**EXPERIMENT – 5**

**Aim:** Exercises to find the reduced row echelon form of a matrix in Scilab

**Theory:**

**Reduced Row Echelon Form:**

Reduced Row Echelon Form of a matrix is used to find the rank of a matrix and further allows solving a system of linear equations. A matrix is in Row Echelon form if

* All rows consisting of only zeroes are at the bottom.
* The first nonzero element of a nonzero row is always strictly to the right of the first nonzero element of the row above it.

A matrix can have several row echelon forms. A matrix is in Reduced Row Echelon Form if

* It is in row echelon form.
* The first nonzero element in each nonzero row is a 1.
* Each column containing a nonzero as 1 has zeros in all its other entries.

**Rank of matrix:**

The rank of the matrix is the number of non-zero rows in the row echelon form. To find the rank, we need to perform the following steps:

* Find the row-echelon form of the given matrix
* Count the number of non-zero rows.

**Program:**

A=[1 5 8 6; 0 4 8 3;5 8 4 6];

disp(A)

disp(rref(A),"The row reduced echelon form of the matrix A is");

**Output:**

