Report about GA-exercise

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SUSTC

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**GA for Single objective binary optimization problems**

## One-max problem

The one-max problem is the simplest optimization problem. The solution of the one-max

problem is a D-dimensional binary vector x = (x1, …, xD)T∈ {0, 1}D. The objective function f to be maximized is defined as follows:

### Exercise 1: Implement

From the below table and figure, I test 50 times and find that the algorithm can reach the optimal solution less than 700 iteration steps in most cases. But there are some cases can’t reach the optimal solution in 1000 iterations.

|  |  |  |
| --- | --- | --- |
| Sample size(D=50) | Mean | Deviation |
| 50 | 500.22 | 130.54 |

### Exercise 2: change the environmental selection method

Select the worst individual instead of randomly select to obsolete.

##### [Heading 5].

[Like all sections of your paper, references start on their own page. The references page that follows is created using the Citations & Bibliography feature, available on the References tab. This feature includes a style option that formats your references for APA 6th Edition. You can also use this feature to add in-text citations that are linked to your source, such as those shown at the end of this paragraph and the preceding paragraph. To customize a citation, right-click it and then click Edit Citation.] (Last Name, Year)

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Tables

Table 1

[Table Title]

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| Column Head | Column Head | Column Head | Column Head | Column Head |
| Row Head | 123 | 123 | 123 | 123 |
| Row Head | 456 | 456 | 456 | 456 |
| Row Head | 789 | 789 | 789 | 789 |
| Row Head | 123 | 123 | 123 | 123 |
| Row Head | 456 | 456 | 456 | 456 |
| Row Head | 789 | 789 | 789 | 789 |

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Figures title:

Figure 1. [Include all figures in their own section, following references (and footnotes and tables, if applicable). Include a numbered caption for each figure. Use the Table/Figure style for easy spacing between figure and caption.]

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