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#include <stdio.h>
main(void)
{
    double a[10][10]={ {0}, {0,1,3,7}, {0,5,8,10}, {0,4,9,2,0} };
    double a0[10][10]={ {0}, {0,1,3,7}, {0,5,8,10}, {0,4,9,2,0} };
    double b[10][10]={ {1,0,0}, {0,1,0}, {0,0,1,0}, {0,0,0,1,0} };
    double c[10][10];
    double m1,m2;
    int pivot,i,j,k,il,jl,n=3;
    printf("The matrix to be inverted is:\n");
    for(il=1;il<=n;il++)
    {
        for(jl=1;jl<=n;jl++)
        {
            printf( "%8.2f",a0[il][jl]);
        }
        printf("\n");
    }
    printf("\n");
    printf("The Inversion Process:\n");
    printf(" [      The matrix to be inverted ;      the identity matrix  ] is:\n\n");
    for(il=1;il<=n;il++)
    {
        printf(" | ");
        for(jl=1;jl<=n;jl++)
        {
            printf( "%8.2f",a[il][jl]);
        }
        printf("      ");
        for(jl=1;jl<=n;jl++)
        {
            printf( "%8.2f",b[il][jl]);
        }
        printf(" | \n");
    }
}

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}
printf("\n\n");
for(pivot=1;pivot<=n;pivot++)
{
    m1=a[pivot][pivot];
    for(i=1;i<=n;i++)
    {
        a[pivot][i]=a[pivot][i]/m1;
        b[pivot][i]=b[pivot][i]/m1;
    }
    for(j=1;j<=n;j++)
    {
        if(j!=pivot)
        {
            m2=a[j][pivot];
            for(k=1;k<=n;k++)
            {
                a[j][k]=a[j][k]-m2*a[pivot][k];
                b[j][k]=b[j][k]-m2*b[pivot][k];
            }
        }
    }
    for(i1=1;i1<=n;i1++)
    {
        printf(" | ");
        for(j1=1;j1<=n;j1++)
        {
            printf(" %8.2f",a[i1][j1]);
        }
        printf("      ");
        for(j1=1;j1<=n;j1++)
        {
            printf(" %8.2f",b[i1][j1]);
        }
    }
}

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        printf(" | \n");
    }
    printf("\n\n");
}
for(i=1;i<=n;i++)
{
    for(j=1;j<=n;j++)
    {
        c[i][j]=0;
        for(k=1;k<=n;k++)
        {
            c[i][j]=c[i][j]+a0[i][k]*b[k][j];
        }
    }
}
printf("Check the result:\n");
printf("By multiplying the matrix and its inverse\n");
printf("in order to obtain the identity matrix :\n\n");
for(il=1;il<=n;il++)
{
    for(jl=1;jl<=n;jl++)
    {
        printf( "%15.8f",c[il][jl]);
    }
    printf("\n");
}
printf("\n\nThe result is verified by some minimal round-off error!\n\n");
return(0);
}

```