Finite Automata Theory and Formal Languages
TMV027/DIT321 – LP4 2018

Turing Machines

Assignment 7 – Deadline: Friday 25th of May 23:59

Assignments should be done and submitted individually!

For obtaining full points the answers should contain enough explanation/description so that they are easy to understand.

1. Consider the language$\mathcal{L} = \{0^n1^m0^n1^m \mid m, n \geqslant 0\}$.

   (a) (2.5pts) Give a transition diagram of a deterministic Turing machine for $\mathcal{L}$;

   (b) (1.25pts) Give a high-level description for the Turing machine in a);
   (observe that it should be clear from this description what is the "task" performed by each of the states)

   (c) (0.25pts) Is your Turing machine a Turing decider? Justify the answer.