```cpp
// Gauss Elimination
#include<iostream>
#include<iomanip>
using namespace std;
int main()
{
    int n,i,j,k;
    cout.precision(4);        //set precision
    cout.setf(ios::fixed);
    cout<<"\nEnter the no. of equations\n";
    cin>>n;                //input the no. of equations
    float a[n][n+1],x[n];        //declare an array to store the elements of augmented-matrix
    cout<<"\nEnter the elements of the augmented-matrix row-wise:\n";
    for (i=0;i<n;i++)            //Pivotisation
        for (k=i+1;k<n;k++)
            if (abs(a[i][i])<abs(a[k][i]))
                for (j=0;j<=n;j++)
                {
                    double temp=a[i][j];
                    a[i][j]=a[k][j];
                    a[k][j]=temp;
                }
    cout<<"\nThe matrix after Pivotisation is:\n";
    for (i=0;i<n;i++)            //print the new matrix
    {
        for (j=0;j<=n;j++)
            cout<<a[i][j]<<setw(16);
        cout<<"\n";
    }
    for (i=0;i<n-1;i++)            //loop to perform the gauss elimination
        for (k=i+1;k<n;k++)
        {
            double t=a[k][i]/a[i][i];
            for (j=0;j<=n;j++)
                a[k][j]=a[k][j]-t*a[i][j];    //make the elements below the pivot elements equal to zero or eliminate the variables
        }
    cout<<"\n\nThe matrix after gauss-elimination is as follows:\n";
    for (i=0;i<n;i++)            //print the new matrix
    {
        for (j=0;j<=n;j++)
            cout<<a[i][j]<<setw(16);
        cout<<"\n";
    }
    for (i=n-1;i>=0;i--)                //back-substitution
    {
        //x is an array whose values correspond to the values of
        x,y,z..
    }
}
```
C++ Program for Gauss-Elimination for solving a System of Linear Equations

```cpp
//make the variable to be calculated equal to the rhs of the last equation
    for (j=i+1; j<n; j++)
        if (j!=i) //then subtract all the lhs values except the coefficient of the variable whose value is being calculated
            x[i]=x[i]-a[i][j]*x[j];
x[i]=x[i]/a[i][i]; //now finally divide the rhs by the coefficient of the variable to be calculated
}
cout<"\nThe values of the variables are as follows:\n";
for (i=0; i<n; i++)
    cout<"x[i]<endl; // Print the values of x, y,z,....
return 0;
}
```

The matrix after Pivotisation is:

```
| 6.0000 | 1.0000 | -6.0000 | -5.0000 | 6.0000 |
| 0.0000 | 2.0000 | 0.0000  | 1.0000  | 0.0000 |
| 2.0000 | 2.0000 | 3.0000  | 2.0000  | -2.0000|
| 4.0000 | -3.0000| 0.0000  | 1.0000  | -7.0000|
```

The matrix after gauss-elimination is as follows:

```
| 6.0000 | 1.0000 | -6.0000 | -5.0000 | 6.0000 |
| 0.0000 | 2.0000 | 0.0000  | 1.0000  | 0.0000 |
| 0.0000 | 0.0000 | 5.0000  | 2.8333  | -4.0000|
| 0.0000 | 0.0000 | 0.0000  | 3.9600  | -7.8000|
```

The values of the variables are as follows:

```
-0.5000
1.0000
0.3333
-2.0000
```

Sample 1
The matrix after Pivotisation is:
4.0000  -2.0000  1.0000  15.0000
-3.0000  -1.0000  4.0000  8.0000
1.0000  -1.0000  3.0000  13.0000

The matrix after gauss-elimination is as follows:
4.0000  -2.0000  1.0000  15.0000
0.0000  -2.5000  4.7500  19.2500
0.0000  0.0000  1.8000  5.4000

The values of the variables are as follows:
2.0000
-2.0000
3.0000

Tutorial Video:

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