ELEC9721: Digital Signal Processing Theory and Applications

Lab 4 Preparation: Finite Word Length

1. Write a Matlab function to generate fixed point representation of a given number and the percentage of error without using any inbuilt commands related to these numbering formats

   Inputs:
   - The number X
   - Number of bits for I and F

   Outputs:
   - Decimal equivalent of I.F
   - fixedX - the fixed point representation (as a string)
   - Error.

   function [de,fixedx,err]= DecimalToFixedPoint (X,I,F)
   e.g. [3.625, 011.101, 0]=DecimalToFixedPoint(3.625, 3,3);

   Hint: First write it only for positive numbers and then include that one for negative numbers with 2's complements.

   In Matlab,
   - look at how to write functions
   - look at how to handle strings as data types, e.g. using '', char, double