Name: Abhishek Verma
Roll no. 2138118
Practical: Gauss Elimination Method

In[18]:=

```
(*Define the coefficients matrix A and the constants vector b*)
A = {{2, 3, -1}, {4, 4, -3}, {2, -3, 1}};
b = {7, 3, 6};
(*Augment the matrix A with the constants vector b*)
augmentedMatrix = ArrayFlatten[{{A, Transpose[{b}]}}];
(*Perform Gauss elimination*)
n = Length[augmentedMatrix];
Do[If[augmentedMatrix[[i, i]] == 0, Print["Error: Zero pivot found in row ", i];
  Break[];];
Do[If[j ≠ i, ratio = augmentedMatrix[[j, i]] / augmentedMatrix[[i, i]];
augmentedMatrix[[j]] = augmentedMatrix[[j]] - ratio * augmentedMatrix[[i]];
], {j, i + 1, n}], {i, 1, n - 1}];
(*Back-substitution to find the solution*)
solution = Table[augmentedMatrix[[i, n + 1]] / augmentedMatrix[[i, i]], {i, n}];
(*Display the solution*)
solution
```

Out[23]= $\left\{\frac{7}{2}, \frac{11}{2}, \frac{32}{5}\right\}$