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Assignment: Week 10

Problem 1001.

#include <iostream> //library

#include <cstring> //library

#include <string> //library

using namespace std;

struct ttrraaiinn {

int iidd; //initialization

char\* aadddrreess; //initialization

char\* ttiimmee; //initialization

};

void f\_addres(ttrraaiinn\* japan, int z) { //start function and initialization

char tokyo[64]; //initialization

cin >> tokyo; //input

int v = 0; //initialization

int rio = 0; //initialization

while (rio < strlen(tokyo)) { //loop

{

tokyo[rio] = toupper(tokyo[rio]); //output

rio++;

}

}

for (ttrraaiinn\* rio = japan; rio != japan + z; rio++) //loop

{

for (int berlin = 0; berlin < strlen(rio->aadddrreess); berlin++) { //loop

rio->aadddrreess[berlin] = toupper(rio->aadddrreess[berlin]); //output

}

if (strcmp(tokyo, rio->aadddrreess) == 0) //condition

{

cout << rio->iidd << "\_" << rio->aadddrreess << "\_" << rio->ttiimmee; //output

v++; //output

break; //break function

}

}

if (v == 0) //condition

cout << "Impossible"; //output

}

void in\_timetable(ttrraaiinn\* moscow, int y) { //start function and initialization

ttrraaiinn\* rio = moscow; //initialization

while (rio != moscow + y) { //loop

rio->aadddrreess = new char[64]; // new declaration

rio->ttiimmee = new char[64]; // new declaration

cin >> rio->iidd >> rio->aadddrreess >> rio->ttiimmee; //input

rio++;

}

}

int main() {

int z; //initialization

cin >> z; //input

ttrraaiinn\* trains = new ttrraaiinn[z]; // new declaration

in\_timetable(trains, z); //output

f\_addres(trains, z); //output

}

Problem 1002.

#include <iostream> //library

#include <cstring> //library

#include <string> //library

using namespace std;

struct ttrraaiinn {

int iidd; //initialization

char\* aadddrreess; //initialization

char\* ttiimmee; //initialization

};

void wow(char\* japan) { //start function and initialization

int rio = 0; //initialization

do { //loop

if (japan[rio] >= 97 && japan[rio] <= 122) {//condition

japan[rio] -= 32; //output

}

rio++;

} while (japan[rio] != '\0'); //loop

}

int main() {

int berlin, moscow = -1; //initialization

cin >> berlin; //input

ttrraaiinn\* denver = new ttrraaiinn[berlin]; // new declaration

int rio = 0; //initialization

do { //loop

denver[rio].aadddrreess = new char[1001]; // new declaration

denver[rio].ttiimmee = new char[1001]; // new declaration

cin >> denver[rio].iidd >> denver[rio].aadddrreess >> denver[rio].ttiimmee;

rio++;

}while (rio < berlin); //loop

char\* paris = new char[1001]; // new declaration

cin >> paris; //input

wow(paris);

for (int rio = 0; rio < berlin; rio++) { //loop

wow(denver[rio].aadddrreess); //output

if (strcmp(paris, denver[rio].aadddrreess) == 0) { //condition

if (moscow == -1) { //condition

moscow = rio; //output

}

else { //condition

if (strcmp(denver[moscow].ttiimmee, denver[rio].ttiimmee) > 0) {

moscow = rio; //output

}

}

}

}

if (moscow == -1) { //condition

cout << "Impossible";//output

}

else { //condition

cout << denver[moscow].iidd << "\_" << denver[moscow].aadddrreess << "\_" << denver[moscow].ttiimmee; //output

}

}

Problem 1003.

#include <iostream> //library

#include <cstring> //library

#include <string>//library

using namespace std;

struct ssttuuddeenntt {

int iidd; //initialization

char\* ssuurrnnaammee; //initialization

double ggrraaddee; //initialization

};

void input(ssttuuddeenntt\* tokyo, int japan) { //start function and initialization

ssttuuddeenntt\* rio = tokyo; //initialization

do { //loop

rio->ssuurrnnaammee = new char[64]; // new declaration

cin >> rio->iidd >> rio->ssuurrnnaammee >> rio->ggrraaddee; //input

rio++;

} while (rio != tokyo + japan); //loop

}

void sort\_id(ssttuuddeenntt\* tokyo, int japan) { //start function and initialization

for (int rio = 0; rio < japan – rio; rio++) { //loop

for (int berlin = 0; berlin < japan - rio - 1; berlin++) { //loop

if ((tokyo + berlin)->iidd < tokyo[berlin + 1].iidd) //condition

swap(tokyo[berlin], \*(tokyo + berlin + 1)); //swap

}

}

}

void sort\_grade(ssttuuddeenntt\* tokyo, int japan) { //start function and initialization

for (int rio = 0; rio < japan - rio; rio++) { //loop

for (int berlin = 0; berlin < japan - rio - 1; berlin++) { //loop

if ((tokyo + berlin)->ggrraaddee < tokyo[berlin + 1].ggrraaddee) //condition

swap(tokyo[berlin], \*(tokyo + berlin + 1)); //swap

}

}

}

void output(ssttuuddeenntt\* tokyo, int japan) { //start function and initialization

for (ssttuuddeenntt\* rio = tokyo; rio != tokyo + japan; rio++) { //loop

cout << rio->iidd << " " << rio->ssuurrnnaammee << " " << rio->ggrraaddee;

break; //break function

}

}

int main() {

int japan; //initialization

cin >> japan; //input

ssttuuddeenntt\* ssttuuddeennttss = new ssttuuddeenntt[japan]; // new declaration

input(ssttuuddeennttss, japan); //output

sort\_id(ssttuuddeennttss, japan); //output

sort\_grade(ssttuuddeennttss, japan); //output

output(ssttuuddeennttss, japan); //output

}

Problem 1004.

#include <iostream> //library

#include <cstring> //library

#include <string> //library

using namespace std;

struct ssttuuddeenntt {

int iidd; //initialization

double ggrraaddee; //initialization

};

void input\_information(ssttuuddeenntt\* tokyo, int japan) //start function and initialization

{

ssttuuddeenntt\* rio = tokyo; //initialization

do { //loop

cin >> rio->iidd >> rio->ggrraaddee; //input

rio++;

} while (rio != tokyo + japan); //loop

}

void sort\_id(ssttuuddeenntt\* tokyo, int japan) //start function and initialization

{

for (int rio = 0; rio < japan; rio++) //loop

{

for (int berlin = 0; berlin < japan - rio - 1; berlin++) //loop

{

if ((tokyo + berlin)->iidd > tokyo[berlin + 1].iidd) //condition

swap(tokyo[berlin], \*(tokyo + berlin + 1)); //swap

}

}

}

void sort\_grade(ssttuuddeenntt\* tokyo, int japan) //start function and initialization

{

for (int rio = 0; rio < japan - 1; rio++) //loop

{

for (int berlin = 0; berlin < japan - rio - 1; berlin++) //loop

{

if ((tokyo + berlin)->ggrraaddee < tokyo[berlin + 1].ggrraaddee) //condition

swap(tokyo[berlin], \*(tokyo + berlin + 1)); //swap

}

}

}

void output(ssttuuddeenntt\* tokyo, int japan) //start function and initialization

{

ssttuuddeenntt\* rio = tokyo;

do { //loop

cout << rio->iidd << " " << rio->ggrraaddee << endl; //output

rio++;

} while (rio != tokyo + japan); //loop

}

int main()

{

int japan; //initialization

cin >> japan; //input

ssttuuddeenntt\* tokyo = new ssttuuddeenntt[japan]; // new declaration

input\_information(tokyo, japan); //output

sort\_id(tokyo, japan); //output

sort\_grade(tokyo, japan); //output

output(tokyo, japan); //output

return 0;

}

Problem 1005.

#include <iostream> //library

#include <cstring> //library

using namespace std;

struct lluugggaaggee {

char\* ddeesscc; //initialization

int ccoouunntt; //initialization

double wweeiigghhtt; //initialization

};

struct ppassengerr {

int lluugggaaggeeSsiizzee; //initialization

char\* nnaammee; //initialization

lluugggaaggee\* lluugggaaggees; //initialization

};

int main() {

int japan; //initialization

int big = 0, max\_w = 0; //initialization

cin >> japan; //input

ppassengerr\* tokyo = new ppassengerr[japan];

for (int rio = 0; rio < japan; rio++) { //loop

tokyo[rio].nnaammee = new char[1000]; // new declaration

cin >> tokyo[rio].nnaammee >> tokyo[rio].lluugggaaggeeSsiizzee; //input

tokyo[rio].lluugggaaggees = new lluugggaaggee[tokyo[rio].lluugggaaggeeSsiizzee];

for (int berlin = 0; berlin < tokyo[rio].lluugggaaggeeSsiizzee; berlin++) {//loop

tokyo[rio].lluugggaaggees[berlin].ddeesscc = new char[1001]; // new declaration

cin >> tokyo[rio].lluugggaaggees[berlin].ddeesscc >> tokyo[rio].lluugggaaggees[berlin].ccoouunntt >> tokyo[rio].lluugggaaggees[berlin].wweeiigghhtt; //input

if (tokyo[big].lluugggaaggees[max\_w].ccoouunntt \* tokyo[big].lluugggaaggees[max\_w].wweeiigghhtt < tokyo[rio].lluugggaaggees[berlin].ccoouunntt \* tokyo[rio].lluugggaaggees[berlin].wweeiigghhtt) { //condition

big = rio; //output

max\_w = berlin; //output

}

}

}

cout << tokyo[big].nnaammee << endl << tokyo[big].lluugggaaggees[max\_w].ddeesscc;//output

}

Problem 1006.

#include <iostream> //library

#include <cstring> //library

#include <cmath> //library

using namespace std;

struct Ttrraaiinn {

int iidd; //initialization

char\* FfromAddresss; //initialization

char\* TtoAddresss; //initialization

char\* DdepartureTimee; //initialization

};

void toupper(char\* tokyo) { //start function and initialization

for (int rio = 0; tokyo[rio] != '\0'; rio++) { //loop

if (tokyo[rio] >= 97 && tokyo[rio] <= 122) {//condition

tokyo[rio] -= 32; //output

}

}

}

int main() {

int japan; //initialization

cin >> japan; //input

Ttrraaiinn\* tokyo = new Ttrraaiinn[japan];

for (int rio = 0; rio < japan; rio++) { //loop

tokyo[rio].FfromAddresss = new char[1001]; // new declaration

tokyo[rio].TtoAddresss = new char[1001]; // new declaration

tokyo[rio].DdepartureTimee = new char[1001]; // new declaration

cin >> tokyo[rio].iidd >> tokyo[rio].FfromAddresss >> tokyo[rio].TtoAddresss >> tokyo[rio].DdepartureTimee; //input

toupper(tokyo[rio].FfromAddresss);

toupper(tokyo[rio].TtoAddresss);

}

for (int rio = 0; rio < japan; rio++) { //loop

for (int berlin = 0; berlin < rio; berlin++) { //loop

if (strcmp(tokyo[rio].TtoAddresss, tokyo[berlin].TtoAddresss) < 0) {//condition

swap(tokyo[rio], tokyo[berlin]); //swap

}

}

}

for (int rio = 0; rio < japan; rio++) { //loop

cout << tokyo[rio].iidd << " " << tokyo[rio].FfromAddresss << " " << tokyo[rio].TtoAddresss << " " << tokyo[rio].DdepartureTimee << endl; //output

}

}

Problem 1010.

#include <iostream> //library

#include <cstring> //library

#include <string> //library

using namespace std;

int main() {

char tokyo[13][13]; //initialization

int moscow = 0, denver = 0, japan = 0, paris = 0; //initialization

for (int rio = 0; rio < 8; rio++) { //loop

cin >> \*(tokyo + rio); //input

}

for (int rio = 0; rio < 8; rio++) { //loop

for (int berlin = 0; berlin < 8; berlin++) { //loop

if (tokyo[rio][berlin] == '0') {//condition

moscow++;//output

}

if (tokyo[rio][berlin] == '1') {//condition

denver++;//output

}

if (tokyo[rio][berlin] == '2') {//condition

japan++;//output

}

if (tokyo[rio][berlin] == '3') {//condition

paris++;//output

}

}

}

if (moscow == 0 || denver == 0 || japan == 0 || paris == 0) {//condition

cout << "BAD INPUT LIST";//output

}

else {//condition

for (int rio = 0; rio < 8; rio++) {//loop

for (int berlin = 0; berlin < 8; berlin++) {//loop

if (tokyo[rio][berlin] == '0' || tokyo[rio][berlin] == '1' || tokyo[rio][berlin] == '3') {//condition

tokyo[rio][berlin] = '-'; //output

}

}

}

for (int rio = 0; rio < 8; rio++) { //loop

for (int berlin = 0; berlin < 8; berlin++) { //loop

cout << tokyo[rio][berlin]; //output

}

cout << endl; //output

}

cout << moscow << " " << denver << " " << japan << " " << paris; //output

}

}

Problem 1011.

#include <iostream> //library

#include <cstring> //library

#include <string> //library

using namespace std;

bool wow(string japan) //start function and initialization

{

bool tokyo = true; //initialization

int berlin = 0; //initialization

for (int rio = 0; rio < japan.length(); rio++) { //loop

if (japan[rio] == '(') {//condition

berlin++;

}

else {//condition

berlin--;

}

if (berlin < 0) {//condition

tokyo = false; //output

break; //break function

}

}

if (berlin != 0) {//condition

tokyo = false; //output

}

return tokyo;

}

int main()

{

string moscow; //initialization

cin >> moscow; //input

if (wow(moscow)) cout << "VALID";//output

else cout << "INVALID";//output

}