grlc: the git repository linked data API constructor.

Albert Meroño-Peñuela[1] and Carlos Martinez-Ortiz[2]

1 Vrije Universiteit Amsterdam **2** Netherlands eScience Center

Summary

RDF is a knowledge representation format (often also refered to as Linked Open Data) which has gained popularity over the years and it continues to be adopted in different domains such as life sciences and humanities. RDF data is typically represented as sets of triples, consisting of subject, predicate and object, and is usually stored in a triple store. SPARQL is one of the most commonly used query languages used to retrieve linked data from a triple store. However writing SPARQL queries is not a trivial task and requires certain level of expertise.

Domain experts usually face the challenge having to learn SPARQL, when all they want is to be able to access the information contained in the triple store. Knowledge engineers with the necessary expertise can help domain experts write SPARQL queries, but they still need to modify part of the query every time they want to extract new data.

`grlc` is a lightweight server that takes SPARQL queries (stored in a GitHub repository, local file storage or listed in a URL), and translates them to Linked Data Web APIs. This enables universal access to Linked Data. Users are not required to know SPARQL to query their data, but instead can access a web API. In this way, `grlc` enables researchers to easily access knowledge represented in RDF format.

`grlc` has been used in a number of scientific publications (Meroño-Peñuela & Hoekstra, 2016, pp. @Merono_ISWC2017, @Merono_ESWC2017, @Merono_ISWC2019) and PhD thesis (Singh, n.d.).

Acknowledgements

References

Lisena, P., Meroño-Peñuela, A., Kuhn, T., & Troncy, R. (2019). Easy web api development with sparql transformer. In C. Ghidini, O. Hartig, M. Maleshkova, V. Svátek, I. Cruz, A. Hogan, J. Song, et al. (Eds.), *The semantic web – iswc 2019* (pp. 454–470). Cham: Springer International Publishing.

Meroño-Peñuela, A., & Hoekstra, R. (2016). Grlc makes github taste like linked data apis. In H. Sack, G. Rizzo, N. Steinmetz, D. Mladenić, S. Auer, & C. Lange (Eds.), *The semantic web* (pp. 342–353). Cham: Springer International Publishing.

Meroño-Peñuela, A., & Hoekstra, R. (2017a). Automatic query-centric api for routine access to linked data. In C. d'Amato, M. Fernandez, V. Tamma, F. Lecue, P. Cudré-Mauroux, J.

Sequeda, C. Lange, et al. (Eds.), *The semantic web – iswc 2017* (pp. 334–349). Cham: Springer International Publishing.

Meroño-Peñuela, A., & Hoekstra, R. (2017b). SPARQL2Git: Transparent sparql and linked data api curation via git. In E. Blomqvist, K. Hose, H. Paulheim, A. Ławrynowicz, F. Ciravegna, & O. Hartig (Eds.), *The semantic web: ESWC 2017 satellite events* (pp. 143–148). Cham: Springer International Publishing.

Singh, G. (n.d.). *Genomics data integration for knowledge discovery using genome annotations from molecular databases and scientific literature* (PhD thesis). Wageningen University; Research. Retrieved from https://doi.org/10.18174/505685