Evolutionary Computation Theory and Application (ECTA) – Assignment 1: One Max

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Assignment 1: One Max

The Task

- Write a Genetic Algorithm to solve the One-Max Problem
  - Target: a bit string with all ones
  - Should be able to optimize any number of bits
- Test the effects of 5 different parameter variations, such as:
  - Population Size vs. Number of Generations
  - Mutation Rate
  - Crossover Rate
  - Different Crossover Methods
  - Different Selection Methods
- Ensure a large enough sample for reliable results by repeating the experiments at least 30 times and reporting the median

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The Report

- Every .m file used should include comments describing the code
- Every .m file should be accompanied by an autogenerated report
- Use Sections (started with %%) to create headings out of comments within the code
- Report your results with illustrative figures and texts describing those figures
- A sample of the code and report are on LEA
  - You are encouraged to write your own code, this is given as a positive example for what we expect, and to give some hints on Matlab syntax
  - Remember: Your task will be to repurpose this code to solve another problem, make sure you understand the code! Just copying my example from LEA is not enough to pass!