```c
/*Implementation of solution of system of linear equations by Gauss
Elimination method.
 Coded by Ashwini Kumar Singh on 10-Feb-2021*/

#include<stdio.h>
#include<math.h>

int main(void) {
    int i,j,k,N;

printf("\n**********************************************************************
**********\n");
    printf("\nImplementation of solution of system of linear equations
by Gauss Elimination method\n");
    printf("\nCoded by Ashwini Kumar Singh on 10-Feb-2021\n");

printf("\n**********************************************************************
**********\n");


    FILE *fp_in_1=fopen("a_matrix.txt","r");
    FILE *fp_in_2=fopen("b_matrix.txt","r");
    FILE *fp_out_1=fopen("upper_triangular.txt","w");
    FILE *fp_out_2=fopen("solution.txt","w");

    printf("\nEnter the value of n \n");
    scanf("%d",&N);

    double a[N][N],b[N],x[N];

    for(i=0;i<N;i++)
    {
        for(j=0;j<N;j++)
        {
            fscanf(fp_in_1,"%lf",&a[i][j]);
        }
        fscanf(fp_in_2,"%lf",&b[i]);
    }

    printf("\nThe matrices read from a_matrix.txt and b_matrix.txt
are:\n\n\t\tMatrix - A\t\t\tMatrix - B\n\n");
    for(i=0;i<N;i++)
    {
        for(j=0;j<N;j++)
        {
            printf("%lf\t",a[i][j]);
        }
        printf("\t%lf\n",b[i]);
    }

    /*Function: gauss_elimination*/
//Forward Elimination
    double factor;
    for(i=0;i<N-1;i++)
    {
        for(j=1;i+j<N;j++)
        {
            factor=-a[i+j][i]/a[i][i];
            b[i+j]+=b[i]*factor;
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            for(k=0;k<N;k++)
            {
                a[i+j][i+k]+=a[i][i+k]*factor;
            }
        }
    }
//Back Substitution
    x[N-1]=b[N-1]/a[N-1][N-1];
    for(i=N-2;i>=0;i--)
    {
        factor=(1/a[i][i]);
        x[i]=b[i]*factor;
        for(j=N-1;j>i;j--)
        {
            x[i]-=a[i][j]*x[j]*factor;
        }
    }

    fprintf(fp_out_2,"*****************\nSOLUTION
VECTOR\n*****************\n");
    printf("\n*****************\t\t*****************\nSOLUTION
VECTOR\t\t\tUPPER TRI-MATRIX\n*****************\t\t*****************\n");
    for(i=0;i<N;i++)
    {
        fprintf(fp_out_2,"%7.4lf\n\n",x[i]);
        printf("%7.4lf\t\t\t",x[i]);
        for(j=0;j<N;j++)
        {
            fprintf(fp_out_1,"%7.2lf",a[i][j]);
            printf("%7.2lf\t",a[i][j]);
        }
        fprintf(fp_out_1,"\n\n");
        printf("\n\n");
    }

    fclose(fp in 1);
    fclose(fp_in_2);
    fclose(fp_out_1);
    fclose(fp_out_2);


printf("\n*****************************************************************
**********************\n");
    printf("\nImplementation of solution of system of linear equations
by Gauss Elimination method\n");
    printf("\nCoded by Ashwini Kumar Singh on 10-Feb-2021\n");

printf("\n*****************************************************************
**********************\n");

    return 0;
}
```