<소스코드>

#include<stdio.h>

#include<stdlib.h>

#define max 10

FILE \*ofp;

typedef struct vec

{

int x;

} vec;

void swap(int \*a, int \*b)

{

int c;

c = \*a;

\*a = \*b;

\*b = c;

}

void insert(vec \*a)

{

for (int i = 0; i < max; i++)

{

for (int j = i; j > 0; j--)

{

if (a[j].x < a[j - 1].x) swap(&a[j].x, &a[j - 1].x);

}

}

}

void insertr(vec \*a)

{

for (int i = 0; i < max; i++)

{

for (int j = i; j > 0; j--)

{

if (a[j\*max].x <a[(j-1)\*max].x) swap(&a[j\*max].x,&a[(j-1)\*max].x);

}

}

}

void bubble(vec \*a)

{

for (int i = max-1; i >0; i--)

{

for (int j = 1; j <=i; j++)

{

if (a[j].x < a[j - 1].x) swap( &a[j].x, &a[j - 1].x );

}

}

}

void bubbler(vec \*a)

{

for (int i = max - 1; i >0; i--)

{

for (int j = 1; j <= i; j++)

{

if (a[j\*max].x < a[(j - 1)\*max].x) swap(&a[j\*max].x, &a[(j - 1)\*max].x);

}

}

}

void arr\_print(vec \*a)

{

for (int i = 0; i < max; i++)

{

fprintf(ofp,"%5d", a[i].x);

}

fprintf(ofp,"\n");

}

int main()

{

vec arr\_insert[max][max];

vec arr\_bubble[max][max];

ofp = fopen("data.txt", "w+");

int i, j;

fprintf(ofp,"=== insert 정렬 전 ===\n");

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

{

for (j = 0; j < max; j++)

{

arr\_insert[i][j].x = (int)((double)rand() / RAND\_MAX \* 100);

fprintf(ofp,"%5d", arr\_insert[i][j].x);

}

fprintf(ofp,"\n");

}

fprintf(ofp,"=== insert 가로 정렬 후 ===\n");

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

{

insert(arr\_insert[i]);

}

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

{

arr\_print(arr\_insert[i]);

}

fprintf(ofp,"=== insert 세로 정렬 후 ===\n");

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

{

insertr(&arr\_insert[0][i]);

}

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

{

arr\_print(arr\_insert[i]);

}

fprintf(ofp,"\n\n");

fprintf(ofp,"=== bubble 정렬 전 ===\n");

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

{

for (j = 0; j < max; j++)

{

arr\_bubble[i][j].x = (int)((double)rand() / RAND\_MAX \* 100);

fprintf(ofp,"%5d", arr\_bubble[i][j].x);

}

fprintf(ofp,"\n");

}

fprintf(ofp,"=== bubble 가로 정렬 후 ===\n");

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

{

bubble(arr\_bubble[i]);

}

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

{

arr\_print(arr\_bubble[i]);

}

fprintf(ofp,"=== bubble 세로 정렬 후 ===\n");

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

{

bubbler(&arr\_bubble[0][i]);

}

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

{

arr\_print(arr\_bubble[i]);

}

}

<결과>

 