Practical worksheet nr. 2 – Making decisions

Subjects
● Logical expressions
● Conditional instructions

Exercises

1. Change the first programs of the practical work nr. 1 so that, besides presenting the final grade, the program also presents a message stating if the student passed or failed.

2. The body mass index (BMI) is a measure used to evaluate how far the weight of a normal person deviates from the "ideal" weight. It is given by weight/height², with the weight measured in kilograms and the height measured in meters. The `bmi.cpp` program, available on elearning, computes the BMI of a person and classifies the person in 2 categories. Correct it in order to classify the person in one of the 4 categories described in the following table.

BMI	< 18.5	[18.5,25[	[25,30[	>= 30
Category	Underweight	Normal	Overweight	Obese

3. Write a program that reads two numbers entered by the keyboard and prints the largest of them in the terminal. If both numbers are equal, the program should also print "The two numbers are EQUAL".

4. Write a program that, given three numbers, prints the largest of them in the terminal.

5. Write a program that reads an integer from the terminal and that prints a message saying if the number is even or odd. Suggestion: use the remainder operator (%) to get the remainder of the division by 2.

6. Write a program that asks for the quantity of fuel (liters) in a car supply and prints the price that has to be paid. Consider that the fuel costs 1.40 euros per liter and supplies of more than 40 liters have a 10% discount.

7. Write a program that, given a date consisting of the month and the year (integer values entered via the keyboard), calculates and writes in the terminal the number of days of that month. A year is a leap year if it is a multiple of 4, except for the end of the century (multiples of 100), which are only leap years if they are multiples of 400. For example, 1980, 1984, 2004 were leap years; 1800, 1900 were ordinary years, but 2000 was a leap year.

8. Adapt the previous program to ask the user for a date consisting of a day, a month and a year. Then the program must determine and print the date of the next day and date of the previous day.