

In this optional practice you have to create some Java programs. You have to upload only the .java files in a .zip file

Remember the rules of creating a good code (unit 9 in block 1)

1. Create a program that prints the first  $n$  squared numbers, asking to the user the number  $n$

For example:

Input a number: 4

The first 4 squared numbers are: 1, 4, 9, 16

2. Create a program that asks numbers to the user until he types a 0. Then, it will print the total amount of numbers that the user has typed, apart from the last one (the 0) that must be excluded.

For example:

Input a number:4

Input a number:5

Input a number:78

Input a number:0

The total amount of numbers input is: 3

3. Create a program that prints the prime numbers until a number specified by the user.

For example:

Input a number: 10

Prime numbers until 10 are: 1,3,5,7

4. Create a program that asks the user double numbers until the word "end" is typed and then it has to print the minimum, the maximum, the addition and the average in each step.

For example:

Number? 5

min= 5 max=5 add=5 avg= 5

Number? 4

min = 4 max=5 add=9 avg=4,5

Number? end

5. Create a program that asks the user how many marks is going to introduce. Then ask the user these marks (double) and store them in an array. The program has to calculate the average of these marks. After this, the program must show the marks which are greater than the average mark.

For example:

How many marks are you going to introduce? 3

4 6 8

The average is: 6 the marks greater than the average are: 8

6. Complete the program above and make it ask the names of the students at the same time than their marks. You have to store the names in an array and the marks in another array and the link between them are the indexes, that is, the student in the first position corresponds to the first mark, the second to the second and so on. After storing these names and marks, the program must show the name of the students with marks greater than the average and the name of the student with the greatest mark.

For example:

How many marks and names are you going to introduce? 3

Pepito 4,5 María 10 Lucía 8

The average is: 7,5

The students with marks greater than the average are:

- María
- Lucía

The student with the greatest mark is: María

7. Create a program that asks the user a month name and then it shows the number of days of this month. You can't use "if" nor "switch" to do this.

For example:

Input a month: April

April has 30 days

8. Create a function that receives a string parameter with a name and a surname, then it has to create a new string with Mr/Ms surname comma and name, and return this string to the main.

For example:

María Ferrer → Mr/Ms Ferrer, María

9. Create a function called addDigits that will receive an integer as a parameter and will return the addition of all its digits. Try to make it recursive as well.

For example:

System.out.println(addDigits(123)) → will show 6

10. Create a function that returns if a number is Circular prime or not. A Circular prime number is the number that is prime in every rotation of their digits. For example: 1193 is circular prime because 1931, 9311, 3119 and 1193 are prime numbers. [https://en.wikipedia.org/wiki/Circular\\_prime](https://en.wikipedia.org/wiki/Circular_prime) **Hint:** You can use the number as a String to make the rotations and transform it later to integer to make the divisions. Remember to catch all the possible exceptions.