RECITATION 14

Q1. Write a program with functions that:

- Defines a structure “Person” with 2 members: firstname and lastname,
- Declares an array of N persons (take N = 5 for instance),
- Reads the data of N persons using a function to read the data of 1 Person,
- Prints that data using a function to print the data of 1 Person.

Q2. Repeat question 1 with following additions:

- A structure Date with a day (int), a month (string) and a year (int)
- A function that reads a Date
- A function that prints a Date
- Add a dateOfBirth to the structure Person. dateOfBirth must be of the type Date.
- Add an enrollmentDate to the structure Person. enrollmentDate must be of the type Date.
- The function to read a Date must be called in the function readPerson.
- The function to print a Date must be called in the function printPerson.

Q3. Define a structure Address with streetAndNr, postalCode, town and phoneNr. Define a structure Student with a name, homeAddress and schoolAddress. Write a program to test the structures defined.

Write a function that reads an Address: *readAddress(Address *p)*

Both addresses are read with this function. Change the parameters passed on to the function to read in the correct type of address.

Ditto to print an Address: *printAddress(Address p)*

For example;

Name: John Doe
Home Address:
Street and Number: 123 Main St
Postal Code: 12345
Town: Springfield
Phone Number: 555-0123

School Address:
Street and Number:
456 School Rd
Postal Code: 67890
Town: Springfield
Phone Number: 555-4567

Q4. Write a program that asks the user to enter the name and the home town of 3 persons. Name and home town are stored in a structure Person. The 3 persons are stored in an array. Afterwards, the program asks the user to enter a name and searches the town that person lives in.

Use the functions readPerson and searchTown. The function searchTown has 2 arguments:

- the array that needs to be searched,
- a variable of the type Person that contains the name that needs to be searched. The town member of that variable needs to be filled with the town found by the function searchTown.

Reading the name of the person you want to search for is done in the main function. Printing the resulting town can also be done in the main function. If the name entered is not present in the array, an appropriate message needs to be printed.

```
Enter name: Smith
Enter town or city: Berkeley
Enter name: Minogue
Enter town or city: London
Enter name: O'Neil
Enter town or city: Dover
============================================================
Enter the name of the person you want to search for: Smith
This person lives in Berkeley
```

Q5. Write a program that reads name, age and salary of a chosen number of people and stores that information into a binary file. All data of 1 person is stored in a structure. Once the data of 1 person is read, the structure containing that data is written to a file at once. Afterwards, the data of the next person is read. Make sure the names can contain spaces.

```
How many people do you want to enter? 3
Enter name: Smith
Enter age: 25
Enter salary: 1950
Enter name: Minogue
Enter age: 47
Enter salary: 6500
Enter name: O Neil
Enter age: 66
Enter salary: 2200
```

In addition, read the data from the file written and print the data to the screen as follows:

```
Name: Smith
Age: 25
Salary: 1950

Name: Minogue
Age: 47
Salary: 6500

Name: O Neil
Age: 66
Salary: 2200
```

Q6. Repeat question 5 with following changes:

- Remove printing the data to the screen,
- Add a function that searches the age and wages of a person based upon a name entered by the user.

```
What's the name of the person you want to search for? Smith
Name: Smith
Age: 25
Salary: 1950
```