

```

1  #include<stdio.h>
2  #include<math.h>
3  #include<stdlib.h>
4  void nhap(FILE *f, int n , int m, float *a, float *b);
5  float tinh(int n, float *a, int d1);
6  void Hieu(float*a,float *b,int n,float *c, int m);
7  int main(){
8      FILE*f;
9      float *a,*b, *c;float p,q;
10     int n,m, d1,d2;
11     f= fopen("input.txt", "r");
12     fscanf(f,"%d %d", &n,&m);
13     // cap phat bo nho
14     a=(float*)malloc((n+1)*sizeof(int));
15     b=(float*)calloc(m+1,sizeof(int));
16     nhap(f,n,m,a,b);
17     fclose(f);
18     scanf ("%d%d",&d1,&d2);
19     f=fopen("output.txt","w");
20     printf ( "px / qx = %f",tinh(n,a,d1)/tinh(m,b,d2));
21     fprintf (f, "px / qx = %f",tinh(n,a,d1)/tinh(m,b,d2));
22     fclose(f);
23     Hieu(a,b,n,c,m);
24 }
25 void nhap(FILE *f, int n , int m, float *a, float *b){
26     for (int i=0;i<=n; i++) fscanf(f,"%f", a+i);
27     for (int i =0;i<=m;i++) fscanf(f,"%f" , b+i);
28 }
29 float tinh(int n, float *a, int d1){

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28 }
29 float tinh(int n, float *a, int d1){
30     float p =0;
31     for(int i=0;i<=n;i++) {
32         p=p+a[i]*pow(d1,i);
33     }
34     return p;
35 }
36 void Hieu(float*a,float *b,int n,float *c, int m)
37 {   int k,i;
38     if(n>m) {
39         k=n;
40         for(i=0;i<=m;i++){
41             c[i]=a[i]-b[i];}
42
43         for(i=m+1;i<=n;i++) c[i]=a[i];
44     }else{
45         k=m;
46         for(i=0;i<=n;i++){
47             c[i]=b[i]-a[i];}
48         for(i=n+1;i<=m;i++) c[i]=-b[i];
49     }
50     for(i =0 ;i<= k;i++){
51         printf ( " %d " , c[i]);}}
52

```



```

1  #include <stdio.h>
2  #include <stdlib.h>
3  #include <math.h>
4  // bai 2
5  void nhap(FILE *f, float *a, int m, int n,int N);
6  void xuat(float *a, int m, int n,int N) ;
7  void xuattep(FILE *f1,float *a, int m, int n,int N);
8  float trungbc(float *a, int m, int n,int N );
9  float timamdau(float *a, int m, int n,int N);
10 void ammax(float *a, int m, int n,int N);
11 void ammaxfile(FILE *f1,float *a, int m, int n,int N);
12 void tichhangvamin(float *a, int m, int n,int N);
13 void filetichhangvamin(FILE *f1,float *a, int m, int n,int N);
14 int countduong(float *a, int m, int n,int N);
15
16 int main() {
17     FILE *f, *f1;
18     f= fopen ("matran.txt","r");
19     int m, n;
20     float **a;
21     fscanf(f,"%d %d\n",&m,&n);
22     a = (float **)malloc(m *sizeof(int *));
23     for (int j=0 ; j<n ; j++){
24         a[j]= (float *)malloc (n *sizeof(int));
25     }
26     nhap(f, *a, m, n, 50);
27     fclose(f);

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25     }
26     nhap(f, *a, m, n, 50);
27     fclose(f);
28     xuat(*a,m,n, 50);
29     f1= fopen ("xuatmatran.txt","w");
30     xuattep(f1,*a,m,n, 50);
31     printf ( "trung binh cong cac so am cua ma tran la %0.5f",trungbc(*a, m,n,50) );
32     fprintf (f1, "trung binh cong cac so am cua ma tran la %0.5f",trungbc(*a, m,n,50) );
33     timamdau(*a,m,n,50);
34     ammax( *a,m, n,50);
35     fprintf (f1,"\\nphan tu am dau tien cua ma tran la %f",timamdau(*a,m,n,50));
36     ammaxfile(f1,*a, m,n,50);
37     tichhangvamin(*a, m, n, 50);
38     filetichhangvamin(f1, *a, m, n,50);
39     printf ("so phan tu duong cua ma tran la %d",countduong(*a,m, n,50));
40     public int __cdecl printf (const char * __restrict __Format, ...)htduong(*a,m, n,50));
41     fclose(f1);
42     free (a);
43 }
44 void nhap(FILE *f, float *a, int m, int n,int N){
45     for (int i=0; i<m;i++){
46         for (int j=0 ; j<n ; j++){
47             fscanf (f,"%f ", a+i*N+j);
48         }
49     }
50 }

```

```

50 }
51 void xuat(float *a, int m, int n, int N){
52     printf ("ma tran vua nhap la :\n");
53     printf ("%d %d\n", m, n);
54     for (int i=0; i<m; i++){
55         for (int j=0; j<n; j++){
56             printf ("%1.f ", *(a+i*N+j));
57         }
58         printf ("\n");
59     }
60 }
61 void xuattep(FILE *f1, float *a, int m, int n, int N){
62     fprintf (f1, "%d %d\n", m, n);
63     for (int i=0; i<m; i++){
64         for (int j=0; j<n; j++){
65             fprintf (f1, "%1.f ", *(a+i*N+j));
66         }
67         fprintf (f1, "\n");
68     }
69 }
70 float trungbc(float *a, int m, int n, int N ){
71     float sum = 0;
72     int count = 0;
73     for (int i=0; i<m; i++){
74         for (int j=0; j<n; j++){
75             if ( *(a+i*N+j) < 0){
76                 sum += *(a+i*N+j);
77                 count++;

```



```

74     for (int j=0 ; j<n ; j++){
75         if ( *(a+i*N+j) < 0){
76             sum +=*(a+i*N+j);
77             count ++;
78         }
79     }
80     }return sum/count;
81 }
82 float timamdau(float *a, int m, int n,int N){
83     for (int i=0; i<m;i++){
84         for (int j=0 ; j<n ; j++){
85             if ( *(a+i*N+j) < 0) return *(a+i*N+j);
86         }
87     }
88 }
89 void ammax(float *a, int m, int n,int N){
90     float max = timamdau(a,m,n,50);
91     int luui,luuj;
92     for (int i=0; i<m;i++){
93         for (int j=0 ; j<n ; j++){
94             if ( *(a+i*N+j) < 0 && *(a+i*N+j) > max){
95                 max = *(a+i*N+j); luui = i; luuj = j;
96             }
97         }
98     }
99     printf ("\n gia tri am lon nhat la a[%d][%d] = %.1f",luui,luuj,max);
100 }

```

```

100 }
101 void ammaxfile(FILE *f1, float *a, int m, int n, int N){
102     float max = timamdau(a, m, n, 50);
103     int luui, luuj;
104     for (int i=0; i<m; i++){
105         for (int j=0 ; j<n ; j++){
106             if ( *(a+i*N+j) < 0 && *(a+i*N+j) > max){
107                 max = *(a+i*N+j); luui = i; luuj = j;
108             }
109         }
110     }
111     fprintf (f1, "\n gia tri am lon nhat la a[%d][%d] = %.1f", luui, luuj, max);
112 }
113 void tichhangvamin(float *a, int m, int n, int N){
114     int count = 0;
115     float t[50];
116     for (int i=0; i<m; i++){
117         t[i] = 1;
118         for (int j=0 ; j<n ; j++){
119             t[i] *= *(a+i*N+j);
120         }
121         printf ("\ntich hang thu %d la %.1f ", count, t[i]);
122         count ++;
123     }
124     float min = t[0]; int k;
125     for (int i=0; i<m; i++){
126         for (int j=0 ; j<n ; j++){

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125 for (int i=0; i<m; i++){
126     for (int j=0 ; j<n ; j++){
127         if ( min > t[i]){
128             min = t[i];
129             k=i;
130         }
131     }
132 }
133 for (int i=0; i<m;i++){
134     if ( min == t[i]) printf("\ntich min la cua hang thu %d = %.1f\n", k, min);
135 }
136 }
137 void filetichhangvamin(FILE *f1, float *a, int m, int n, int N){
138     int count = 0;
139     float t[50];
140     for (int i=0; i<m;i++){
141         t[i] = 1;
142         for (int j=0 ; j<n ; j++){
143             t[i] *= *(a+i*N+j);
144         }
145         fprintf (f1, "\ntich hang thu %d la %.1f ", count, t[i]);
146         count ++;
147     }
148     float min = t[0]; int k;
149     for (int i=0; i<m;i++){
150         for (int j=0 ; j<n ; j++){

```



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147
148 float min = t[0]; int k;
149 for (int i=0; i<m;i++){
150     for (int j=0 ; j<n ; j++){
151         if ( min > t[i]){
152             min = t[i];
153             k=i;
154         }
155     }
156 }
157 for (int i=0; i<m;i++){
158     if ( min == t[i]) fprintf(f1,"\ntich min la cua hang thu %d = %.1f\n", k, min);
159 }
160 }
161 int countduong(float *a, int m, int n,int N){
162     int count = 0;
163     for (int i=0; i<m;i++){
164         for (int j=0 ; j<n ; j++){
165             if (*(a+i*N+j) > 0 ) count ++;
166         }
167     }
168     return count;
169 }

```

```
1  #include <stdio.h>
2  #include <stdlib.h>
3  #include <math.h>
4  // bai 1.3
5  void nhap(FILE *f, float *x, float *y, int n);
6  void xuat( float *x, float *y, int n);
7  void xuatfile( FILE *f1,float *x, float *y, int n);
8  void khoangcach(float *x, float *y, int n);
9  void filekhoangcach(FILE *f1,float *x, float *y, int n);
10 void doanainhat(float *x, float *y, int n);
11 void filedoanainhat(FILE *f1,float *x, float *y, int n);
12
13 ☐ int main () {
14     FILE *f,*f1;
15     f = fopen( "toado.txt", "r");
16     float *x,*y; int n;
17     fscanf(f,"%d\n",&n);
18     x = (float *)malloc((n+1) *sizeof(int ));
19     y = (float *)malloc((n+1) *sizeof(int ));
20     nhap(f, x, y,n);
21     fclose(f);
22     xuat( x, y, n);
23     f1=fopen ( "xuattoado.txt","w");
24     xuatfile( f1,x,y,n);
25     khoangcach(x, y, n);
26     filekhoangcach(f1,x,y,n);
27     doanainhat(x, y,n);
```

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25     khoangcach(x, y, n);
26     filekhoangcach(f1,x,y,n);
27     doanainhat(x, y,n);
28     filedoanainhat(f1,x,y,n);
29     fclose(f1);
30     free(x);
31     free(y);
32 }
33 void nhap(FILE *f, float *x, float *y, int n){
34     for (int i =0;i<n;i++){
35         fscanf ( f, "(%f,%f)\n", &x[i],&y[i]);
36     }
37 }
38 void xuat( float *x, float *y, int n){
39     printf ( "ma tran cua nhap la :\n");
40     printf ( "%d\n",n);
41     for (int i =0;i<n;i++){
42         printf ("(%.0f,%.0f)\n", x[i],y[i]);
43     }
44 }
45 void xuatfile( FILE *f1,float *x, float *y, int n){
46     fprintf ( f1,"ma tran cua nhap la : \n");
47     fprintf ( f1,"%d\n",n);
48     for (int i =0;i<n;i++){
49         fprintf (f1,"(%.0f,%.0f)\n", x[i],y[i]);
50     }
51 }

```



```

51 }
52 void khoangcach(float *x, float *y, int n){
53     float d;
54     printf (" khoang cach cac diem den truc hoan la :\n");
55     for (int i =0;i<n;i++){
56         d = abs(y[i]);
57         printf ("d((x[%d],y[%d])) = %.3f\n", i,i,d);
58     }
59 }
60 void filekhoangcach(FILE *f1,float *x, float *y, int n){
61     float d;
62     fprintf (f1," khoang cach cac diem den truc hoan la :\n");
63     for (int i =0;i<n;i++){
64         d = abs(y[i]);
65         fprintf (f1,"d((x[%d],y[%d])) = %.1f\n", i,i,d);
66     }
67 }
68 void doanainhat(float *x, float *y, int n){
69     float s[50][50];
70     float max = s[0][0];
71     int a,b;
72     for (int i =0;i<n-1;i++){
73         for (int j =i+1;j<n;j++){
74             s[i][j] = sqrt(pow(x[i]-x[j],2)+pow(y[i]-y[j],2));
75         }
76     }

```

```

76 | }
77 | for (int i =0;i<n-1;i++){
78 |     for (int j =i+1;j<n;j++){
79 |         if (s[i][j] > max){
80 |             max = s[i][j];
81 |             a=i; b=j;
82 |         }
83 |     }
84 | }
85 | printf ( "\n do dai doan thang dai nhat giua n diem la x[%d]y[%d] --> x[%d]y[%d] = %.f", a,a,b,b,max);
86 | }

```

```

84     }
85     printf ( "\n do dai doan thang dai nhat giua n diem la x[%d]y[%d] --> x[%d]y[%d] = %.f", a,a,b,b,max);
86 }
87 void filedoanainhat(FILE *f1,float *x, float *y, int n){
88     float s[50][50];
89     float max = s[0][0];
90     int a,b;
91     for (int i =0;i<n-1;i++){
92         for (int j =i+1;j<n;j++){
93             s[i][j] = sqrt(pow(x[i]-x[j],2)+pow(y[i]-y[j],2));
94         }
95     }
96     for (int i =0;i<n-1;i++){
97         for (int j =i+1;j<n;j++){
98             if (s[i][j] > max){
99                 max = s[i][j];
100                 a=i; b=j;
101             }
102         }
103     }
104     fprintf (f1, "\n do dai doan thang dai nhat giua n diem la x[%d]y[%d] --> x[%d]y[%d] = %.f", a,a,b,b,max);
105 }

```



```
1  #include <stdio.h>
2  #include <stdlib.h>
3  #include <math.h>
4  // bai 1.4 hình chu nhật
5  void nhap(FILE *f, float *x, float *y, int n);
6  void xuat( float *x, float *y, int n);
7  void xuatfile(FILE *f1, float *x, float *y, int n);
8  float dientichtb(float *x, float *y, int n);
9  void timsmax(float *x, float *y, int n);
10 void filetimsmax(FILE *f1, float *x, float *y, int n);
11
12 int main () {
13     FILE *f,*f1;
14     f = fopen( "chunhat.txt", "r");
15     float *x,*y; int n;
16     fscanf(f,"%d\n",&n);
17     x = (float *)malloc((n+1) *sizeof(int ));
18     y = (float *)malloc((n+1) *sizeof(int ));
19     nhap(f, x, y,n);
20     fclose(f);
21     f1 = fopen( "xuatchunhat.txt", "w");
22     xuat( x, y, n);
23     xuatfile(f1,x,y,n);
24     printf ("\ndien tich trung binh cua cac hcn la %.3f",dientichtb(x, y, n));
25     fprintf(f1,"\ndien tich trung binh cua cac hcn la %.3f",dientichtb(x, y, n));
26     timsmax(x, y, n);
```

```

25     fprintf(f1, "\ndien tich trung binh cua cac hcn la %.3f", dientichtb(x, y, n));
26     timsmax(x, y, n);
27     filetimsmax(f1, x, y, n);
28     fclose(f1);
29     free(x);
30     free(y);
31 }
32 void nhap(FILE *f, float *x, float *y, int n){
33     for (int i = 0; i < n; i++){
34         fscanf ( f, "%f,%f\n", &x[i], &y[i]);
35     }
36 }
37 void xuat( float *x, float *y, int n){
38     printf ( "cac hinh chu nhat vua nhap la :\n");
39     printf ( "%d\n", n);
40     for (int i = 0; i < n; i++){
41         printf ( "%.1f,%.1f\n", x[i], y[i]);
42     }
43 }
44 void xuatfile(FILE *f1, float *x, float *y, int n){
45     fprintf (f1, "cac hinh chu nhat vua nhap la :\n");
46     fprintf (f1, "%d\n", n);
47     for (int i = 0; i < n; i++){
48         fprintf (f1, "%.1f,%.1f\n", x[i], y[i]);
49     }
50 }

```

```

51 float dientichtb(float *x, float *y, int n){
52     float s = 0;
53     for (int i = 0; i < n; i++){
54         s += x[i]*y[i];
55     }
56     return s/n;
57 }
58 void timsmax(float *x, float *y, int n) {
59     float max = x[0]*y[0];
60     int a;
61     float b, c;
62     for (int i = 0; i < n; i++){
63         if ( x[i]*y[i] > max ) {
64             max = x[i]*y[i];
65             a = i;
66             b = x[i];
67             c = y[i];
68         }
69     }
70     printf ("\n\nhcn co dien tich max la hinh thu %d co kich thuoc %.1f,%.1f la %.2f ", a, b, c, max);
71 }

```



```

68     }
69 }
70 printf ("\n\nhcn co dien tich max la hinh thu %d co kich thuoc %.1f,%.1f la %.2f ", a,b,c,max);
71 }
72 void filetimsmax(FILE *f1,float *x, float *y, int n) {
73     float max = x[0]*y[0];
74     int a;
75     float b,c;
76     for (int i =0;i<n;i++){
77         if ( x[i]*y[i] > max ) {
78             max = x[i]*y[i];
79             a = i;
80             b = x[i];
81             c = y[i];
82         }
83     }
84     fprintf (f1,"\n\nhcn co dien tich max la hinh thu %d co kich thuoc %.1f,%.1f la %.2f ", a,b,c,max);
85 }
86 public int __cdecl fprintf (FILE * __restrict__ _File, const char * __restrict__ _Format, ...)

```

```
1  #include <stdio.h>
2  #include <string.h>
3  #include <conio.h>
4  #include <stdlib.h>
5
6  struct sach {
7      char tens[30];
8      char nxb[30];
9      int gia;
10 };
11 typedef sach s;
12
13 void read(FILE *f, s *a, int n);
14 void xuat(s *a, int n);
15 void dem(s *a, int n, char *ten);
16 void xuatfile(FILE *f1, s *a, int n);
17 void swap(s *a, int n);
18
```

```
19 int main (){
20     FILE *f,*f1;char ten[30];
21     int n;
22     f= fopen ("input.txt", "r");
23     sach *a;
24     fscanf(f,"%d\n",&n);
25     a= (sach*)malloc((n+1)*sizeof(sach));
26     read(f,a,n);
27     xuat(a,n);
28     fclose(f);
29     printf("\n");
30     fflush(stdin); gets(ten);
31     dem(a,n, ten);
32     f1=fopen("output.txt","w");
33     xuatfile(f1,a, n);
34     printf ("\n\n");
35     swap(a, n);
36     xuat(a,n);
37     fclose(f1);
38     free(a);
39 }
```



```

40 void read(FILE *f, s *a,int n){
41     for (int i=0; i<n; i++){
42         fscanf(f,"%[^\\n]\\n", a[i].tens);fflush(stdin);
43         fscanf(f,"%[^\\n]\\n", a[i].nxb);
44         fscanf(f,"%d\\n", &a[i].gia);
45     }
46 }
47 void xuat(s *a,int n){
48     printf("%d\\n",n);
49     for (int i=0; i<n; i++){
50         printf("%s\\n", a[i].tens);fflush(stdin);
51         printf("%s\\n", a[i].nxb);
52         printf("%d\\n", a[i].gia);
53     }
54 }
55 void dem(s *a,int n,char* ten){
56     int dem = 0;
57     for (int i=0; i<n; i++){
58         if ( strcmp(a[i].nxb , ten ) == 0) {
59             dem+=1 ;
60         }
61     }
62     printf ("\\nso cuon sach co nha xuat ban ten %s la %d ",ten,dem);
63 }

```

```

63 }
64 void xuatfile(FILE *f1,s *a,int n){
65     fprintf(f1,"%d\n",n);
66     for (int i=0; i<n; i++){
67         fprintf(f1,"%s\n", a[i].tens);fflush(stdin);
68         fprintf(f1,"%s\n", a[i].nxb);
69         fprintf(f1,"%d\n", a[i].gia);
70     }
71 }
72 void swap(s *a, int n) {
73     s k;
74     for (int i=0; i<n-1; i++){
75         for (int j=i+1; j<n; j++){
76             if (a[i].gia < a[j].gia){
77                 k = a[i];
78                 a[i] = a[j];
79                 a[j] = k;
80             }
81         }
82     }
83 }

```