#include "stdio.h"

#include "conio.h"

#include "time.h"

#include "Windows.h"

#include <iostream>

#include <iomanip>

using namespace std;

struct NhanVien

{

char HoTen[30];

int NamSinh;

float Luong;

int GioiTinh;

};

typedef struct NhanVien NHANVIEN;

struct Node

{

NHANVIEN data;

struct Node\* Next;

};

typedef struct Node NODE;

struct List {

NODE\* Head=NULL;

NODE\* Tail=NULL;

};

typedef struct List LIST;

NODE\* getNode(NHANVIEN x) {

NODE\* p;

p = new NODE;

if (p == NULL)

return NULL;

p->data = x;

p->Next = NULL;

return p;

}

void InPutData(NHANVIEN &x) {

cin.ignore();

cout << "Nhap ten nhan vien: " << x.HoTen;

cin.getline(x.HoTen, sizeof(x.HoTen));

do {

cout << "Nhap nam sinh nhan vien: ";

cin >> x.NamSinh;

if (x.NamSinh <= 0 || x.NamSinh >= 2024) {

cout << "Nam sinh khong hop le!" << endl;

}

} while (x.NamSinh <= 0 || x.NamSinh >= 2024);

do {

cout << "Nhap luong nhan vien: ";

cin >> x.Luong;

if (x.Luong < 0) {

cout << "Luong khong hop le!" << endl;

}

} while (x.Luong < 0);

do {

cout << "Nhap gioi tinh nhan vien [0.Nam/1.Nu]: ";

cin >> x.GioiTinh;

if (x.GioiTinh != 1 && x.GioiTinh != 0) {

cout << "Gioi tinh khong hop le! [0.Nam/1.Nu]" << endl;

}

} while (x.GioiTinh != 1 && x.GioiTinh != 0);

}

void AddHead(LIST &l, NODE\* newNode) {

if (l.Head == NULL) {

l.Head = newNode;

l.Tail = newNode;

}

else

{

newNode->Next = l.Head;

l.Head = newNode;

}

}

void AddHeadFunction(LIST &l) {

NHANVIEN x;

InPutData(x);

NODE\* p = getNode(x);

AddHead(l, p);

cout << "\n";

}

void AddTail(LIST& l, NODE\* newNode) {

if (l.Head == NULL) {

l.Head = newNode;

l.Tail = newNode;

}

else

{

l.Tail->Next = newNode;

l.Tail = newNode;

}

}

void AddTailFunction(LIST &l) {

NHANVIEN x;

InPutData(x);

NODE\* p = getNode(x);

AddTail(l, p);

cout << "\n";

}

void Input(LIST &l) {

int n;

quaylai:

cout << "Moi ban nhap so luong nhan vien: ";

cin >> n;

if (n <= 0) {

cout << "So luong nhan vien khong hop le";

goto quaylai;

}

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

{

NHANVIEN x;

InPutData(x);

NODE\* p = getNode(x);

AddTail(l, p);

cout << "\n";

}

}

void tab() {

cout << setw(30) << left << "Ho Ten" << " ";

cout << setw(30) << left << "Nam Sinh" << " ";

cout << setw(20) << left << "Luong" << " ";

cout << setw(8) << left << "Gioi Tinh" << "\n\n";

}

void Out(NODE\* p) {

cout << setw(30) << left << p->data.HoTen << " ";

cout << setw(30) << left << p->data.NamSinh << " ";

cout << setw(20) << left << p->data.Luong << " ";

if (p->data.GioiTinh == 0) {

cout << setw(8) << left << "Nam" << "\n\n";

}

else {

cout << setw(8) << left << "Nu" << "\n\n";

}

}

void OutPut(LIST l) {

tab();

for (NODE\* p = l.Head; p != NULL; p = p->Next) {

Out(p);

}

}

void staffOver40Year(LIST l) {

NODE\* p;

int count = 0;

tab();

for (p = l.Head; p != NULL; p = p->Next) {

if (2024 - p->data.NamSinh >40 )

{

Out(p);

}

count++;

}

if (count == 0) {

cout << "Khong co nhan vien nao tren 40 tuoi";

}

}

void CountSalaryOver1m(LIST& l)

{

NODE\* p;

int count = 0;

for (p = l.Head; p != NULL; p = p->Next)

{

if (p->data.Luong > 1000000)

{

count++;

}

}

if (count > 0)

{

cout << "Nhan vien co luong tren 1000000 :" << count << endl;

}

else

{

cout << "Khong co nhan vien co luong tren 1000000" << endl;

}

}

void SortUpYearsOld(LIST& l)

{

NODE\* p, \* q;

for (p = l.Head; p != l.Tail; p = p->Next)

{

for (q = p->Next; q != NULL; q = q->Next)

{

NHANVIEN tmp = p->data;

p->data = q->data;

q->data = tmp;

}

}

cout << "\n";

OutPut(l);

}

void MENU() {

cout << "\n========= Menu =========="<<endl;

cout << "0. Thoat." << endl;

cout << "1. Xuat danh sach nhan vien."<<endl;

cout << "2. Them 1 nhan vien dau danh sach." << endl;

cout << "3. Them 1 nhan vien cuoi danh sach." << endl;

cout << "4.Liet ke cac nhan vien tren 40 tuoi. " << endl;

cout << "5.Dem so luong nhan vien co luong tren 1 trieu dong. " << endl;

cout << "6.Sap xep giam dan theo nam sinh. \n" << endl;

}

int main() {

LIST l;

int choose;

; Input(l);

do {

MENU();

cout << "Ban chon: ";

cin >> choose;

switch (choose) {

case 0:

{

cout << "\nThoat"<<endl;

break;

}

case 1: {

cout << "Xuat danh sach nhan vien: " << endl;

OutPut(l);

break;

}

case 2: {

AddHeadFunction(l);

break;

}

case 3: {

AddTailFunction(l);

break;

}

case 4: {

cout << "\nXuat danh sach nhan vien tren 40 tuoi: " << endl;

staffOver40Year(l);

break;

}

case 5: {

cout << "\nXuat so luong nhan vien co luong tren 1 trieu dong: " << endl;

CountSalaryOver1m(l);

break;

}

case 6: {

cout << "\nSap xep giam dan theo nam sinh: " << endl;

SortUpYearsOld(l);

break;

}

default: {

cout << "Hien tai chua co lua chon ban da chon"<<endl;

}

}

} while (choose!=0);

return 0;

}