#include<iostream>

using namespace std;

void qipao(int test[],int n) {

int i, j, temp;

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

for (j = 0; j <n - i-1; j++)

if (test[j] > test[j + 1])

{

temp = test[j];

test[j] = test[j + 1];

test[j + 1] = temp;

}

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

cout << test[i] << "\t";

cout << endl;

}

void zhijiecharu(int test[], int n) {

int t[11];

int j;

for (int i = 1; i < 11; i++) {

t[i] = test[i - 1];

}

for (int i = 2; i < 11; i++) {\

if (t[i] < t[i - 1]) {

t[0] = t[i];

t[i] = t[i - 1];

for ( j = i-2; t[0]<t[j]; j--)

{

t[j + 1] = t[j];

}

t[j + 1] = t[0];

}

}

for (int i = 1; i < 11; i++)

cout << t[i] << "\t";

cout << endl;

}

void qucklysort(int test[], int low, int high) {

if (low < high)

{

int i, j;

i = low; j = high;

int temp = test[low];

while (i < j)

{

while (i<j && test[j]>=temp) j--;

if (i < j)

{

test[i++] = test[j];

}

while (i < j && test[i] <= temp) i++;

if (i < j)

{

test[j--] = test[i];

}

}

test[i] = temp;

qucklysort(test, low, i - 1);

qucklysort(test, i+1,high);

}

}

void xuersort(int test[], int n) {

int hill = int(n / 2);

int i, j,temp;

while (hill >= 1) {

for ( i = hill; i < n; i++) {

temp = test[i];

j = i;

while (test[j - hill] > temp && j - hill >= 0) {

test[j] = test[j - hill];

j -= hill;

}

test[j] = temp;

}

hill = int(hill / 2);

}

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

cout << test[i] << "\t";

cout << endl;

}

void menu() {

cout << "1.起泡排序" << endl;

cout << "2.直接插入排序" << endl;

cout << "3.快速排序" << endl;

cout << "4.希尔排序" << endl;

}

int main()

{

int choice;

int test[10] = { 25,30,1,85,13,20,95,33,24,68 };

menu();

while (1)

{

cout << "请输入操作序号" << endl;

cin >> choice;

switch (choice)

{

case 1:

qipao(test, 10);

break;

case 2:

zhijiecharu(test, 10);

break;

case 3:

qucklysort(test, 0, 9);

for (int i = 0; i <10; i++)

cout << test[i] << "\t";

cout << endl;

break;

case 4:

xuersort(test, 10);

break;

default:

break;

}

}

system("pause");

return 0;

}

