

Department of Information Technology

Communication Systems Lab (IT 2271)

Assignment 2

1. Write a program to generate a discrete time unit sample sequence (take time index value 0 to 20). Modify this program to generate the delayed sequence (let delay = 10 unit on time axis).
2. Write a program to generate a discrete time unit step sequence. (take time index value 0 to 20). Modify this program for the delayed sequence (let delay = 10 unit on time axis). Again modify it for amplitude of 2 unit.
3. Write two separate programs to generate the discrete time real exponential sequence, whose envelop will be of the following two patterns.



Take time index value 0 to 35 , for both case.

4. Write a program to generate a discrete time sinusoidal sequence of amplitude 1.5 unit and frequency 0.1 unit. Observe the sequence for different phase angle. Take the time index value 0 to 40.

5. Write a program to generate an expression $S = 2 * m(0.9^m)$, Where m is noise (random sequence) with it. Display uncorrupted part and noise part separately. Take time index value 0 to 50.

6. Write a program to remove the noise component from a corrupted signal by “Smoothing by averaging “ process (i.e. averaging a number of inputs samples around the sample at instant n).

Display the continuous waveform of uncorrupted signal, noise and Corrupted signal in a single sub-window, corrupted and smoothed Signal in another sub-window and all the intermediate signals used For the “smoothing by averaging “ process, in separate sub-windows. Use legends for easy identification of the signals.

7. Write a program to generate a discrete-time swept frequency sequence. Take time index value 0 to 100.