

Exercise Sheet 0: Introduction to Python

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Exercise 0.1. Find a Python 3 interpreter and a suitable code editor for your platform and make sure they are installed on your computer.

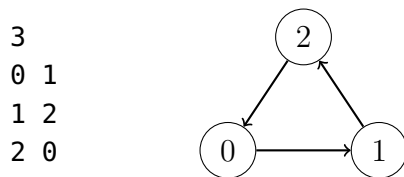
Exercise 0.2. Write a (Python) program that takes as input a directed graph in the format given below, and prints out all vertices that have maximal out-degree. The input should be read from a file given as a command-line argument.

The file format is as follows:

$$\begin{array}{l} n \\ s_1 \quad t_1 \\ s_2 \quad t_2 \\ s_3 \quad t_3 \\ \vdots \quad \vdots \\ s_m \quad t_m \end{array}$$

The first line consists of a single integer n , the number of vertices of the graph. Each of the following lines consists of two integers s_i and t_i , specifying an edge from vertex s_i to vertex t_i , separated by a space. Vertices are numbered $0, 1, \dots, n - 1$.

As an example, the following input encodes a directed triangle:



Data files are available at <https://github.com/knowsys/Course-Knowledge-Graphs/tree/master/test-data/>.

Exercise 0.3. Modify your program to compute the vertices of minimal in-degree instead.