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.

Corrections and suggestions

Corrections of grammar, language, notation or suggestions for improving these exercises are appreciated. E-mail me at: **olehelg@uio.no** or use **GitHub** to submit an issue or create a pull request.