Ontology-based Data Access: Theory and Practice

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`http://ontop.inf.unibz.it/ijcai-2018-tutorial`

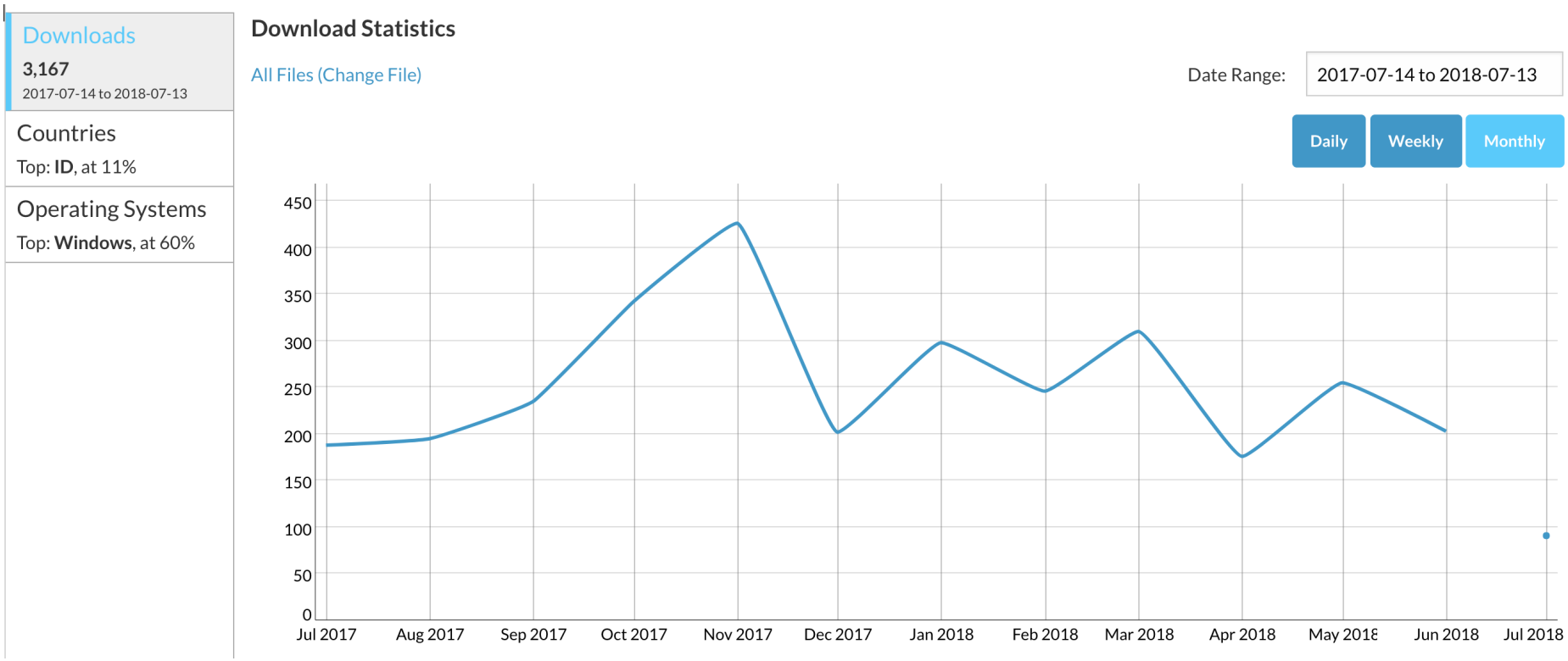
Implementations of OBDA systems

- Mastro [Calvanese et al., 2011] [1], Sapienza Università di Roma & OBDA systems SRL, Italy
- Morph [Priyatna et al., 2014] [2], Technical University of Madrid, Spain
- Ontop [Calvanese et al., 2017][3], Free University of Bolzano, Italy
- Stardog[4], Stardog Union, US
- Ultrawrap [Sequeda et al., 2013] [5], Capsenta, US
- Oracle Spatial and Graph RDF Semantic Graph [6]

[1] http://www.obdasystems.com/it/mastro
[2] https://github.com/oeg-upm/morph-rdb
[3] http://ontop.inf.unibz.it
[4] http://www.stardog.com
[5] https://capsenta.com/ultrawrap
[6] http://www.oracle.com/technetwork/database/options/spatialandgraph

ontop

- Ontop is an OBDA platform
- It supports all major database engines (e.g., Oracle, DB2, MS SQL Server, PostgreSQL, MySQL).
- Open source under Apache 2 License



Hands-on with Ontop

- Scenario: Integration of the information systems of two universities
- Requirements
  - Java 8
  - H2 with preloaded datasets
  - Protégé bundle with Ontop for editing ontologies and mappings
  - Tomcat bundle with Ontop for deploying a SPARQL endpoint
- Programme
  - Mapping the first data source
  - Mapping the second data source
  - Deploying a SPARQL endpoint
- Instruction: `https://github.com/ontop/ontop-examples/tree/master/ijcai-18-tutorial`

Tips

- Protégé does not work with newer versions (>8) of Java
- Reasoner needs to be restarted whenever ontology or mapping are changed. Reasoner “stop” and “start” is more reliable than “synchronize”.
- The SPARQL endpoint can be done independently

References I

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Sequeda, J. F. and D. P. Miranker (2013). "Ultrawrap: SPARQL Execution on Relational Data". In: *J. of Web Semantics* 22, pp. 19–39.

Priyatna, F., O. Corcho, and J. F. Sequeda (2014). "Formalisation and Experiences of R2RML-based SPARQL to SQL Query Translation Using morph". In: *Proc. of WWW*, pp. 479–490.

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