Students' Records

Problem Description

It is required to write a program that maintains a list of records of students.

Each student record should contain:

Student ID: (no two students should have the same number)
Name: (2 parts: First Name, Family Name)
Date of Birth (day, month, and year)
Place of Birth (Country + City)
Gender (Male / Female)
Telephone
Address

The user of the program should be able to do the following:

- Add student.
- Delete student given ID (should be confirmed).
- Search for a student by:
  (First Name or Family Name or Telephone or Month of birth or Month/Year of Birth).
- Save all data to a file.
- Load data from a file.
- Display total info of a student given ID.
- Show different values of a certain field (First Name, Country of Birth, Gender) with the count of students of each value.
  - ✓ e.g. If the user choose "Country of Birth", the program's output might look like:

```
Egypt        37
Lebanon      4
Canada       2
UK           1
```

Notes

- Program must be developed using C/C++ programming language.
- Teams of max two students are allowed.
- A suitable data structure should be used to perform the required operations. You can design your own data structure instead of using a standard ones (linked list, tree, graphs…etc). You can also design your own data structure as a variation of standard one (e.g. tree whose a leaf level is a linked list,…).
- Style of writing the source code, and in-source comments will be appreciated.
- A report, showing (briefly) the following, should be also delivered:
  - ✓ Source file(s) description (beside in-file commenting)
  - ✓ Format of data files used and any extra description if necessary (e.g. file naming)
  - ✓ Source core (important) Functions (names, description, no listing)
  - ✓ Description of the work (functions or modules) of Each of the Team members.
  - ✓ Pseudo code of important parts of the program (pseudo code or flowcharts)

- ✓ Any data structure used (special arrays, structs, enums, classes..): their use and each field description.
- ✓ A diagram (graph) (can be drawn by hand), showing all of your functions (names) as circles, and arrows from functions to functions they call.