University of Biskra
Mathematics Department
Module: Algorithmics and Data Structures 1
Level : L1 2023/2024

TD N°: 02

Exercice 1 :
Write an algorithm that calculates the absolute value of a number.

Exercice 2 :
Write an algorithm that calculates and displays the minimum of 3 integers entered from the keyboard using a simple conditional structure.

Exercice 3 :
Write an algorithm that simulates the game of heads or tails. To do this, the user is asked to enter the letter H (for Heads) or the letter T (for tails). The algorithm chooses a number between 0 and 1 randomly using the random (0, 1) instruction which randomly returns either the value zero (0) or the value one (1). If the number got at random is 0, then heads is the winner (tails is a loser) and if the number got at random is 1 then, tails is a winner (heads is a loser). The algorithm displays a message at the end: won or lost.

Exercice 4:
Using the If nested structure, write an algorithm that displays for a student the Baccalaureate mention on the basis of their final note. For a note:

- less than 10, the mention is: student postponed,
- between 10 and 11.99, the mention is: student admitted with mention Passable,
- between 12 and 13.99, the mention is: student admitted with mention Fairly good,
- between 14 and 15.99, the mention is: student admitted with mention Good,
- between 16 and 17.99, the mention is: student admitted with mention: Very good,
- between 18 and 20, the grade is: student admitted with mention Excellent.

Exercice 5 :
Write an algorithm that allows to enter the day, month (month number), and year of a date, and determine whether or not that date is correct.
We suppose that :
• the year is between 1900 and 2023
• the month between 1 and 12
• the day is between 1 and 31

Exercice 6 :
Write an algorithm which, from a number between 1 and 7, displays the corresponding day.
(1: for Sunday, 2: for Monday, etc.)

Exercice 7 :
Write an algorithm which offers a menu displayed on the screen, and which, depending on the choice made by the user, performs either: the addition, the subtraction, the product or the average of 2 integers. You must anticipate the case where the user has made an entry (writing) error.