

LINQ to JSON



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HELPING DEVELOPERS UNDERSTAND SEARCH & BIG DATA

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LINQ

Language-Integrated Query

Extends Powerful Query Capabilities

- To C# and VB.NET

Functions

Standard and easily learned patterns

- For querying and updating data
- Potentially to any store



LINQ

LINQ to SQL, LINQ to XML, LINQ to ADO.NET, LINQ to objects

Circa Visual Studio 2008

We can use it with Json.NET

Under Newtonsoft.JSON.Linq



LINQ to JSON

Creating JSON

Parsing JSON

Querying JSON with LINQ

Querying JSON with
SelectToken



Create JSON Using LINQ

Imperative

Declarative

FromObject



Demo



Create JSON Using LINQ: Imperatively



Demo



Create JSON Using LINQ: Declaratively



Demo



Create JSON Using LINQ: FromObject




```
JsonObject.Parse(authorJson)
```

```
(JsonObject) JToken.ReadFrom(new JsonTextReader(streamReader))
```

Parsing JSON Using LINQ

Parse JSON from a string

Load JSON directly from a file



Demo



Parse JSON from String



Demo



Parse JSON from Stream



Querying JSON with LINQ

Multiple ways of getting data from JSON objects using LINQ

- Property name → Author["name"]
- Collection index → Author[0]

Children

- Get collections under the object

And apply functions

- where/order by/select/sum/...

Fine grained control working with JSON



Demo



Simple LINQ to JSON



Demo



Read Values from JSON Using LINQ



Demo



Querying JSON with LINQ Functions



SelectToken for Dynamic Querying



The most powerful way of querying

- With LINQ to JSON

Single string used to get desired JToken

- JSONPath

Null is returned if nothing found

Combine SelectToken with LINQ functions

JSONPath:

<http://goessner.net/articles/JsonPath>

Similar to XPath for those familiar with XML



JSONPath

`$.views[0].watchedSeconds`

Dot notation

`$['views'][0]
['watchedSeconds']`

Bracket notation

`$.views[?(@.course == 'Solr')]`

Iterate and filter

`*`

**Wildcards and
Expressions**

`$..secondsWatched`

Descendants



Demo



Using SelectToken



Annotations



Associate objects with LINQ to JSON

- JObject, JArray, and JValue

Not part of JSON specification

Not represented as part of JSON text

- Json.NET specific



Annotations



Used to track

- Events, changes, or anything in particular

Example

- Useful as dynamic and self-contained logging mechanism



Demo



Annotations



Takeaway



Newtonsoft.JSON.Linq

JTokenReader and JTokenWriter

Parse JSON

Create JSON

- Imperative
- Declarative
- FromObject



Takeaway



Query JSON

- Property value
- Collection index

Children can be used

- To iterate over descendent objects

SelectToken (JSONPath)

