INF3490/INF4490 Exercises - Week 2

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$\mathbb{P}$ marks the programming exercises, we strongly recommend using the python programming language for these. Exercises may be added/changed after publishing.

1 Representations

Recall all the representations that have been presented. Which mutation and recombination operators are compatible with which representations?

2 Bit flip mutation

Given the binary chromosome with length 4, calculate the probability that no bits, one bit and more than one bit will be flipped in a bit-flip mutation with $p_m = \frac{1}{4}$.

$\mathbb{P}$ 3 Crossover

Given the sequences (2,4,7,1,3,6,8,9,5) and (5,9,8,6,2,4,1,3,7). Implement these algorithms to create a new pair of solutions:

a. Partially mapped crossover (PMX).

b. Order crossover.

c. Cycle crossover.

Contact and Github

Corrections of grammar, language, notation or suggestions for improving this material are appreciated. E-mail me at **olehelg@uio.no** or use **GitHub** to submit an issue or create a pull request. The **GitHub repository** contains all source code for assignments, exercises, solutions, examples etc. As many people have been involved with writing and updating the course material, they are not all listed as authors here. For a more complete list of authors and contributors see the **README**.