Bài 1

#include <iostream>

using namespace std;

void nhap\_day(double\* arr, int n) {

cout << endl;

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

cout << "Nhap phan tu thu " << (i + 1) << ": ";

if (!(cin >> arr[i])) {

exit(1);

}

}

cout << endl;

}

void hoan\_vi(double\* arr, int i, int j) {

double temp = arr[i];

arr[i] = arr[j];

arr[j] = temp;

}

void sap\_xep(double\* arr, int n) {

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

int minIdx = i;

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

minIdx = (arr[minIdx] < arr[j]) ? minIdx : j;

}

hoan\_vi(arr, i, minIdx);

}

}

int main() {

int n;

cout << "So phan tu muon nhap: ";

if (!(cin >> n)) {

return 1;

}

double\* arr = new double[n];

nhap\_day(arr, n);

sap\_xep(arr, n);

cout << "===" << endl << "Day da duoc sap xep:" << endl;

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

cout << arr[i];

if (i < n - 1) {

cout << ", ";

} else {

cout << endl;

}

}

return 0;

}

Bài 2

#include <iostream>

using namespace std;

typedef struct {

string name;

double diem;

} ThiSinh;

void nhap\_day(ThiSinh\* arr, int n) {

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

cout << endl << "Thi sinh thu " << (i + 1) << ":" << endl;

cout << "Ten: ";

fflush(stdin);

getline(cin, arr[i].name);

cout << "Diem: ";

if (!(cin >> arr[i].diem)) {

exit(1);

}

}

}

void hoan\_vi(ThiSinh\* arr, int i, int j) {

ThiSinh temp = arr[i];

arr[i] = arr[j];

arr[j] = temp;

}

void sap\_xep(ThiSinh\* arr, int n) {

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

int maxIdx = i;

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

maxIdx = (arr[maxIdx].diem > arr[j].diem) ? maxIdx : j;

}

hoan\_vi(arr, maxIdx, i);

}

}

void in\_thisinh(ThiSinh thiSinh) {

printf("%-30s%-11.2f", thiSinh.name.c\_str(), thiSinh.diem);

cout << endl;

}

int main(int argc, char\*\* argv) {

int n;

cout << "So thi sinh muon nhap: ";

if (!(cin >> n)) {

return 1;

}

ThiSinh\* arr = new ThiSinh[n];

nhap\_day(arr, n);

sap\_xep(arr, n);

cout << "===" << endl;

printf("%-30s%-11s", "Ten", "Tong diem");

cout << endl;

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

in\_thisinh(arr[i]);

}

return 0;

}

Bài 3

#include <iostream>

using namespace std;

void nhap(int n, int\* mangA) {

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

cout << "Nhap phan tu thu " << (i + 1) << ": ";

if (!(cin >> mangA[i])) {

exit(1);

}

}

}

int\* sapxep(int n, int\* mangA) {

int\* ret = new int[n];

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

ret[i] = mangA[i];

}

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

int minIdx = i;

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

minIdx = (ret[j] < ret[minIdx]) ? j : minIdx;

}

int temp = ret[i];

ret[i] = ret[minIdx];

ret[minIdx] = temp;

}

return ret;

}

int\*\* tansuat(int n, int\* mangA) {

mangA = sapxep(n, mangA);

int\* arr = new int[n];

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

arr[i] = 0;

}

cout << endl;

arr[0] = 1;

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

if (mangA[i] == mangA[i - 1]) {

arr[i] = (arr[i - 1] <= 0) ? arr[i - 1] - 1 : -1;

arr[i + arr[i]]++;

} else {

arr[i]++;

}

}

cout << "===" << endl << "Tan suat xuat hien: " << endl;

printf("%-10s%-10s", "Gia tri", "Tan suat");

cout << endl;

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

if (arr[i] > 0) {

printf("%-10d%-10d", mangA[i], arr[i]);

cout << endl;

}

}

return nullptr;

}

int main(int argc, char\*\* argv) {

int n;

cout << "So phan tu muon nhap: ";

if (!(cin >> n)) {

return 1;

}

int\* arr = new int[n];

nhap(n, arr);

tansuat(n, arr);

return 0;

}