```c
/*Largest eigen value and cooresponding eigen vectors*/

#include<stdio.h>

int main()
{
    float matrix[10][10],x[20],y[20],m;
int i, j, k, n;
printf("Enter order of matrix: ");
scanf("%d", &n);
printf("Enter the matrix: \n");
for(i = 0; i< n; i++){
for(j = 0; j < n; j++){
scanf("%f", &matrix[i][j]);
x[i]=1;
     }
  }
for(k=0;k<15;k++)
  {
        for(i=0;i<n;i++)
        {
                y[i]=0;
                for(j=0;j<n;j++)
                y[i]=y[i]+matrix[i][j]*x[j];

          }
                m=y[0];
                for(i=1;i<n;i++)
                {
                        if(m<y[i])
                        m=y[i];
                }
                 printf("\ny(%d)=%f",i,m);
                for(i=0;i<n;i++)
                x[i]=y[i]/m;
        }

        printf("\nNumerically the largest eigen value is %f \n",m);
        printf("\n\n the corresponding eigen vector is:");
        for(i=0;i<n;i++)
        printf("\n x[%d]=%f",i,x[i]);
}
```