

List of Tables

Table 1.	Five students' records [Sahni, 2005]	40
Table 2.	Examples of the graph models with explicit schema.....	55
Table 3.	Examples of the graph models with implicit schema	60
Table 4.	Methods for storing data in nine ontologies	72
Table 5.	Description of nodes of the sample graph and index	76
Table 6.	Description of edges of the sample graph and index	76
Table 7.	Multi-layer representation of the sample graph with nodes as locations.....	77
Table 8.	Multi-layer representation of the sample graph with edges as locations.	77
Table 9.	Realizations of MDAM:	82
Table 10.	Final multi-layer representation of sample graph	92
Table 11.	Representation of the sample graph by RDF-triples.....	94
Table 12.	Time (ms) for writing in text file and NL-ArM archive	98
Table 13.	Time correlation for writing in text file and NL-ArM archive	99
Table 14.	Size in bytes of the text file and the NL-ArM archive.....	101
Table 15.	Relation between sizes of the text file and NL-ArM archive	102
Table 16.	Writing time comparison of Firebird and NL-ArM	105
Table 17.	Average in milliseconds of writing time data	106
Table 18.	Comparison of Firebird and NL-ArM for the case of large empty zones in the matrix.....	108
Table 19.	Influence of storing types	108
Table 20.	Influence of the offset from 1 to 1000000	109
Table 21.	Reading time comparison of Firebird and NL-ArM	111
Table 22.	Average in milliseconds (ms) of reading time data	111
Table 23.	A simple vocabulary	116

Table 24.	A simple ontology.....	116
Table 25.	Experimental data for NL-storing of a dictionary.....	118
Table 26.	WordNet lexicographer files.....	127
Table 27.	Experimental data for storing WordNet as thesaurus	130
Table 28.	Three notions behind the word "pipe"	133
Table 29.	Some commonly accepted concepts and definitions	134
Table 30.	Basic functions of the well-known ontological systems [Youn & McLeod, 2006]	138
Table 31.	Additional functions of the well-known ontological systems [Youn & McLeod, 2006].....	140
Table 32.	Report of the queries from Figure 47 a) and b) for all 45 layers of WordNet and for both queries (cut;*) and (CUT;*).....	143
Table 33.	Experimental data for storing WordNet as ontology	148
Table 34.	Results for speed of WordArM and OntoArM programs	148
Table 35.	Benchmark results for dataset S1 (homepages-fixed.nt)	164
Table 36.	Benchmark results for dataset S2 (BSBM 250K).....	165
Table 37.	Benchmark results for dataset S1 (infoboxes-fixed.nt).....	166
Table 38.	Benchmark results for dataset S2 (BSBM 100M)	166
Table 39.	Details about used artificial middle-size RDF-datasets	169
Table 40.	Benchmark results for BSBM 50K	170
Table 41.	RDFArM results for homepages-fixed.nt	171
Table 42.	Benchmark results for homepages-fixed.nt	172
Table 43.	RDFArM results for BSBM 250K.....	173
Table 44.	Benchmark results for BSBM 250K	174
Table 45.	RDFArM results for geocoordinates-fixed.nt	175
Table 46.	Benchmark results for geocoordinates-fixed.nt	176
Table 47.	RDFArM results for BSBM 1M	177
Table 48.	Benchmark results for BSBM 1M	178
Table 49.	RDFArM results for BSBM 5M	180
Table 50.	Benchmark results for BSBM 5M	182
Table 51.	Details about artificial large RDF-datasets	183

Table 52.	Benchmark results for infoboxes-fixed.nt.....	184
Table 53.	Benchmark results for multiprocessor loading of infoboxes-fixed.nt.....	185
Table 54.	Benchmark results for BSBM 25M	186
Table 55.	Benchmark results for multiprocessors' loading of BSBM 25M	187
Table 56.	Benchmark results for BSBM 100M	188
Table 57.	Benchmark results for BSBM 100M and 200M on Configuration C	189
Table 58.	Benchmark results for multiprocessors' loading of BSBM 100M	190
Table 59.	Critical values for the two-tailed Nemenyi test	195
Table 60.	Information about tests and results	195
Table 61.	Benchmark values for middle size datasets	196
Table 62.	Chosen benchmark values for middle size datasets.....	197
Table 63.	Ranking of tested systems.....	197
Table 64.	Average ranks of systems and distance to average rank of the first one.....	198
Table 65.	Access times for two-element instances	199
Table 66.	Loading times for three-element instances	200
Table 67.	Results for storing datahub/data-0.nq	200
Table 68.	Multi-layer representation of the family tree	218
Table 69.	A part from Table 32	226
Table 70.	RDFArM loading results for infoboxes-fixed.nt	251
Table 71.	Comparison of NLArM storing time and log n for 100 millions triples.....	256
Table 72.	XML description of the sample graph by ICON Ontological Editor.....	269
Table 73.	List of sample layers in ICON	271
Table 74.	Protégé database format.....	274
Table 75.	The Protégé QWL description of the sample graph.....	276
Table 76.	The Protégé RDF description of the sample graph.....	277
Table 77.	Storage characteristics of outlined RDF triple stores	292