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**BST-BCS-11a :** Algorithms and Data Structures

**Prepared by :** Prof. Dr. Hasan DAĞ

**Date assigned :** 18.11.2022

**Date due :** 22.11.2022 Midnight, that is 23:59 o’clock

**Exam Type :** Homework 1

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Assume that we have a file called **Students\_Data.txt** and it contains data with the following structure.

**Name; Last\_Name; Age; Gender; Address** (main street/Blvd, Number, Zip Code, City, Country)

Hasan; Dag; 58; M; Ernst-Reuter Platz, 10, 10097, Berlin, Germany.

Reiner; Creuztburg; 65; M; Alte Jakobstrasse, 12, 12071, Potsdam, Germany.

Gill; Smith; 25;F; Young Street, 23, 13111, Bristol, England.

…..

(maximum 100 lines)

Write a program to open the file, read the data in, store into a proper data structure, and print the results for first three entries, that is, records of data. Get ready for implementing a function to your program (on our regular lecture on Tuesday, November 22, 22022) that may do one of the queries below.

**Hints**

1. You need to create two **struct data** types: one for address, one for the whole record (a line of file).
2. Having described two struct data types (one would be used within the other), now define your data structures (another hint: an array of one of these struct data type) to read the whole file (all the records, maximum 100) into this data structure. Later, we would like to do lots of queries such as:
   1. Listing all males or females
   2. Listing males who are between 25 and 50 ages old.
   3. List all people living in Berlin.
   4. Is there any person who is his/her mid 30s and lives in Berlin? ….

***Notes***

1. *You need to mail (to*  [hasan.dag.extern@srh.de](mailto:hasan.dag.extern@srh.de)) *homework file named as* ***yourNameLastName\_HW1.c***
2. *Failure in naming your files properly will cause loss of grade (up to 5%) on your homework.*
3. *Failure to properly indenting your code, using meaningless identifier names may cause loss of points.*
4. *An example of data file is also attached.*