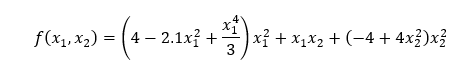
**Parallel Assignment 1**

**CCH3F3 Artificial Intelligence**

**First Term of 2019/2020**

Your task is to analyze, design, and implement the system of ***Genetic Algorithm (GA)*** in a computer program to find **THE MINIMUM VALUE** of defined function:





**Things that you should observe:**

* Chromosome Design and Decoding Technique
* Population Size
* Parent Selection scheme
* Genetic operation techniques and options (Crossover and Mutation)
* Probability value in each Genetic operation (Pc dan Pm)
* New Generation Selection technique
* Stopping Criteria (Generation termination)

**Process that must be built/implement:**

(can be a function/procedure)

* Chromosome decoding
* Fitness calculation
* Parent selection
* Crossover
* Mutation
* New Generation Selection

**Output** of the system is **the best chromosome** and the value ofandas the result of **decoded best chromosome**

**Rules and Scoring Criteria**

1. **Task Collection**

* Assignment must be submitted before **Sunday, 29 September 2019** at **21.00 WIB** through **Google Classroom**
  + Google Classroom code **42s51w**
* Submission takes the form of **.zip** or **.rar** and **SHOULD** only contains **TWO FILES**:

1. Program source code
2. Observation Report

* Naming a zip/rar file **MUST** use the **CLASS\_ID** format
  + For Example: **IF4107\_1301174068.zip** or **IFX4301\_1301171111.rar**
  + For Example: **IFIK4102\_1301171234.zip** or **IF41INT01\_1301174321.rar**
  + There are no dashes (-) or underscores (\_) in class naming
* Inappropriate file name and source code format will result in **ZERO MARK** collection

1. **Source Code Program**

* Source Code must be executable and collected in **ONE FILE** of Source Code
* The system may be built using any programming language
* It is not allowed to use libraries that directly carry out GA processes or processes that must be built / observed
* Inappropriate file name and source code format will result in **ZERO MARK** collection
* **DO NOT** submit any .exe files

1. **Observation Report**

* Maximum report of 2 pages
  + Font: Times New Roman, font size: 12, spacing: 1, in**.pdf** format
  + Contains analysis and explanation of problem-solving strategies   
    (technique for determining parameter values ​​or strategy selection)
  + Write down the GA parameters ​​that you consider the most optimum for the case (chromosome design, mutation and crossover probability, population size, etc.)
* Give a screenshot of the best running results based on the optimum parameter values

1. **Course Detail**
   * CLO 1 (30%): Analysis of the problem, assessed from the report
   * CLO 2 (30%): Program design
   * CLO 3 (40%): Source code and GA Accuracy.

* **Fail Mark (E Final score)** for anyone who has been proven ***CHEATING***.
  + Code and / or report similarity up to 80%
  + Collecting other people’s program code and/or reports

Bandung, 04 September 2019

(Artificial Intelligence Lecturer Team)

**List of Artificial Intelligence Teaching Assistant, First Term 2019/2020**

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