Exercise Sheet 08

Task 1

6 p.

Industry classification or industry taxonomy is a type of economic taxonomy that classifies companies, organizations and traders into industrial groupings based on similar production processes, similar products, or similar behavior in financial markets.

Consider the following (simplified) usecase: The NAICS (North American Industry Classification System) numbering system employs a five or six-digit code at the most detailed industry level. The first five digits are generally the same in all three countries. The first two digits designate the largest business sector, the third digit designates the subsector, the fourth digit designates the industry group, the fifth digit designates the NAICS industries, and the sixth digit designates the national industries. For example:

`5 Industry, 54 Professional, scientific, and technical services, 541 Professional, scientific, and technical services, 5411 Legal services, 54111 Offices of lawyers, 541110 Offices of lawyers`.

In addition, the Standard Occupational Classification (SOC) system classifies workers into occupational categories. For example, the first two digits refer to a sector (e.g. `53-0000 Transportation and Material Moving Occupations`) and the the next to a subcategorie (e.g. `53-1000 Supervisors of Transportation and Material Moving Workers`). The categories are sorted in increasing numbers.

We may wish to add the following data:

- Which occupations (SOC subcategories) work in which industry (national industry, in percentage).
- Which occupations (SOC subcategories) are trained in which industry (national industry).

Provide a data schema for these data and highlight the original source.

Task 2

2 p.

Consider the following question: "With which education or training do I have chances to work in industry x?" Transfer this question into a graph-theoretical formulation and provide a sketch solution in pseudocode.

Task 3

2 p.

Consider the following question: "Which largest business sector x is employing the most workers initially trained in another largest business sector?" Transfer this question into a graph-theoretical formulation and provide a sketch solution in pseudocode.

Task	1	2	3	total
Points	6	2	2	10
reached				