**JAVA PROGRAMMING EXERCISES**

**I. JAVA LANGUAGE**

* ***Lesson1\_1*** : Print to the screen composite numbers <100. (*Composite number is natural numbers greater than 1 and must be divisible by a number > 1 and itself.)*
* ***Lesson1\_2*** : Print out the first 10 prime numbers.
* ***Lesson 1\_3*** : Print out the screen all prime numbers from 10 to 1000.
* ***Lesson 1\_4*** : Print out the screen the numbers between 10 and 200 and divide by 5, 7.
* ***Lesson 1\_5:*** Print the first 4 perfect numbers on the screen (*Perfect number is the number that equals the sum of its divisors including 1*)
* ***Lesson 1\_6*** : In the natural numbers <= 200 count how many numbers there are:
* - Divide by 5.
* - Divide 5 with the remainder 2.
* - The end digit is “5”.
* ***Lesson 1\_7:*** Given any natural number N> 1 (previously assigned). Print out the successful development of prime numbers from small to large.
* *Example:*  9 --> 3.3 12 --> 2.2.3
* ***Lesson 1\_8:*** Given any natural number N and x, execute to sum:
* S = x+

***Lesson1\_9:*** Given an array of natural numbers, write a program that:

***a.*** Arranges this array in descending order.

* ***b.*** Print out the screen all prime numbers of this array.
* ***c.*** Find and print a min (max) value of this array and all indices that correspond to this min (max) value.
* ***d.*** count how many prime numbers there are in the above array, how many composite numbers there are.
* ***e.*** Delete the array with the elements = 0 and print out the rest of the array on the screen.
* ***Lesson1\_10***: Give a students list with the fullname of students.
* - Count how many Students named "An".
* ***-*** Count how many students that their names starting with the letter "T".

**II. OOP:**

**Lesson 1.** Write a program to calculate the area, the perimeter of the rectangle.

* -  Write class **HinhChuNhat** includes:
  + - * 1. - **Attributes**: length, width
        2. - Method:

+ Method setting (set), and getting (get) information for length and width.

* + - * 1. + Method of calculating area, perimeter.
        2. + The toString method consists of length, width, area, perimeter information.
* -  Building the class contains the main function for the test section. Length, width can enter from the keyboard.

**Lesson 2.** Library X manages the list of books. Information about book types:

\* Textbook: Book code, date of entry, unit price, quantity, publisher, status (new, old).

If the book status is new: then money = quantity \* unit price.

If the book status is old, then money: = quantity \* unit price \* 50%

\* Reference book: Book code, date of entry (date, month, year), unit price, quantity, publisher, tax. Amount = quantity \* unit price + tax

Perform the following requirements:

- Build classes with inheritance functions.

- Import export list of book types.

- Calculate the sum of money for each type.

- Calculate the average of the unit price of the reference books.

- Export textbooks of publisher X (X input from keyboard).