Algorithm: Compute determinant of square matrix by Laplace Expansion

Input:
A real matrix (A) of order (nxn).

Output:
Determinant of matrix (A).

1. **Read the matrix**
   1.1. Input the valid dimensions (n) (number of rows / columns).
   1.2. Input all the entries of the matrix (A).

2. **Finding Determinant of A**
   2.1. **If n = 1**

   - If n = 1 then there is only one element in A, therefore that elements value is equal to determinant of A.

   - So compute a_{11} and return it.

3. 2.2. **If n = 2**

   - If n = 2 then A is 2 x 2 matrix.

   - Determinant of 2 x 2 matrix is a_{11} x a_{22} - a_{12} x a_{21}

   - So compute a_{11} x a_{22} - a_{12} x a_{21} and return it.

5. 2.3. **Initialize det**

   - This is the variable in which we are going to store each term of Laplace Expansion of matrix A.

   - Set value of det equals to 0.

6. 2.4. **If n > 2: Repeat following process for each element in first row**

   - For every column index `i` from 0 to n -1 **.**

     - Calculate minor of A with respect to a_{0i} and name it B.

     - If i is divisible by 2,
       det = det + a_{0i} x determinant(B) (Calculate determinant of B by repeating **3.** for B)

     - If i is not divisible by 2,
       det = det - a_{0i} x determinant(B) (Calculate determinant of B by repeating **3.** for B)

8. Output the result

4. Print the determinant of A.