP N°1
Generation and analysis of different basic signals in time and frequency domain.

Lab Equipments :

       1- PC with Matlab software installed.

       2- Headphone.

Lab Work:

1. Generate 1024 samples of 1kHz sinusoidal (cos) signal sampled at 8kHz with the command:
    n=(0:1023); X=cos(2*n*pi*1000/8000);
2. Plot 100 samples of the generated signal in the time domain using both the plot and stem Matlab functions using the commands: plot(n(1:100),X(1:100)), stem(n(1:100),X(1:100)).
    Use appropriate title and axis labeling.
3. Evaluate and plot the amplitude spectrum of the generated signal using **fft Matlab** function with the command:
    HX= Single_Sided_Amplitude_Spectrum(X,8000);
4. Use the Matlab function load to load the word "Aspect" uttered by male speaker with the command:
    [Y,FS,NBITS]=wavread('aspect11');
5. Plot three 250 samples of three different segments (frames) of the loaded signal in the time domain using the plot Matlab function with the commands:
    plot(Y(1000:1250))
    plot(Y(3200:3450))
    plot(Y(5000:5250))
    Use appropriate title and axis labeling
6. Evaluate and plot the amplitude spectrum of these different segments using the commands:
    HY= Single_Sided_Amplitude_Spectrum(Y(1000:1250),FS);
    HY= Single_Sided_Amplitude_Spectrum(Y(3200:3450),FS);
    HY= Single_Sided_Amplitude_Spectrum(Y(5000:5250),FS);
    Use appropriate title and axis labeling.
7. Compare and discuss the results obtained in steps 3 through 7 in your lab report.
8. Generate and analyze 100 samples of unit impulse and unit step function in the time and frequency domain using the same procedure

Bibliography

▪   Digital Signal Processing Laboratory UsingTMS320C6713 DSP Starter Kit Jordan University of Science & Technology Department of Electrical Engineering by Dr. Jehad Ababneh Eng. Yara Obeidat.
▪   Digital Signal Processing and Applications with the TMS320C6713 and TMS320C6416 DSK SECOND EDITION by Rulph Chassaing Worcester Polytechnic Institute and Donald Reay Heriot-Watt University