

Exercise Series N°: 05

Exercises	
Tutorials	<ol style="list-style-type: none"> 1. Write an algorithm that asks for a starting number A and displays the next n numbers (n entered by the user). For example, if the user enters the number $a=35$, and $n=12$ the program will display the numbers from 35 to 46 2. Write an algorithm that calculates the smallest common multiplier PPMC of two positive integers (without calculating the largest common divisor PGCD) 3. Write an algorithm that calculates the number of digits of an integer n. 4. Write an algorithm that allows you to enter positive and not zero, check if this integer is prime,. 5. Write a C program that calculates the sum $S = 1 - \frac{1}{2} + \frac{1}{3} - \frac{1}{4} \dots \pm \frac{1}{n}$ (n entered by the user) 6. Write an algorithm that displays the number of divisors of each integer less than n
Practical Work	<ol style="list-style-type: none"> 1. Write a program that reads two integers and then displays the quotient of the first divided by the second, without using the division operator (/ or div). (Division is repeated subtraction). 2. Write a program that asks for a number between 10 and 20, until the answer matches. In the event of a response greater than 20, a message will appear: "Smaller! ", and conversely, "Bigger!" » if the number is less than 10. 3. write a program that reads a positive integer n then calculates the sum: <div style="text-align: center; margin: 10px 0;"> $S = \frac{1}{2} + \frac{2}{3} + \frac{3}{4} + \frac{4}{5} + \dots + \frac{n-2}{n-1} + \frac{n-1}{n}$ </div> 4. Write an algorithm that prints a right isosceles triangle with right side length n (n entered by user) <div style="margin-left: 20px; margin-top: 5px;"> <i>Example : n=4</i> * ** *** **** </div>
Additional Exercises	<ol style="list-style-type: none"> 1. Write an algorithm that displays all multipliers of 12 that are less than a given number n <i>example if n=100 the algorithm displays : 12,24,36,48,68,72,84,96</i> 2. Write an algorithm that reads a letter and displays the next 5 letters in lexicographic order <i>example : letter = 'd' →the 5 next letters : e , f , g , h , i</i> 3. write an algorithm that displays the time every 10 minutes from a time entered by the user (the time is in hours and minutes) 4. Write an algorithm that calculates the following sum: $S = 1*2 + 2*3 + 3*4 + \dots + (n-1)*n$ 5. Write an algorithm that reads two positive integers a and b and constructs an integer C which is the concatenation of a and b <i>Example a=23, b=596 → c= 23569</i> 6. Write a program that reads a number and creates its mirror. Example $n=42781 \rightarrow$ mirror18724 7. Write a program that reads a decimal number and gives its octal representation 8. Write an algorithm that calculates the number of occurrences of a digit in a positive integer 9. Write a program that produces the following display: <div style="margin-left: 20px; margin-top: 5px;"> 1 22 333 4444 nnnn.....nnn </div> 10. Write a program that produces the following display: <div style="margin-left: 20px; margin-top: 5px;"> a ab abc abcd abcdef.....xyz </div>