***6)*** Sorting and Searching User-Defined Records Using STL Vector in C++

***CODE :-***

#include <iostream>

#include <vector>

#include <algorithm>

#include <string>

struct PersonalRecord

{

std::string name;

std::string dob;

std::string phone;

bool operator<(const PersonalRecord& other) const

{

return name < other.name;

}

};

void displayRecord(const PersonalRecord& record)

{

std::cout << "Name: " << record.name << "\n";

std::cout << "Date of Birth: " << record.dob << "\n";

std::cout << "Phone: " << record.phone << "\n";

std::cout << "--------------------------\n";

}

void searchRecord(const std::vector<PersonalRecord>& records, const std::string& name)

{

auto it = std::find\_if(records.begin(), records.end(), [&](const PersonalRecord& record)

{

return record.name == name;

});

if (it != records.end())

{

std::cout << "Record found:\n";

displayRecord(\*it);

}

else

{

std::cout << "Record not found!\n";

}

}

void displayAllRecords(const std::vector<PersonalRecord>& records)

{

for (const auto& record : records)

{

displayRecord(record);

}

}

int main()

{

std::vector<PersonalRecord> records;

int choice;

do

{

std::cout << "\n--- Personal Records Management ---\n";

std::cout << "1. Add a new record\n";

std::cout << "2. Display all records\n";

std::cout << "3. Sort records by name\n";

std::cout << "4. Search for a record by name\n";

std::cout << "5. Exit\n";

std::cout << "Enter your choice: ";

std::cin >> choice;

std::cin.ignore();

if (choice == 1)

{

PersonalRecord record;

std::cout << "Enter name: ";

std::getline(std::cin, record.name);

std::cout << "Enter date of birth (YYYY-MM-DD): ";

std::getline(std::cin, record.dob);

std::cout << "Enter phone number: ";

std::getline(std::cin, record.phone);

records.push\_back(record);

}

else if (choice == 2)

{

if (records.empty())

{

std::cout << "No records available.\n";

}

else

{

displayAllRecords(records);

}

}

else if (choice == 3)

{

std::sort(records.begin(), records.end());

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

}

else if (choice == 4)

{

std::string searchName;

std::cout << "Enter the name to search: ";

std::getline(std::cin, searchName);

searchRecord(records, searchName);

}

else if (choice == 5)

{

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

}

else

{

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

}

}

while (choice != 5);

return 0;

}

***OUTPUT :-***



