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# **X2R Documentation**

***Release 1.0***

**Feng-Pu Yang**

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## CONTENTS

|          |   |           |
|----------|---|-----------|
| <b>1</b> | <b>General License Definitions</b>      | <b>3</b>  |
| <b>2</b> | <b>Authors</b>                          | <b>5</b>  |
| 2.1      | Project Initiator and Manager . . . . . | 5         |
| 2.2      | Major Developer . . . . .               | 5         |
| 2.3      | Project Members . . . . .               | 5         |
| <b>3</b> | <b>X2R-ME License</b>                   | <b>7</b>  |
| <b>4</b> | <b>Concept and Design</b>               | <b>17</b> |
| 4.1      | Motivation . . . . .                    | 17        |
| 4.2      | Features . . . . .                      | 17        |
| 4.3      | Design . . . . .                        | 17        |
| <b>5</b> | <b>User's Guide</b>                     | <b>19</b> |
| 5.1      | User Guide . . . . .                    | 19        |
| <b>6</b> | <b>Developer's Guide</b>                | <b>23</b> |
| 6.1      | Coding Style . . . . .                  | 23        |
| 6.2      | Documentation . . . . .                 | 23        |
| 6.3      | Testing . . . . .                       | 23        |
| <b>7</b> | <b>API Reference</b>                    | <b>25</b> |
| 7.1      | Web API . . . . .                       | 25        |
| 7.2      | Python API . . . . .                    | 26        |
|          | <b>HTTP Routing Table</b>               | <b>29</b> |
|          | <b>Index</b>                            | <b>31</b> |



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## CONCEPT AND DESIGN

### 4.1 Motivation

m

### 4.2 Features

f

### 4.3 Design

d

This is the text of the section 2.

It refers to the section itself, see *my-reference-label*.



## USER'S GUIDE

### 5.1 User Guide

#### 5.1.1 API Reference

##### Extractor

For an input RDF content, this extractor service extracts terms from URIs of the RDF content.

##### Web API Definition:

**POST /extractor{?excludedNamespaces, checkUriStatus, rdfContent}**

##### Query Parameters

- **excludedNamespaces** – (*optional*) This specifies a list of namespaces to be skipped. That is, if a found URI belonged to this list, the URI will not be processed anymore.
- **checkUriStatus** – (*required*) This determines if *extractor* checks the status codes of found URIs.
- **rdfContent** – (*required*) This specifies the content of RDF to be processed.

##### Response Headers

- **Content-Type** – application/json

##### Status Codes

- **200** – no error
- **404** – exception

##### Query Parameter Format Detail

**excludedNamespace**

**checkUriStatus**

**rdfContent**

##### Response Format Detail

Content-Type: application/json

Response template:

```
{ "metadata": [],
  "mapping":
    [{ "status": "",
        "originalURI": "",
        "replacedURI": "",
        "term": "",
        "lineNumbers": ""
      }
    ]
}
```

mapping entry:

```
[{ "status": "",
   "originalURI": "",
   "replacedURI": "",
   "term": "",
   "lineNumbers": ""
}]
```

## Example

### Example request:

```
POST /extractor?excludedNamespaces&checkUriStatus&rdfContent HTTP/1.1
```

### Example response:

```
HTTP/1.1 200 OK
Vary: Accept
Content-Type: application/json

{"metadata": [
],
 "mapping":
  [{ "status": "N/A",
      "originalURI": "http://127.0.0.1/autoGeneratedUri",
      "replacedURI": "",
      "term": "auto generated uri",
      "lineNumbers": "3, 31"
    }
  ]
}
```

## Related Documents

### See also:

- Mapper's Web API

## Mapper

Given a RDF content, a URI mapping and an output format, this mapper service replaces URIs based on the URI mapping and return a RDF file in the output format

```
POST /mapper{?rdfContent, mapping, format}
```



### Query Parameters

- **rdfContent** – (required) This specifies the content of RDF to be processed.
- **mapping** – (required) This specifies the information needed for *mapper* to update the URIs found in *rdfContent*.
- **format** – (optional) This specifies the format of output.

### Response Headers

- **Content-Type** – application/rdf+xml

### Status Codes

- **200** – no error
- **404** – exception

### Query Parameter Format Detail

**rdfContent**

**mapping**

**format**

### Response Format Detail

Content-Type: application/rdf+xml

### Example

#### Example request:

```
POST /mapper?rdfContent&mapping&format HTTP/1.1
```

#### Example response:

```
HTTP/1.1 200 OK
Vary: Accept
Content-Type: application/rdf+xml
```

```
<?xml version="1.0" encoding="UTF-8"?>
  <rdf:RDF
    xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
    xmlns:geo="http://www.w3.org/2003/01/geo/wgs84_pos#"
    xmlns:xsd="http://www.w3.org/2001/XMLSchema#">
    <rdf:Description rdf:about="http://openisdms.sinica.edu.tw/VR/DaTongSportsCenter">
      <rdf:type rdf:resource="http://www.w3.org/2003/01/geo/wgs84_pos#SpatialThing"/>
      <updatedAt xmlns="http://openisdms.sinica.edu.tw/VR/"
        rdf:datatype="http://www.w3.org/2001/XMLSchema#dateTime">2013-07-31T03:23:47Z</updatedAt>
      <geo:long>121.516</geo:long>
      <hasTelephone xmlns="http://openisdms.sinica.edu.tw/VR/">2592-0055</hasTelephone>
      <hasName xmlns="http://openisdms.sinica.edu.tw/VR/">Da Tong Sports Center</hasName>
      <geo:location>No.51, Dalong St., Datong Dist., Taipei City 103, Taiwan (R.O.C.)</geo:location>
      <usedFor xmlns="http://openisdms.sinica.edu.tw/VR/">Sport</usedFor>
      <createdAt xmlns="http://openisdms.sinica.edu.tw/VR/"
        rdf:datatype="http://www.w3.org/2001/XMLSchema#dateTime">2012-11-28T09:05:13Z</createdAt>
```

```
<geo:lat>25.0648</geo:lat>
</rdf:Description>
</rdf:RDF>
```

### **Related Documents**

#### **See also:**

- [Extractor's Web API](#)

## DEVELOPER'S GUIDE

### 6.1 Coding Style

This project follows the python official coding style PEP8 a [pep8](#).

### 6.2 Documentation

### 6.3 Testing



## API REFERENCE

### 7.1 Web API

**POST /extractor{?excludedNamespaces, checkUriStatus, rdfContent}**

#### Query Parameters

- **excludedNamespaces** – (*optional*) This specifies a list of namespaces to be skipped. That is, if a found URI belonged to this list, the URI will not be processed anymore.
- **checkUriStatus** – (*required*) This determines if *extractor* checks the status codes of found URIs.
- **rdfContent** – (*required*) This specifies the content of RDF to be processed.

#### Response Headers

- **Content-Type** – application/json

#### Status Codes

- **200** – no error
- **404** – exception

For the detail spec., see `Extractor Web API`

**POST /mapper{?rdfContent, mapping, format}**

#### Query Parameters

- **rdfContent** – (*required*) This specifies the content of RDF to be processed.
- **mapping** – (*required*) This specifies the information needed for *mapper* to update the URIs found in *rdfContent*.
- **format** – (*optional*) This specifies the format of output.

#### Response Headers

- **Content-Type** – application/rdf+xml

#### Status Codes

- **200** – no error
- **404** – exception

For the detail spec., see `Mapper Web API`

## 7.2 Python API

`class extractor.Extractor` (*graph*)

Extractor parses an RDF content and provides services:

- 1.extract URIs
- 2.extract Blank Nodes
- 3.look up for URI's line number
- 4.translate URIs into terms

`getBnodes` ()

This function is used to extract blank nodes.

**Returns** Array<str>. This function returns an array of blank nodes.

`getUris` ()

This function is used to extract URIs.

**Returns** Array<str>. This function returns an array of URIs.

`get_lines` (*sio*, *lookup\_term*)

This function is used to look up “lookup\_term” inside the given RDF content.

**Parameters** *lookup\_term* (*str.*) – the uri for look up.

**Returns** str. A string with all the line numbers, where the luupup\_term is found, used “,” as the delimiter.

`testUri` (*uri*)

This function is used to test if the “uri” is reachable.

**Parameters** *uri* (*str.*) – the uri for testing reachability.

**Returns** boolean. True for reachable and False for unreachable.

`class mapper.Mapper` (*graph*)

`commit` ()

This function is used to save all URI replacements and output to a string.

**Returns** str. The string of result RDF with replaced URIs.

`mapping` (*json\_str*)

This function is used to replaced mutiple URIs at once.

**Parameters** *json\_str* (*str.*) – this json string defines multiple replacements

**Returns** str. The string of result RDF with replaced URIs.

`replaceUri` (*oUri*, *uUri*)

This function is used to systemantically replace URIs.

**Parameters**

- *oUri* (*str.*) – the original URI.
- *uUri* (*str.*) – the replced URI.

**Returns** int. The count of replacements.

`class tokenizer.Tokenizer`

Tokenizer realizes serveral tokenization heuristics:

- 1.identifying camelcase word
- 2.identifying all captials word
- 3.treat all non alphanumeric chars as delimiters

**tokenized** (*string*)

This function is the integration of all known tokenizers. Theoretically, any compound words can be tokenized by this function.

**Parameters** **string** (*str*) – The string to tokenize.

**Returns** **str** – the tokenized and normalized string.

**tokenized\_url** (*uri*)

This function truncate the input URI's head and output the tail part of the input URI. Be precisely, only the tail part after the last slash will be preserved. For example, input "<http://www.xx/yy/zz-AB>" will get the output as "zz ab"

**Parameters** **string** (*str*) – The string (URI) to tokenize.

**Returns** **str** – the tokenized and normalized string.





## HTTP ROUTING TABLE

**/extractor{?excludedNamespaces,  
checkUriStatus, rdfContent}**

POST /extractor{?excludedNamespaces,  
checkUriStatus, rdfContent},25

**/mapper{?rdfContent, mapping, for-  
mat}**

POST /mapper{?rdfContent, mapping,  
format},25



## C

`commit()` (`mapper.Mapper` method), 26

## E

`Extractor` (class in `extractor`), 26

## G

`get_lines()` (`extractor.Extractor` method), 26

`getBnodes()` (`extractor.Extractor` method), 26

`getUris()` (`extractor.Extractor` method), 26

## M

`Mapper` (class in `mapper`), 26

`mapping()` (`mapper.Mapper` method), 26

## R

`replaceUri()` (`mapper.Mapper` method), 26

## T

`testUri()` (`extractor.Extractor` method), 26

`tokenized()` (`tokenizer.Tokenizer` method), 27

`tokenized_url()` (`tokenizer.Tokenizer` method), 27

`Tokenizer` (class in `tokenizer`), 26