Determinant

* Owned by square matrix
* Is a real number that tells if the square matrix is invertible
* A is invertible iff det(A) != 0
* A is invertible iff A -> I
* Let A be partitioned into (A11, …, A1n),(A21,…,A2n), …, (An1, …, Ann)

A is invertible iff det(Aij) != 0 for all i = j

* Properties:
  + **Det(A) = Det(AT)**
  + **Triangular matrix, det = product of diagonal elements**
  + Det(A) = 0 if A has a zero-row or zero-column **OR (equivalent)** has identical rows or columns
* Cofactors: Aij = (-1)i+j det(Mij), Mij is minor of aij
* Det(E1 A) = - Det(A)
* E.g. |a21 a22|= -- |a11 a12|

|a11 a12| |a21 a22|