```c
#include<stdio.h>
#include<math.h>
int main()
{
int i,j,flag,n;
float a[5][5],x[5],y[5],max1,max2,eps=1.e-7;
printf("Enter the dimension of the matrix:\n");
scanf("%d",&n);
printf("\nEnter the given matrix:\n");
for(i=1;i<=n;i++)
{
for(j=1;j<=n;j++)
{
scanf("%f",&a[i][j]);
}
}
for(i=1;i<=n;i++)
{
y[i]=1.0;
}
max1=1.e7;
do
{
for(i=1;i<=n;i++)
{
x[i]=y[i];
y[i]=0.;
}
max2=max1;
for(i=1;i<=n;i++)
{
for(j=1;j<=n;j++)
{
y[i]=y[i]+a[i][j]*x[j];
}
}
max1=y[1];
for(j=2;j<=n;j++)
{
if(fabs(max1)<fabs(y[j]))
{
max1=y[j];
}
}
for(i=1;i<=n;i++)
{
y[i]=y[i]/max1;
}
flag=0;
for(i=1;i<=n;i++)
{
if(fabs(y[i]-x[i])>eps)
{
flag=1;
}
}
}
while((fabs(max1-max2)>eps)||flag==1);
printf("\n The largest eigen value=%7.5f\n",max1);
printf("The corresponding eigen vector is:\n");
```

```
for(i=1;i<=n;i++)
{
printf("%7.5f \n",y[i]);
}
printf("(Correct up to four decimal places)");
}

//*Output*//
Enter the dimension of the matrix:
4

Enter the given matrix:
8.46 3.24 1.24 -0.18
3.24 9.92 0.77 -0.55
1.24 0.77 10.24 2.89
-0.18 -0.55 2.89 7.01

 The largest eigen value=13.30595
The corresponding eigen vector is:
0.88440
1.00000
0.88602
0.29406
(Correct up to four decimal places)
```