

Singular Matrices

Solving linear system plays a key role in many scientific application, such as engineering, physics, chemistry, computer science, and economics.

Requirements

Write a software that determines if the following matrices are singular or not:

1. A is $n \times n$ squared matrix with elements from 1 to n^2
2. A is $n \times n$ squared matrix with random elements in $[0,2]$
3. A is $n \times n$ hilbert squared matrix $A[i, j] = 1 / (1 + i + j)$.