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Mathematics and Computer Science Department

Level: 1st year "Computer Science & Mathematics"

Module: Algorithmic and Data Structures 2

TP n°9

Pedagogic objectives

- Handle custom types in C language, in terms of declaration and processing.

Exercise n°1 :

Write a C program that defines three structures Point (fields: X and Y), Circle (Fields: X, Y, R) and Rectangle (Log, Lag). The program must read and display the respective fields of the Point, Circle and Rectangle structure type variables (point p1, circles c1, rectangles R1).

Exercise n°2 :

An industrial carpentry manages a stock of wooden panels. Each panel has a width, length and thickness in millimeters, as well as the type of wood which can be pine (code 0), oak (code 1) or beech (code 2).

1. Define a panel record containing all the information relating to a wooden panel;
2. Write a C program that allows you to
   - enter and display a wood panel (numeric entry for the type of wood (eg: 0), display in characters of the type of wood (eg: pine);
   - Calculate the volume of a panel ((thickness*width*length)/10^9).

Exercise n° 3:

Consider the following structures (records):

- Date defined by the three fields: day, month and year;
- Address defined by the fields: Number, Street, Municipality, Wilaya, Postal Code;
- Employee defined by the fields: LastName, FirstName, Residence, DateBirth

Write a C program that allows you to enter employee information from the keyboard and check:

→ whether an employee was born before a given year;

→ if an employee resides in a given wilaya.