

TUTORIAL N°2 : RECORDS AND FILES

Exercise 1 : The library (Exam ADS-II 2020-2021)

Consider the following records :

```
Type      Date = Record
           day, month, year : integer ;
           EndDate

           Person = Record
           Last_name, first_name: string [30] ;
           Date_birth : Date ;
           Nationality : string ;
           EndPerson

           Book = Record
           ISBN : string [12] ;
           title : string [50] ;
           language : string [25];
           Date_edition : Date ;
           pages_nbr : integer ;
           Author : Personne ;
           EndBook
```

Let **T** be an array of at most 1000 books.

1. Display, from **T**, books written by Algerians in French.
2. Show the names of authors who published a book after the age of 60.
3. Find and view the book with the most pages.

Exercise 2 : Residents

Consider the following records :

```
Type      Date = Record
           day, month, year: integer ;
           EndDate

           Address = Record
           Number : integer ;
           Street: string[50] ;
           City, Wilaya: string[25];
           EndAddress.

           Resident = Record
           Last_name, first_name: string[50];
           Date_naiss: Date ;
           Residence: Address;
           EndResidant
```

1. Write a program that allows you to:
 - a) Fill an array **T** with **N** residents ($N \leq 100$)
 - b) Display from **T** the residents born before a given year « birth_year”
 - c) Display the names and dates of birth of the residents of the city of “zemmouri” in the wilaya of “Boumerdès”
 - d) Save in a file **G** of type resident, the residents of the wilaya of Algiers appearing in array **T**.

Exercise 3 :

Consider the following record :

```
Type Student = Record
    Matricule : integer ;
    Last_name, first_name: string ;
    Score : Real ;
EndStudent.
```

Let **T** be an array of at most 100 students.

1. Write an algorithm to copy all admitted students belonging to **T** into an “ADMIS” file. A student is admitted if his score is greater than or equal to 10.

Exercise 4 :

Consider the following type :

```
Type Product = Record
    Code : integer ;
    Designation : string[100] ;
    Price : Real ;
EndProduct.
```

Let **F** be a file of products.

1. Write an algorithm to display the most expensive product in file **F**.