# Lab 8 – node.js SPARQL & RDF

In this lab we are going to build a node server to execute a SPARQL query against an endpoint and print out the results in a webpage.

A refresher on some semantic web concepts:

**SPARQL**: A protocol and query language for retrieving linked data (RDF) stored in triplestores.

<http://www.w3.org/TR/rdf-sparql-query/>

Basic query:

select ?subject ?predicate ?object where { ?subject ?predicate ?object }

* Returns three variables that satisfy the pattern within the where clause. This will return ALL triples from the queried dataset.

**Triplestore**: A database for storing RDF data. A triplestore will usually have a SPARQL endpoint implemented on top of it to allow querying the data.

* <http://dbpedia.org/> has a triplestore containing data extracted from Wikipedia.org

**Endpoint**: A service built on a triplestore that receives query requests from clients and responds with the matching triples.

* <http://dbpedia.org/sparql> is an endpoint for querying DBpedia’s data.

Remember that SPARQL allows HTTP GET requests, so that is what you will use to communicate with the endpoint and run the query.

You need to come up with a meaningful query to test on DBpedia, come up with something with 3 columns (variables) and no more than 10 results. There are ways to limit the number of results in the result set.

You will need an interface for your application where you can provide the query and output the results.

Your interface should include the following elements:

1. An input text field to enter the query.
2. A button to request query execution.
3. An area to output the results of the query.

You should be able to provide a query to the application and click the button to execute the query, then the query would be passed on to the back-end where a request will be made to the endpoint. When the results are returned they should be passed back to the front end where they are parsed and output as HTML.

You will be graded on the following;

Formatting and coding quality : 10

Objective 1 – Interface & server : 10

Objective 2 – Query & result : 10

Creativity/Coding style : 10

Documentation/Read.me : 10