

# Implementing Annotations

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December 11, 2018

# Introduction

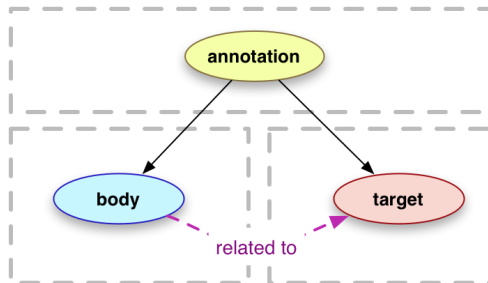


Figure 1: Model

# Introduction

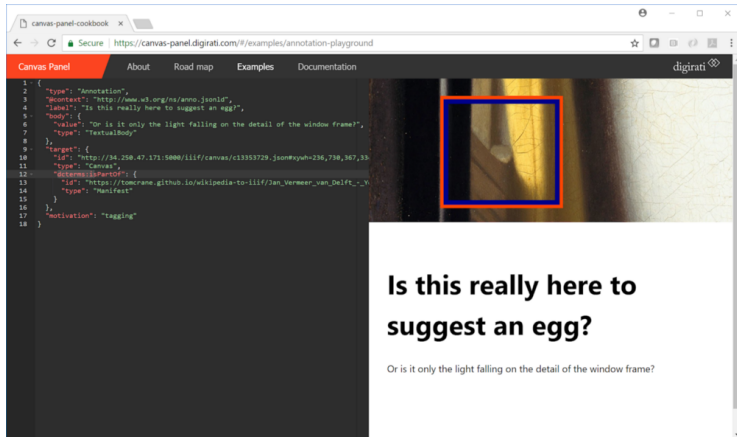


Figure 2: Annotation example

# Serialization

- ▶ Annotations use JSON-LD for serialization.
- ▶ JSON-LD: Javascript Object Notation - Linked Data
- ▶ JSON-LD is a way to create a network of standards-based, machine-readable data across Web sites.
- ▶ JSON-LD is based on the already successful JSON format.
- ▶ JSON-LD is an ideal data format for REST Web services, and unstructured databases such as CouchDB and MongoDB.

```
1  {  
2    "@context": "https://json-ld.org/contexts/person.jsonld",  
3    "@id": "http://dbpedia.org/resource/John_Lennon",  
4    "name": "John Lennon",  
5    "born": "1940-10-09",  
6    "spouse": "http://dbpedia.org/resource/Cynthia_Lennon"  
7  }
```

# person.jsonld I

```
1  {
2    "@context":
3    {
4      "Person": "http://xmlns.com/foaf/0.1/Person",
5      "xsd": "http://www.w3.org/2001/XMLSchema#",
6      "name": "http://xmlns.com/foaf/0.1/name",
7      "nickname": "http://xmlns.com/foaf/0.1/nick",
8      "affiliation": "http://schema.org/affiliation",
9      "depiction":
10     {
11       "@id": "http://xmlns.com/foaf/0.1/depiction",
12       "@type": "@id"
13     },
14     "image":
15     {
16       "@id": "http://xmlns.com/foaf/0.1/img",
17       "@type": "@id"
18     },
19     "born":
20     {
21       "@id": "http://schema.org/birthDate",
22       "@type": "xsd:date"
```

## person.jsonld II

```
23     },
24     "child":
25     {
26         "@id": "http://schema.org/children",
27         "@type": "@id"
28     },
29     "colleague":
30     {
31         "@id": "http://schema.org/colleagues",
32         "@type": "@id"
33     },
34     "knows":
35     {
36         "@id": "http://xmlns.com/foaf/0.1/knows",
37         "@type": "@id"
38     },
39     "died":
40     {
41         "@id": "http://schema.org/deathDate",
42         "@type": "xsd:date"
43     },
44     "email":
45     {
```

## person.jsonld III

```
46         "@id": "http://xmlns.com/foaf/0.1/mbox",
47         "@type": "@id"
48     },
49     "familyName": "http://xmlns.com/foaf/0.1/familyName",
50     "givenName": "http://xmlns.com/foaf/0.1/givenName",
51     "gender": "http://schema.org/gender",
52     "homepage":
53     {
54         "@id": "http://xmlns.com/foaf/0.1/homepage",
55         "@type": "@id"
56     },
57     "honorificPrefix": "http://schema.org/honorificPrefix",
58     "honorificSuffix": "http://schema.org/honorificSuffix",
59     "jobTitle": "http://xmlns.com/foaf/0.1/title",
60     "nationality": "http://schema.org/nationality",
61     "parent":
62     {
63         "@id": "http://schema.org/parent",
64         "@type": "@id"
65     },
66     "sibling":
67     {
68         "@id": "http://schema.org/sibling",
```

## person.jsonld IV

```
69         "@type": "@id"
70     },
71     "spouse":
72     {
73         "@id": "http://schema.org/spouse",
74         "@type": "@id"
75     },
76     "telephone": "http://schema.org/telephone",
77     "Address": "http://www.w3.org/2006/vcard/ns#Address",
78     "address": "http://www.w3.org/2006/vcard/ns#address",
79     "street": "http://www.w3.org/2006/vcard/ns#street-address",
80     "locality": "http://www.w3.org/2006/vcard/ns#locality",
81     "region": "http://www.w3.org/2006/vcard/ns#region",
82     "country": "http://www.w3.org/2006/vcard/ns#country",
83     "postalCode": "http://www.w3.org/2006/vcard/ns#postal-code"
84 }
85 }
```



## More JSON-LD

- ▶ For examples of JSON-LD for events, places, products, receipes, activities:
- ▶ [JSON-LD playground](#)

# Basic Annotation

```
1  {  
2    "@context": "http://www.w3.org/ns/anno.jsonld",  
3    "id": "http://example.org/anno1",  
4    "type": "Annotation",  
5    "body": "http://example.org/post1",  
6    "target": "http://example.com/page1"  
7  }
```

# Whole Image Annotation

```
1  {
2    "@context": "http://www.w3.org/ns/anno.jsonld",
3    "id": "http://example.org/annotations/anno-02",
4    "type": "Annotation",
5    "motivation": "tagging",
6    "body": "http://iconclass.org/rkd/25F24",
7    "target": {
8      "source": "http://example.org/images/E4.jpg",
9      "scope": "http://example.org/Emblem004.html"
10   },
11   "created": "2017-01-26T18:16:42.26Z",
12   "creator": {
13     "type": "Person",
14     "email": "mailto:tim@example.org",
15     "name": "Tim"
16   }
17 }
```

## Annotating Part of Image

```
1  {
2    "@context": "http://www.w3.org/ns/anno.jsonld",
3    "id": "http://example.org/anno4",
4    "type": "Annotation",
5    "body": "http://example.org/description1",
6    "target": {
7      "source": "http://example.com/image1",
8      "type": "Image",
9      "format": "image/jpeg",
10     "selector": {
11       "type": "FragmentSelector",
12       "conformsTo": "http://www.w3.org/TR/media-frags/",
13       "value": "xywh=100,100,300,300"
14     }
15   }
16 }
```

# Range Selector

```
1  {
2    "@context": "http://www.w3.org/ns/anno.jsonld",
3    "id": "http://example.org/anno28",
4    "type": "Annotation",
5    "body": "http://example.org/comment1",
6    "target": {
7      "source": "http://example.org/page1.html",
8      "selector": {
9        "type": "RangeSelector",
10       "startSelector": {
11         "type": "XPathSelector",
12         "value": "//table[1]/tr[1]/td[2] "
13       },
14       "endSelector": {
15         "type": "XPathSelector",
16         "value": "//table[1]/tr[1]/td[4] "
17       }
18     }
19   }
```

# Text Position Selector

```
1  {
2    "@context": "http://www.w3.org/ns/anno.jsonld",
3    "id": "http://example.org/anno24",
4    "type": "Annotation",
5    "body": "http://example.org/review1",
6    "target": {
7      "source": "http://example.org/ebook1",
8      "selector": {
9        "type": "TextPositionSelector",
10       "start": 412,
11       "end": 795
12     }
13   }
14 }
```

# Refinement of Selection

```
1  {
2    "@context": "http://www.w3.org/ns/anno.jsonld",
3    "id": "http://example.org/anno29",
4    "type": "Annotation",
5    "body": "http://example.org/comment1",
6    "target": {
7      "source": "http://example.org/page1",
8      "selector": {
9        "type": "RangeSelector",
10       "startSelector": {
11         "type": "XPathSelector",
12         "value": "//table[1]/tr[1]/td[2]",
13         "refinedBy": {
14           "type": "TextPositionSelector",
15           "start": 412,
16           "end": 795
17         }
18       },
19       "endSelector": {
20         "type": "XPathSelector",
21         "value": "//table[1]/tr[1]/td[4]"
22       }
23     }
24   }
```

# Complete Annotation Example I

```
1  {
2    "@context": "http://www.w3.org/ns/anno.jsonld",
3    "id": "http://example.org/anno38",
4    "type": "Annotation",
5    "motivation": "commenting",
6    "creator": {
7      "id": "http://example.org/user1",
8      "type": "Person",
9      "name": "A. Person",
10     "nickname": "user1"
11  },
12  "created": "2015-10-13T13:00:00Z",
13  "generator": {
14    "id": "http://example.org/client1",
15    "type": "Software",
16    "name": "Code v2.1",
17    "homepage": "http://example.org/homepage1"
18  },
19  "generated": "2015-10-14T15:13:28Z",
20  "stylesheet": {
21    "id": "http://example.org/stylesheet1",
22    "type": "CssStylesheet"
```



## Complete Annotation Example II

```
23     },
24     "body": [
25       {
26         "type": "TextualBody",
27         "purpose": "tagging",
28         "value": "love"
29       },
30       {
31         "type": "Choice",
32         "items": [
33           {
34             "type": "TextualBody",
35             "purpose": "describing",
36             "value": "I really love this particular bit of text in this XML. No really.",
37             "format": "text/plain",
38             "language": "en",
39             "creator": "http://example.org/user1"
40           },
41           {
42             "type": "SpecificResource",
43             "purpose": "describing",
44             "source": {
45               "id": "http://example.org/comment1",
```

## Complete Annotation Example III

```
46         "type": "Audio",
47         "format": "audio/mpeg",
48         "language": "de",
49         "creator": {
50             "id": "http://example.org/user2",
51             "type": "Person"
52         }
53     }
54 }
55 ]
56 }
57 ],
58 "target": {
59     "type": "SpecificResource",
60     "styleClass": "mystyle",
61     "source": "http://example.com/document1",
62     "state": [
63         {
64             "type": "HttpRequestState",
65             "value": "Accept: application/xml",
66             "refinedBy": {
67                 "type": "TimeState",
68                 "sourceDate": "2015-09-25T12:00:00Z"
```

## Complete Annotation Example IV

```
69         }
70     }
71 ],
72 "selector": {
73     "type": "FragmentSelector",
74     "value": "xpointer(/doc/body/section[2]/para[1])",
75     "refinedBy": {
76         "type": "TextPositionSelector",
77         "start": 6,
78         "end": 27
79     }
80 }
81 }
82 }
```

# Backenden Beklentiler

- ▶ Image annotation oluşturma
- ▶ Text annotation oluşturma
- ▶ Bir sayfaya ait bütün annotationları dönme