Genetic Algoritm framework

FEHIS project 2018

Section members

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Aim of the project

This Framework should provide an easy way of creating Genetic Algorithms and provide the basic functionality out of the box. The project should contain a simple example of usage.

Project implementation

The project was implemented in Kotlin programming language and can be used in both Kotlin and Java. The project contains two packages:

1. `pl.polsl.ga.general` - Contains all generic and abstract classes
2. `pl.polsl.ga.impl` - Contains implementations of the classes from the `.general` package which can be used for other applications

Usage

```
val geneticAlgorithm = GeneticAlgorithm(
            { Individual(RandHelper.RANDOM.nextLong()) },
            { i: Individual<Long> -> i.fitness = 1 + i.genome / Long.MAX_VALUE.toDouble() },
            BinaryGenomeManipulator(),
            stopCondition = CountingStopCondition(5000)
    )

geneticAlgorithm.run()
println("Best individual: ${geneticAlgorithm.getBestIndividual()}")
```

Output

```
Best individual: Individual(genome=8646911284551352320, fitness=1.9375, accumulatedNormalize
```