

## **TUTORIAL 1**

(from:

<https://www.researchgate.net/publication/375951527> Algorithm 1 course notes and exercices

**Solve these exercises only by using function syntax. For each function, please provide its Python implementation.**

**Exercise 1:** Find the maximum of two integers

**Exercise 2:** Find the minimum of two integers

**Exercise 3:** Check if a number is even or odd

**Exercise 4:** Calculate the sum of digits in a number

**Exercise 5:** Calculate the average of three floating-point numbers

**Exercise 6:** Check if a character is a vowel or consonant

**Exercise 7:** Concatenate two strings

**Exercise 8:** Check if a string is a palindrome

**Exercise 9:** Find the factorial of a number

**Exercise 10:** Calculate the power of a number

**Exercise 11:** Check if a year is a leap year

**Exercise 12:** Check if a number is prime

**Exercise 13:** Print the Fibonacci sequence

**Exercise 14:** Swap two variables using a temporary variable

**Exercise 15:** Swap two variables without using a temporary variable

**Exercise 16:** Print the multiplication table of a number

**Exercise 17:** Find the largest element in a 1D array

**Exercise 18:** Find the smallest element in a 1D array

**Exercise 19:** Calculate the sum of elements in a 1D array

**Exercise 20:** Find the transpose of a 2D array

**Exercise 21:** Multiply two matrices

**Exercise 22:** Find the sum of elements in each row of a 2D array

**Exercise 23:** Find the sum of elements in each column of a 2D array

**Exercise 24:** Check if a 2D array is symmetric

**Exercise 25:** Rotate a 2D array by 90 degrees

**Exercise 26:** Find the largest element in a 2D array

**Exercise 27:** Find the smallest element in a 2D array

**Exercise 28:** Calculate the sum of elements in a 2D array

**Exercise 29:** Check if a 2D array is a magic square