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**ONTOLOGÍAS EN LA WEB**

**10. RDF DENTRO DE HTML**

# MOTIVACIONES

- ▶ más fácil de agregar a sitios Web
- ▶ permite expresar meta-datos de un documento Web (página, email, ...)

# DATOS ESTRUCTURADOS EN HTML

util para agregadores de contenido:

- ▶ motores de búsqueda: Google, Bing, ...
- ▶ redes sociales: Facebook, ...
- ▶ gestores de email: Gmail, ...

# DATOS ESTRUCTURADOS EN HTML: FORMATOS

- ▶ 2004 RDFa (idea)
- ▶ 2005 Microformats
- ▶ 2008 RDFa 1.0 (XHTML)
- ▶ 2009 Microdata (HTML 5)
- ▶ 2012 RDFa 1.1 (XHTML o HTML)
- ▶ 2014 JSON-LD 1.0

### XHTML + RDFa (1.0)

```
<html xmlns="http://www.w3.org/1999/xhtml"
      xmlns:foaf="http://xmlns.com/foaf/0.1/"
      xmlns:dc="http://purl.org/dc/elements/1.1/"
      version="XHTML+RDFa 1.0" xml:lang="en">
  <head>
    <title>John's Home Page</title>
    <base href="http://example.org/john-d/" />
    <meta property="dc:creator"
          content="Jonathan Doe" />
    <link rel="foaf:primaryTopic"
          href="http://example.org/john-d/#me" />
  </head>
  <body>
    ...
  </body>
</html>
```

# RDF GENERADO

```
PREFIX foaf: <http://xmlns.com/foaf/0.1/>
```

```
PREFIX dc: <.../dc/elements/1.1/>
```

```
<http://example.org/john-d/>
```

```
  dc:creator "Jonathan Doe"@en;
```

```
  foaf:primaryTopic
```

```
    <http://example.org/john-d/#me>.
```

### XHTML + RDFa (1.0): BODY

```
<body about="http://example.org/john-d/#me">
  <h1>John's Home Page</h1>
  <p>
    My <span rel="foaf:interest"
      resource="urn:ISBN:0752820907">
        favorite book is the inspiring
        <span about="urn:ISBN:0752820907">
          <cite property="dc:title">
            Weaving the Web
          </cite> by
          <span property="dc:creator">
            Tim Berners-Lee
          </span>
        </span>
      </span>.
    </p>
  </body>
```

### RDF GENERADO: BODY

```
PREFIX foaf: <http://xmlns.com/foaf/0.1/>
```

```
PREFIX dc: <.../dc/elements/1.1/>
```

```
<http://example.org/john-d/#me>
```

```
  foaf:nick "John D"@en;
```

```
  foaf:interest <urn:ISBN:0752820907>.
```

```
<urn:ISBN:0752820907>
```

```
  dc:creator "Tim Berners-Lee"@en;
```

```
  dc:title "Weaving the Web"@en.
```



# RDF GENERADO

```
PREFIX foaf: <http://xmlns.com/foaf/0.1/>
PREFIX dc: <.../dc/elements/1.1/>
```

```
<http://example.org/john-d/>
  dc:creator "Jonathan Doe"@en;
  foaf:primaryTopic
    <http://example.org/john-d/#me>.
```

```
<http://example.org/john-d/#me>
  foaf:nick "John D"@en;
  foaf:interest <urn:ISBN:0752820907>.
```

```
<urn:ISBN:0752820907>
  dc:creator "Tim Berners-Lee"@en;
  dc:title "Weaving the Web"@en.
```

# HTML5 + RDFa (1.1)

```
<html prefix="dc: http://.../dc/elements/1.1/"  
      lang="en">  
  <head>  
    <title>John's Home Page</title>  
    <base href="http://example.org/john-d/" />  
    <meta property="dc:creator"  
          content="Jonathan Doe" />  
    <link rel="foaf:primaryTopic"  
          href="http://example.org/john-d/#me" />  
  </head>  
  <body about="http://example.org/john-d/#me">  
    ...  
  </body>  
</html>
```

## MICROFORMATS

```
<p class="h-card">
  
  <a class="p-name u-url"
    href="http://example.org">
    Joe Bloggs
  </a>
  <a class="u-email"
    href="mailto:joebloggs@example.com">
    joebloggs@example.com
  </a>,
  <span class="p-street-address">
    17 Austerstræti
  </span>
  <span class="p-locality">Reykjavík</span>
  <span class="p-country-name">Iceland</span>
</p>
```

# MICRODATA

```
<section itemscope
      itemtype="http://schema.org/Person">
Hello, my name is
<span itemprop="name">John Doe</span>.
<section
  itemprop="address"
  itemscope
  itemtype="http://schema.org/PostalAddress">
  I live at
  <span itemprop="streetAddress">
    1234 Peach Drive</span>,
  <span itemprop="addressLocality">
    Warner Robins</span>,
  <span itemprop="addressRegion">
    Georgia</span>.
  </section>
</section>
```

# JSON-LD

```
<html>
<head>
  <script type="application/ld+json">
    {
      "@context":
        "http://json-ld.org/contexts/person.jsonld",
      "@id":
        "http://dbpedia.org/resource/John_Lennon",
      "name": "John Lennon",
      "born": "1940-10-09",
      "spouse":
        "http://dbpedia.org/resource/Cynthia_Lennon"
    }
  </script>
</head>
<body>
  . . .
```

## DATOS ESTRUCTURADOS EN HTML: VOCABULARIOS

- **schema.org:**
  - ▶ mantenido por Google, Microsoft, Yahoo, Yandex
  - ▶ formatos: Microformat, RDF (RDFa, JSON-LD)
- **Open Graph Protocol:**
  - ▶ mantenido por Facebook
  - ▶ formatos: RDF (RDFa, JSON-LD)

# A PROPÓSITO DE JSON-LD...

- ▶ basado en JSON
- ▶ permite de adaptar JSON existente
- ▶ algunas ventajas en expresividad

# INTRODUCCIÓN A JSON-LD

- ▶ What is JSON-LD?

<https://youtu.be/vioCbTo3C-4>

- ▶ JSON-LD: Core Markup

[https://youtu.be/UmvWk\\_TQ30A](https://youtu.be/UmvWk_TQ30A)



## EMAIL

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