Lab 9 Assignment

Due November 7th on Blackboard by 5pm.

Submit your pdf file that shows your test of the code.

Create a function `mydet.m` to compute the determinant of a square matrix using recursion. **Use recursion, don't use the built-in function det!** The function should take as input a square matrix A and return its determinant d. Test your code on the following matrix. After creating the function, find mydet(B) for the following given matrix B. Then, use MATLAB's built-in command `det(·)` to check your answer.

$$B = \begin{pmatrix} -7 & 4 & -2 & -8 & 6 \\ 8 & 7 & 2 & 3 & -1 \\ 6 & -6 & 6 & 0 & -7 \\ -6 & 2 & -9 & 2 & 0 \\ -9 & 6 & 7 & 5 & 0 \end{pmatrix}$$

Approach: Computing the determinant using recursion:
The determinant of an $n \times n$ square matrix A can be calculated in the following way:
$$\det(A) = a_{11}C_{11} + a_{12}C_{12} + \cdots + a_{1n}C_{1n}$$

where $C_{1j} = (-1)^{1+j} \det(M_{1j})$ and the $(n-1) \times (n-1)$ submatrix M_{1j} is obtained by deleting row 1 and column j from A.

Hint: You should use a for loop on the columns with the recursion relation nested inside for the determinant! Do not forget the case when A is 1 x 1 (in which case the determinant of A is just a_{11}.