

# Programación Genética - Tarea 3

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# Tarea

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In this tarea, you need to provide the implementation of a genetic programming

Executing the algorithm should give you the fitness curve, as in Tarea 2

# Tarea

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Implement a library to manipulate nodes, and create trees

It is important to be able to *copy*, *evaluate*, and *print* a tree

Make sure you can express simple expression, such as  $4 + 5 * 2$  using your library

Implement functionalities to replace a part of the tree by another tree. This is important to implement crossover and mutation

# Tarea

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Use the genetic programming library to solve the problem of *des chiffres et des lettres*

As input, we have a *target number* and a set of *numbers*

The numbers must be set in an expression using +, -, %, \* to get as close as the target number

[Optional] make sure that there is no duplication in the number. Each number must appear at maximum once in the tree.

# Tarea

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As a second exercise, you need to find a function that get close to some determined points

For example, if you provide the points  $(3,4)$ ,  $(6, 2)$ ,  $(7,5)$ , what is the function  $f(x)$  that passes by these three points?

[Optional] you can use it to find derivative function

# Fecha de entrega

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Esperamos su tarea 3 el 23 de diciembre 2020, antes las  
23:59