```
#include <stdio.h>
#include <time.h>

double time1, time2, timedif1, timedif2;

int main (void)
        {
                int i, j, k, p, tr;
                clock_t time1, time2;

                int A[3][3] = {{4,1,5},
                                        {3,-2,1},
                                        {-4, 3,-1}};
                int  B[3][3] = {{1, -4, 5},
                                        {3, 2, 0},
                                        {-2, -3, 2}};
                int C[3][3] = {{0, 0, 0},
                                        {0, 0, 0},
                                        {0, 0, 0}};


   /* Compute matrix multiplication c=a*b */

                time1 = (double) clock();           /* get initial time */
                time1 = time1 / CLOCKS_PER_SEC;


                        for (i=0; i<3; i++)
                                {
                                        for (j=0; j<3; j++)
                                                {

                                                        C[i][j]=0;
                                                        for (k=0; k<3; k++)
                                                                {
                                                                C[i][j]=C[i][j]+A[i][k]*B[k][j];
                                                                }
                                                }
                                }



                for(p=1; p<1000; p++)

                        {
                                for( i = 0; i < 3; i++ )
                                        {
                                                for(j = 0; j < 3; j++ )
```

```
                                printf(" %2d ", C[i][j]);
                                printf(" \n ");
                        }
        }

        timedif1 = ( ((double) clock()) / CLOCKS_PER_SEC) - time1;

        printf("\n\n%d %d \n", (double) time1, (double)timedif1 );
        printf("The elapsed time in multiplication of matrix is %f seconds\n", timedif1);

        /* Compute the trace of c, tr(c)=sum(diag(c)) */

        time2 = (double) clock();
        time2 = time2 / CLOCKS_PER_SEC;

        tr=0;

        for (i=0; i<3; i++)

        tr=tr+C[i][i];

        /* Print result */

        printf("\nThe trace of a*b is %d\n",tr);

        timedif2 = ( ((double) clock()) / CLOCKS_PER_SEC) - time2;

        printf("\n\n%d %d \n", (double) time2, (double)timedif2 );
        printf("The elapsed time in multiplication of matrix is %f seconds\n", timedif2);

        return 0;
}
```