**EXPERIMENT – 4(a)**

**Aim:** Exercise to solve equations by Gauss elimination in Scilab.

**Theory:**

**Gauss Elimination Method:**

1. Formulate a system of linear equations with a 3x3 coefficient matrix and a 3x1 constant matrix.
2. Write a Scilab script to implement Gauss elimination for solving the system.
3. Execute the script and display the intermediate steps, including the transformed augmented matrix and the final solution vector.

**Program:**

function[x]=gaussElimination(A,b)

n=length(b)

disp([A,b])

A1=A

b1=b

for i=1;n-1

m1=A(i,i)

A(i,:)=A(i,:)/m1

b(i)=b(i)/m1

for j=i+1:n

m2=A(j,i)

A(j,:)=A(j,:)-m2\*A(i,:)

b(j)=b(j)-m2\*b(i)

end

disp([A,b])

end

x=zeros(n,1)

for i=n:-1:1

s=0

for j=i+1:n

s=s+A(i,j)\*x(j)

end

x(i,1)=(b(i)-s)/A(i,i)

end

disp(x)

disp([A1\*x])

end

A=[2 1 1; 3 2 3; 1 4 9]

b=[10; 18; 16]

gaussElimination(A,b)

**Output:**

