A Semantic Web/RDF Library for .Net Developers

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Motivation

- Wanted to be able to code PhD Research projects using a .Net technology stack
- Existing libraries didn't fit project needs
  - Limited choice of 3rd Party Triple Stores
  - Lack of latest SPARQL Support i.e. 1.1 features
  - Some libraries didn't really feel like .Net
    - i.e. Java style in design, naming conventions etc.

About the Library

- Completely free and open source
  - Triple licensed – pick from GPL, LGPL or MIT depending on your needs

- Written in C# for .Net 3.5 and higher

- Builds for standard .Net, Mono, Silverlight and Windows Phone 7 (latter two are cut down and community contributed)

Design Overview

- ## Core RDF Model
  - Nodes, Triples, Graphs and Triple Stores

- ## Extensible at almost every level
  - Plug in your own implementations to the API for everything from Graphs to external Triple Stores

- ## Uses simple and intuitive .Net features
  - LINQ to Objects, Properties, Indexers, Extension Methods etc.

Simple Intuitive Code

```csharp
//Load a Graph from a File
Graph g = new Graph();
g.LoadFromFile("example.rdf");

//Print all Triples with a Blank Node Subject
NTriplesFormatter formatter = new NTriplesFormatter();
foreach (Triple t in g.Triples)
{
  if (t.Subject.NodeType == NodeType.Blank)
  {
    Console.WriteLine(t.ToString(formatter));
  }
}
```

Leviathan - A SPARQL 1.1 Engine

- Capable of performing SPARQL queries in-memory on small amounts of data (<=1m Triples)

- Supports both Query and Update including powerful features like:
  - Property Paths
  - Federated Query Extensions
  - Update Transactions

3rd Party Triple Store Support

- Supports a range of well known 3rd Party Triple Stores
  - AllegroGraph, 4store, Fuseki, Joseki, Sesame, Talis, Stardog and Virtuoso
  - Plus generic SPARQL store support
- All accessed by a common interface i.e. easy to switch in and out different storage as needed

Tooling

- We also provide a Toolkit of useful command line and GUI tools
  - Includes utilities like conversion and query
  - Includes rdfEditor our Notepad replacement for RDF and SPARQL editing
- Designed to make it possible to get you started experimenting with RDF and SPARQL on Windows without having to code yourself

dotNetRDF
An Open Source C#.Net Library for RDF

Coming Soon

- Improvements and optimisations of our SPARQL Engine

- Full RDFa 1.1 parsing support including RDFa in SVG, XML etc.

- Full SPIN (SPARQL Inferencing Notation) implementation

Future Plans

- Refresh of our SQL based storage options

- OWL Support

- SPARQL Extensions
  - Full Text search
  - GeoSPARQL

Questions?

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