

# Computational Morphology

## Homework 2, due 29.05.2017 by 10:25

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**Task 1** (3 points) Build a deterministic transducer ( $\Sigma = \{A, B\}$ ) that accepts only strings with even number of A's and for them flips all the symbols (changes A's into B's and vice versa).

**Task 2** (7 points) Below you see some expressions in Irish and their translations in the mixed order. a mord, a bort, a xārtə, a yar'd'īn', a gārtə, a ηar'd'īn', a dūrəs, a noxtuūr, a fostə, a dom, a far'k, a bar'k', a vark

his ship, his park, their park, their map, his map, his garden, their garden, their volume, their trip, their doctor, their harbor, their deck, his post.

a) Find out which translation corresponds to which expression.

b) Build a transducer that takes as its input one of the translations above or one of the following expressions:

their ship, his harbor, his deck, their post

any provides as its output a corresponding Irish expression.

**Remarks:** the sound labelled with 'x' corresponds to 'h', 'y' is a voiced consonant paired with 'x'; 'η' is a nasal consonant pronounced in the same place as 'k'; the mark ' after the consonant indicates its softness, the bar above a vowel – its length.

**This task requires some knowledge about phonetics/phonology, so if you don't possess it yourself, work together with someone who does.**