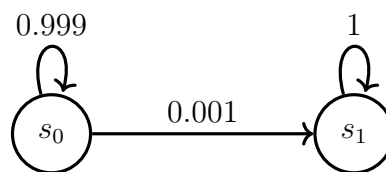


Quantitative Verification – Exercise sheet 5

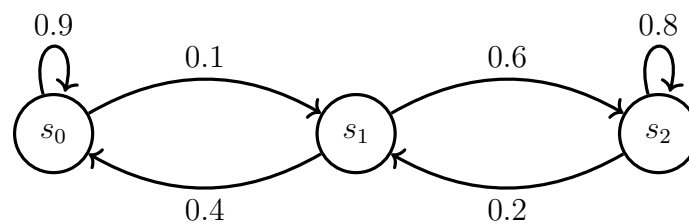
Exercise 5.1

Compute the probability of reaching s_1 from s_0 in the following simple Markov Chain. Additionally, compute the probability of reaching s_1 within 10 steps.



Exercise 5.2

Write down the matrix representation of the following Markov Chain. Suppose the initial distribution is $\pi_0 = [1, 0, 0]$, i.e. the process starts in s_0 . What is the transient distribution after three time steps?



Remark. Download and install the PRISM Model Checker from <http://www.prismmodelchecker.org/download.php> or <https://github.com/prismmodelchecker/prism/releases>.