REPUBLIQUE ALGERIENNE DEMOCRATIQUE ET POPULAIRE
MINISTERE DE L'ENSEIGNEMENT SUPERIEUR ET DE LA RECHERCHE SCIENTIFIQUE

Université de M'sila
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Département d'informatique

جامعة المسيلة
كلية الرياضيات والإعلام الآلي
قسم الإعلام الآلي

Level: 1st year of computer science
Course: ADS1

series TD/TP N° : 08

Academic year:2023/2024
Chapter 6 : structures

Exercise 1 : TD/TP

- Define a structure to store a complex number (real part, imaginary part).
- Write a program that:
  - Reads a real number (can be negative) and calculates and displays its square root.
  - Reads a complex number, then calculates and displays its modulus (magnitude).
  - Reads 2 complex numbers, then calculates and displays their sum and product.

Exercise 2 : TP

- Define a structure to store the date (day, month, and year).
- Define a structure to store contact information (contact name, contact phone, and contact birthday).
- Write a program that populates an array of "N" contacts. Then, it only displays the contacts that have a Mobilis phone number (phone number starting with 06).

Exercise 3 : TD

- Define a structure to store the time (hour, minute).
- Define a structure to store the TV program of a channel (program name, program time, and duration in minutes).
- Write a program that populates an array of "N" TV programs. Then, it asks the user for a time to display the current program airing at that time

Exercise 4 : TP

- Define a structure to store the results of the World Cup (names of the two teams and the score).
- Write a program that:
  - Populates an array with the results of the Round of 16 (eighth-finals).
  - Displays the names of the teams that are in the quarter-finals.
  - Saves the results of the Round of 16 in a text file.

Exercise 5 : TD

- Define a structure to store clothing data in a store (price, type "men or women," and quantity).
- Write a program that:
- Populates an array with the sales data for a day.
- Calculates and displays the total sales for each type of clothing.
- Saves the sales array to a binary file

Exercise 6 : (at home)

- Define a structure to store the coordinates of a point (x, y).
- Define a structure to store the coordinates of the center of a circle and its radius.
- Write a C program that:
  - Reads a set of circles.
  - Then reads the coordinates of a point.
  - Displays all the circles containing this point.
  - Displays all circles that have no intersection.
  - Saves the circle information to a text file.