```c
/*Implementation of solution of  linear equations by Gauss-Seidel's
iteration method.
 Coded by Ashwini Kumar Singh on 10-Feb-2021*/

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

int main() {
    int i,j,m,n,itrn;


printf("\n**********************************************************************
**********\n");
    printf("\nImplementation of solution of system of linear equations
by Gauss-Seidel's iteration 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 *output=fopen("outGaussSeidelItr.tsv","w");

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

    printf("\nEnter the number of iterations : ");
    scanf("%d",&itrn);

    double a[n][n],b[n],x[n],c;

    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\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]);
    }

    fprintf(output,"\nIteration");
    for(i=1;i<=n;i++)
        {
            fprintf(output,"\tJx%d",i);
        }

    for(m=1;m<=itrn;m++)
```

```
    {
       for(i=0;i<n;i++)
        {
        c=b[i];
        for(j=0;j<n;j++) {
            if(i!=j) {
                c=c-a[i][j]*x[j];
            }
        }
        x[i]=c/a[i][i];
        }

        printf("\n%d\t:\t",m);
        fprintf(output,"\n%d\t",m);
        for(i=0;i<n;i++)
            {
                printf("x(%d) = %f\t",i+1,x[i]);
                fprintf(output,"%f\t",x[i]);
            }

    }

    printf("\n\nThe Solution is : ");
    for(i=0;i<n;i++)
        {
            printf("x(%d) = %f\t",i+1,x[i]);
        }
    printf("\n\n");
}
```