|  |  |
| --- | --- |
| **Name** | Manish Shashikant Jadhav |
| **UID** | 2023301005 |
| **Subject** | Linear Algebra |
| **Experiment No.** | 4 |
| **Aim** | Implementation of Reduced Row Echelon Form in Scilab. |
| **Reduced Row Echelon Form 2x2** | clc  A = [1 2 ; 1 -1];  printf("The Matrix A is\n");  disp(A);  n = 2;  for i = 1:n  if A(i,i) == 0  A(i,:) = A(i,:);  else  A(i,:) = A(i,:) / A(i,i);  disp(A);  for j = 1:n-1  if i+j <= n  A(i+j,:) = A(i+j,:) - A(i+j,i)\*A(i,:);  end  end  end  end  for i = n:-1:2  for j = i-1:-1:1  A(j,:) = A(j,:) - A(j,i)\*A(i,:);  end  end  printf("The final matrix in row-reduced echelon form is: \n");  disp(A); |
| **Reduced Row Echelon Form 3x3** | clc  A = [1 2 -1 ; 1 -1 1 ; 2 -2 3];  printf("The Matrix A is\n");  disp(A);  n = 3;  for i = 1:n  if A(i,i) == 0  A(i,:) = A(i,:);  else  A(i,:) = A(i,:) / A(i,i);  disp(A);  for j = 1:n-1  if i+j <= n  A(i+j,:) = A(i+j,:) - A(i+j,i)\*A(i,:);  end  end  end  end  for i = n:-1:2  for j = i-1:-1:1  A(j,:) = A(j,:) - A(j,i)\*A(i,:);  end  end  printf("The final matrix in row-reduced echelon form is: \n");  disp(A); |
| **Reduced Row Echelon Form 4x4** | clc  A = [3 -1 2 1 ; 2 -2 3 2 ; 1 -1 1 -1 ; 1 2 -1 3];  printf("The Matrix A is\n");  disp(A);  n = 4;  for i = 1:n  if A(i,i) == 0  A(i,:) = A(i,:);  else  A(i,:) = A(i,:) / A(i,i);  disp(A);  for j = 1:n-1  if i+j <= n  A(i+j,:) = A(i+j,:) - A(i+j,i)\*A(i,:);  end  end  end  end  for i = n:-1:2  for j = i-1:-1:1  A(j,:) = A(j,:) - A(j,i)\*A(i,:);  end  end  printf("The final matrix in row-reduced echelon form is: \n");  disp(A); |
| **Conclusion** | Hence, by completing this experiment I came to know about Implementation of Reduced Row Echelon Form in Scilab. |