Assignment No:7

Title: Personnel information system using sorting and searching for STL and vector container.

Problem Statement: Write C++ program using STL for sorting and searching user defined records such as personal records (Name, DOB, Telephone number etc) using vector container.

#include <iostream>

#include <vector>

#include <algorithm>

#include <string>

using namespace std;

struct Person {

string name;

string dob; // Date of birth

string phone;

// Display a person's details

void display() const {

cout << "Name: " << name << ", DOB: " << dob << ", Phone: " << phone << endl;

}

};

// Function to compare two Person objects by name for sorting

bool compareByName(const Person &a, const Person &b) {

return a.name < b.name;

}

int main() {

vector<Person> records;

int choice;

do {

cout << "\nPersonnel Information System\n";

cout << "1. Add Record\n";

cout << "2. Display All Records\n";

cout << "3. Search Record by Name\n";

cout << "4. Sort Records by Name\n";

cout << "5. Exit\n";

cout << "Enter your choice: ";

cin >> choice;

switch (choice) {

case 1: {

Person p;

cout << "Enter Name: ";

cin.ignore();

getline(cin, p.name);

cout << "Enter DOB (YYYY-MM-DD): ";

getline(cin, p.dob);

cout << "Enter Phone Number: ";

getline(cin, p.phone);

records.push\_back(p);

break;

}

case 2: {

cout << "\nAll Records:\n";

for (const auto &p : records) {

p.display();

}

break;

}

case 3: {

string searchName;

cout << "Enter name to search: ";

cin.ignore();

getline(cin, searchName);

auto it = find\_if(records.begin(), records.end(), [&](const Person &p) {

return p.name == searchName;

});

if (it != records.end()) {

cout << "Record found:\n";

it->display();

} else {

cout << "Record not found.\n";

}

break;

}

case 4: {

sort(records.begin(), records.end(), compareByName);

cout << "Records sorted by name.\n";

break;

}

case 5: {

cout << "Exiting...\n";

break;

}

default: {

cout << "Invalid choice. Please try again.\n";

}

}

} while (choice != 5);

return 0;

}