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Brainomics - A management system for exploring and merging heterogeneous brain mapping data

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Introduction
- Number of large datasets for brain mapping have been released [1, 2].
- Neuroimaging datasets more routinely include clinical data or genetics data.
- Exploitation requires
  - An efficient organization to integrate all the measures
  - An easy access to the relevant information.

http://www.brainomics.net/demo/
- Brings together brain imaging and genetics data.
- Relies on a high-level query language (RQL).
- Solution based on CubicWeb, a semantic framework.
- Visualizing / exporting data in several formats.

Query using RQL
- Similar to the W3C's SPARQL [6].
- Supports the basic operations (selection, insertion, etc.).
- Subquerying, ordering, counting, ...

```
Any S WHERE S is Subject, S age > 30, S gender "female"
```

```
Any SA WHERE S is Subject, S age > 25, X is QuestionnaireRun, X concerns S, A is Answer, A questionnaire_run X, A question Q, Q text "algebre", A value > 4, SA is Scan, SA concerns S, SA type "c map"
```

Conclusion
- Open source solution to manage brain imaging datasets and associated meta data.
- Powerful querying and reporting tool, customized for emerging imaging-genetics field.

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[2] fcon_1000.projects.nitrc.org/indi/abide/