



# Viglet Turing ES

## *Developer Guide*

Viglet Team

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# Preface

Viglet Turing ES (<https://viglet.com/turing>) is an open source solution (<https://github.com/openturing>), which has Semantic Navigation and Chatbot as its main features. You can choose from several NLPs to enrich the data. All content is indexed in Solr as search engine.

# Chapter 1. More Documentation

Technical documentation on Turing ES is available at <https://docs.viglet.com/turing>.

# Chapter 2. Open Source Development

You can collaborate with Turing, participating in its development. Below are the steps to create your Turing environment.

## 2.1. Development Structure

### 2.1.1. Frameworks

Turing ES was developed using Spring Boot (<https://spring.io/projects/spring-boot>) for its backend.

The UI is currently using AngularJS (<https://angularjs.org>), but a new UI is being developed using Angular 12 (<https://angular.io>) with Primer CSS (<https://primer.style/css>).

In addition to Java, you also need to have Git (<https://git-scm.com/downloads>) and NodeJS (<https://nodejs.org/en/download/>) installed.

### 2.1.2. Databases

By default it uses the H2 database (<https://www.h2database.com>), but can be changed to other databases using Spring Boot properties. It comes bundled with OpenNLP (<https://opennlp.apache.org/>) in the same JVM.

### 2.1.3. Programming Language and Deploy

It uses Java 21 (<https://adoptium.net/temurin/releases/?package=jdk&version=21>) and its deployment is done with Maven and works on Unix and Windows.

### 2.1.4. Docker

To use Semantic Navigation and Chatbot you must have a Solr (<https://solr.apache.org>) service available. If you prefer to work with all the services Turing depends on, you can use docker-compose (<https://docs.docker.com/compose/install>) to start these services, we use the Docker Desktop (<https://www.docker.com/products/docker-desktop>) installed on computer.

### 2.1.5. IDE

You can use Spring Tools 4 for Eclipse (<https://spring.io/tools>) or Eclipse (<https://www.eclipse.org/downloads/>) or Visual Studio Code (<https://code.visualstudio.com/>) or IntelliJ (<https://www.jetbrains.com/pt-br/idea/>) as IDEs.

## 2.2. Download

Use the git command line to download the repository to your computer.

### 2.2.1. Turing Server and Connectors

```
git clone https://github.com/openturing/turing.git
```

## 2.3. Run during Development

To run Turing ES, execute the following lines:

### 2.3.1. Turing Server

#### Development

##### With UI

```
cd turing  
mvn spring-boot:run -pl turing-app
```

##### Without update UI

```
cd turing  
mvn spring-boot:run -pl turing-app -Dskip.npm
```

#### New Turing UI

Start the Turing Server using dev-ui profile



```
cd turing
mvn spring-boot:run -pl turing-app -Dskip.npm -Dspring-boot.run.profiles=dev-ui
```

And start one of the components of turing-ui

```
cd turing/turing-ui

## Console
ng serve console

## Search
ng serve sn

## Chatbot
ng serve converse

## Chatbot
ng serve welcome
```

**IMPORTANT**

You need start the Turing Server and Solr first.

**Build**

```
cd turing
mvn clean install
mvn package -pl turing-app
```

**2.3.2. Java SDK****Development**

```
cd turing-java-sdk
mvn package
java -cp build/libs/turing-java-sdk-all.jar
com.viglet.turing.client.sn.sample.TurSNClientSample
```

**IMPORTANT**

You need start the Turing Server and Solr first.

### 2.3.3. Build

```
cd turing-java-sdk
mvn package
```

Or use the jitpack into your project at <https://jitpack.io/#openturing/turing-java-sdk>

### 2.3.4. WEM Listener

```
cd turing
mvn package -pl turing-wem
```

For development, copy the `turing-wem/build/libs/turing-wem-all.jar` into `WEM_DIR/libs` and test the listener using `turing-wem` command line.

**IMPORTANT**

You need start the Turing Server and Solr first and restart WEM

### 2.3.5. Database Connector

```
cd turing
mvn package -pl turing-db
```

**IMPORTANT**

You need start the Turing Server and Solr first and restart WEM

### 2.3.6. Filesystem Connector

```
cd turing
mvn package -pl turing-filesystem
```

**IMPORTANT**

You need start the Turing Server and Solr first and restart WEM

### 2.3.7. Nutch

## Nutch 1.20

```
cd turing/  
mvn package -pl turing-nutch1_20
```

For development, copy the files of `turing-nutch/nutch1_18/build/extracted_dist` to `APACHE_NUTCH1_18/plugins/indexer-viglet-turing`

**IMPORTANT** | You need start the Turing Server and Solr first.

## 2.4. URLs

### 2.4.1. Turing Server

- Administration Console: <http://localhost:2700>. (admin/admin)
- Semantic Navigation Sample: <http://localhost:2700/sn/Sample>.

### 2.4.2. New Turing UI

- Welcome <http://localhost:4200/welcome>
- Console <http://localhost:4200/console>
- Search Page [http://localhost:4200/sn/template?\\_setsite=Sample&\\_setlocale=en\\_US](http://localhost:4200/sn/template?_setsite=Sample&_setlocale=en_US)
- Converse <http://localhost:4200/converse>

### 2.4.3. Docker Compose

- Administration Console: <http://localhost>. (admin/admin)
- Semantic Navigation Sample: <http://localhost/sn/Sample>.
- Solr: <http://localhost:8983>

### 2.4.4. Code Quality

You can check the quality of Turing Code at:

- SonarCloud at <https://sonarcloud.io/organizations/viglet-turing/projects>
- Github Actions at <https://github.com/openturing/turing/actions>
- Github Security at <https://github.com/openturing/turing/security/code-scanning>
- Codecov at <https://app.codecov.io/gh/openturing/turing>

# Chapter 3. REST API

## 3.1. API Overview

Turing ES offers a variety of robust, convenient, and simple RESTful Web service APIs to integrate data from Turing to any external system. Through Turing's API, your developers can create Web applications to interact directly with data that resides in Turing. Among the available features include RESTful APIs using JSON format, authentication via API Key invoking the existing user-level governance and security model built into Turing as well as a developer to manage access to API documentation and API keys. We have APIs to deliver search and cognitive features.

## 3.2. OpenAPI 3.0

The OpenAPI Specification (OAS) defines a standard, language-agnostic interface to HTTP APIs which allows both humans and computers to discover and understand the capabilities of the service without access to source code, documentation, or through network traffic inspection. When properly defined, a consumer can understand and interact with the remote service with a minimal amount of implementation logic.

An OpenAPI definition can then be used by documentation generation tools to display the API, code generation tools to generate servers and clients in various programming languages, testing tools, and many other use cases.

Turing OpenAPI 3.0 is available at <http://localhost:2700/v3/api-docs>.

## 3.3. Swagger

Swagger allows you to describe the structure of your APIs so that machines can read them. The ability of APIs to describe their own structure is the root of all awesomeness in Swagger. Swagger does this by asking your API to return a YAML or JSON that contains a detailed description of your entire API. This file is essentially a resource listing of your API which adheres to OpenAPI Specification.

You can access the Turing API documentation and test it directly using Swagger at <http://localhost:2700/swagger-ui.html>.

## 3.4. Generate an API Key

### 3.4.1. Step 1

Sign in Turing Administration Console (<http://localhost:2700>).

[Sign in] | *img/screenshots/turing-login.png*

### 3.4.2. Step 2

Access API Token Section.

[API Token Section] | *img/turing/0.3.9/api-token-menu.png*

### 3.4.3. Step 3

Create a new API Token with Title and Description.

[New API Token] | *img/turing/0.3.9/api-token-new.png*

### 3.4.4. Step 4

Will be create a new random API Token.

[API Token was generated] | *img/turing/0.3.9/api-token-hash.png*

## 3.5. Semantic Navigation

### 3.5.1. Search

Search on the semantic navigation site.

#### API Endpoint

```
GET|POST http://localhost:2700/api/sn/{{siteName}}/search
```

#### Headers

API headers include the mandatory information you send along with the request URL and body. This information helps provide insights into request context and authorization credentials that, in turn, allows access to protected resources.

Key	Value	Description
Key	api-key	API key helps authenticate the application with the server. For generating API key, refer to <a href="#">Generate an API Key</a>
Content-Type	application/json	Content-Type is a representation header that determines the type of data (media/resource) present in the request body
Accept	application/json	Determines the acceptable response type from the server

#### Path Parameters

Attribute	Required / Optional	Description	Example
siteName	Required	Site Name	Sample

### Query String

Attribute	Required / Optional	Description	Example
q	Required	Search Query.	q=foo
p	Required	Page Number, first page is 1. <b>DEFAULT: 1</b>	p=1
sort	Required	Sort values: <b>relevance</b> , <b>newest</b> and <b>oldest</b> . Or <b>FIELD: SORT</b> <b>DEFAULT: relevance</b>	sort=relevance or sort=title:asc
fq[]	Optional	Query Field. Filter by field using default operator in configuration or using the <b>fqOperator</b> (request) or <b>fq.op</b> (query string), using the following pattern: <b>FIELD: VALUE.</b>	fq[]=title:bar
fq.and[]	Optional	Query Field. Filter <b>AND</b> by field, using the following pattern: <b>FIELD: VALUE.</b>	fq.and[]=title:bar



Attribute	Required / Optional	Description	Example
fq.or[]	Optional	Query Field. Filter <b>OR</b> by field, using the following pattern: <b>FIELD: VALUE.</b>	fq.or[]=title:bar
fq.op	Optional	Query Field Operator. Filter <b>OR</b> by field, Operator values: <b>AND</b> and <b>OR</b> .	fq.op=AND
rows	Optional	Number of rows that query will return. <b>DEFAULT: Behavior Configuration</b>	rows=10
_setlocale	Required	Locale of Semantic Navigation Site	_setlocale=en_US
nfpr	Optional	Disable Auto Correction <b>DEFAULT: 0</b>	nfpr=1
group	Optional	Group by attribute	group=type

### Request Parameters

#### IMPORTANT

These parameters have precedence over the query string.

Attribute	Type	Required / Optional	Description
query	String	Required	Search Query.
page	Integer	Required	Page Number, first page is 1. <b>DEFAULT: 1</b>

Attribute	Type	Required / Optional	Description
sort	String	Required	Sort values: <b>relevance</b> , <b>newest</b> and <b>oldest</b> . Or <b>FIELD: SORT</b> . <b>DEFAULT: relevance</b>
fq	String	Optional	Query Field. Filter by field using default operator in configuration or using the <b>fqOperator</b> (request) or <b>fq.op</b> (query string), using the following pattern: <b>FIELD: VALUE</b> .
fqAnd	String	Optional	Query Field. Filter <b>AND</b> by field, using the following pattern: <b>FIELD: VALUE</b> .
fqOr	String	Optional	Query Field. Filter <b>OR</b> by field, using the following pattern: <b>FIELD: VALUE</b> .
fqOperator	String	Optional	Query Field Operator. Filter <b>OR</b> by field, Operator values: <b>AND</b> and <b>OR</b> .
rows	Integer	Optional	Number of rows that query will return. <b>DEFAULT: Behavior Configuration</b>

Attribute	Type	Required / Optional	Description
locale	String	Required	Locale of Semantic Navigation Site
group	String	Optional	Group by attribute
targetingRules	String[]	Optional	Targeting Rules. Restrict search based in: <b>FIELD: VALUE.</b>
targetingRulesWithCondition	Map<String, String[]>	Optional	Targeting Rules with Condition
targetingRulesWithConditionAND	Map<String, String[]>	Optional	Targeting Rules <b>AND</b> with Condition
targetingRulesWithConditionOR	Map<String, String[]>	Optional	Targeting Rules <b>OR</b> with Condition
populateMetrics	Boolean	Optional	If populate metrics
userId	String	Optional	User Id
disableAutoComplete	Boolean	Optional	Disable Auto Correction. <b>DEFAULT: false</b>

## Regular Search

### Example - Request

```
curl -X 'GET' \
'http://localhost:2700/api/sn/Sample/search?q=foobar&p=1&fq[]=state:WA&sort=relevance&rows=10&nfpr=0&_setlocale=en_US' \
-H 'Content-Type: application/json'
```

OR

```
curl -X 'POST' \  
  'http://localhost:2700/api/sn/Sample/search' \  
  -H 'Key: {{Enter your API KEY}}' \  
  -H 'Content-Type: application/json' \  
  -d '{  
    "query": "foobar",  
    "fq": "state:WA",  
    "sort": "relevance",  
    "rows": 10,  
    "locale": "en_US"  
  }'
```

### Example - Response

```
{  
  "pagination": [  
    {  
      "type": "CURRENT",  
      "text": "1",  
      "href":  
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance",  
      "page": 1  
    },  
    {  
      "type": "PAGE",  
      "text": "2",  
      "href":  
"/api/sn/Sample/search?q=foobar&p=2&_setlocale=en_US&sort=relevance",  
      "page": 2  
    },  
    {  
      "type": "PAGE",  
      "text": "3",  
      "href":  
"/api/sn/Sample/search?q=foobar&p=3&_setlocale=en_US&sort=relevance",  
      "page": 3  
    },  
    {  
      "type": "PAGE",  
      "text": "4",  
      "href":  
"/api/sn/Sample/search?q=foobar&p=4&_setlocale=en_US&sort=relevance",  
      "page": 4  
    },  
  ],  
}
```

```
{
  "type": "NEXT",
  "text": "Next",
  "href":
"/api/sn/Sample/search?q=foobar&p=2&_setlocale=en_US&sort=relevance",
  "page": 2
},
{
  "type": "LAST",
  "text": "Last",
  "href":
"/api/sn/Sample/search?q=foobar&p=480&_setlocale=en_US&sort=relevance",
  "page": 480
}
],
"queryContext": {
  "count": 4795,
  "index": "Sample",
  "limit": 10,
  "offset": 0,
  "page": 1,
  "pageCount": 480,
  "pageEnd": 10,
  "pageStart": 1,
  "responseTime": 51,
  "query": {
    "queryString": "foobar",
    "sort": "relevance",
    "locale": "en_US"
  },
  "defaultFields": {
    "title": "title",
    "date": "publicationDate",
    "description": "texts",
    "text": "text",
    "image": "image",
    "url": "url"
  }
},
"results": {
  "document": [
    {
      "source":
"/https://www.example.com/0df43c64ebee710VgnVCM100000d701210aRCRD",
      "elevate": false,
      "metadata": [
```

```

        {
            "href":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&fq[]=site%3ASam
ple Site",
            "text": "Sample Site"
        },
        {
            "href":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&fq[]=categories
%3AInova%C3%A7%C3%A3o",
            "text": "Inovation"
        },
        {
            "href":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&fq[]=type%3ANew
s",
            "text": "News"
        }
    ],
    "fields": {
        "author": "john",
        "description": "Loren",
        "title": "Loren",
        "type": "News",
        "url":
"https://www.example.com/0df43c64ebee710VgnVCM100000d701210aRCRD",
        "state": [
            "MA"
        ],
        "modificationDate": "2021-09-16T13:28:54.000+00:00",
        "site": "Sample Site",
        "texts": [
            "..."
        ],
        "provider": "Sample Site",
        "_version_": 1765073243578826752,
        "id": "0df43c64ebee710VgnVCM100000d701210aRCRD",
        "categories": [
            "Inovation"
        ],
        "source_apps": [
            "WEM"
        ],
        "publicationDate": "2021-09-16T13:28:59.000+00:00"
    }
}

```

```

    ]
  },
  "groups": [],
  "widget": {
    "facet": [
      {
        "facets": [
          {
            "count": 2343,
            "link":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&fq[]=type%3AArticle",
            "label": "Article"
          },
          {
            "count": 485,
            "link":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&fq[]=type%3ANews",
            "label": "News"
          },
          {
            "count": 267,
            "link":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&fq[]=type%3AVideo",
            "label": "Video"
          },
          {
            "count": 171,
            "link":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&fq[]=type%3AFaq",
            "label": "Faq"
          }
        ],
        "label": {
          "lang": "en",
          "text": "Types"
        },
        "name": "type",
        "description": "Content Type Field",
        "type": "STRING",
        "multiValued": false
      }
    ],
  }
}

```

```

    "facets": [
      {
        "count": 4764,
        "link":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&fq[]=site%3ASam
ple Site",
        "label": "Sample Site"
      }
    ],
    "label": {
      "lang": "en",
      "text": "Sites"
    },
    "name": "site",
    "description": "Site Name",
    "type": "STRING",
    "multiValued": false
  },
  {
    "facets": [
      {
        "count": 2603,
        "link":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&fq[]=categories
%3AInova%C3%A7%C3%A3o",
        "label": "Inovation"
      },
      {
        "count": 300,
        "link":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&fq[]=categories
%3AINOVA%C3%87%C3%830",
        "label": "Inovation"
      }
    ],
    "label": {
      "lang": "en",
      "text": "Categories"
    },
    "name": "categories",
    "description": "Categories",
    "type": "STRING",
    "multiValued": true
  },
  {
    "facets": [

```



```

        {
            "count": 2145,
            "link":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&fq[]=state%3ANA
",
            "label": "NA"
        },
        {
            "count": 325,
            "link":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&fq[]=state%3ASC
",
            "label": "SC"
        },
        {
            "count": 297,
            "link":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&fq[]=state%3APE
",
            "label": "PE"
        }
    ],
    "label": {
        "lang": "en",
        "text": "States"
    },
    "name": "state",
    "description": "State",
    "type": "STRING",
    "multiValued": true
}
],
"facetToRemove": null,
"similar": null,
"spellCheck": {
    "correctedText": false,
    "usingCorrectedText": true,
    "original": {
        "text": "foobar",
        "link":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&nfpr=1"
    },
    "corrected": {
        "text": "",
        "link":
"/api/sn/Sample/search?q=&p=1&_setlocale=en_US&sort=relevance"

```

```

    }
  },
  "locales": [
    {
      "locale": "en_US",
      "link":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance"
    }
  ],
  "spotlights": []
}
}

```

## Targeting Rules

Search on the semantic navigation site adding segmentation, restricting content based on defined segments.

### Example - Request

```

curl -X 'POST' \

'http://localhost:2700/api/sn/Sample/search?q=foobar&p=1&fq%5B%5D=state%3AWA&sort=r
ellevance&rows=10&nfpr=0&_setlocale=en_US' \
-H 'Content-Type: application/json' \
-H 'Key: {{Enter your API KEY}}' \
-d '{
  "userId": "string",
  "populateMetrics": true,
  "targetingRules": [
    "department:HR",
    "profile:Principal"
  ]
}'

```

### Example - Request

```

curl -X 'POST' \

'http://localhost:2700/api/sn/Sample/search?q=foobar&p=1&fq%5B%5D=state%3AWA&sort=r
ellevance&rows=10&nfpr=0&_setlocale=en_US' \
-H 'Content-Type: application/json' \

```

```
-H 'Key: {{Enter your API KEY}}' \  
-d '{  
  "userId": "string",  
  "populateMetrics": true,  
  "targetingRulesCondition": {  
    "type:News": [  
      "department:HR",  
      "profile:Principal"  
    ],  
    "type:Article": [  
      "department:IT",  
      "profile:Consultant"  
    ]  
  },  
  "targetingRulesConditionAND": {  
    "type:Event": [  
      "department:HR",  
      "profile:Manager"  
    ],  
    "type:Report": [  
      "department:IT",  
      "profile:Coordinator"  
    ]  
  },  
  "targetingRulesConditionOR": {  
    "type:Faq": [  
      "department:HR",  
      "profile:Junior"  
    ],  
    "type:Text": [  
      "department:IT",  
      "profile:Junior"  
    ]  
  }  
}'
```

## Group By

Search on the semantic navigation site by grouping the search into groups.

### Example - Request

```
curl -X 'GET' \  

```

```
'http://localhost:2700/api/sn/Sample/search?q=foobar&p=1&group=type&sort=relevance&
rows=10_setlocale=en_US' \
-H 'Content-Type: application/json'
```

**Example - Request**

```
curl -X 'POST' \
'http://localhost:2700/api/sn/Sample/search' \
-H 'Key: {{Enter your API KEY}}' \
-H 'Content-Type: application/json' \
-d '{
  "query": "foobar",
  "page": 1,
  "group": "type",
  "sort": "relevance",
  "rows": 10,
  "locale": "en_US"
}'
```

**Example - Response**

```
{
  "pagination": [
    {
      "type": "CURRENT",
      "text": "1",
      "href":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&group=type",
      "page": 1
    }
  ],
  "queryContext": {
    "count": 4795,
    "index": "Sample",
    "limit": 10,
    "offset": 0,
    "page": 1,
    "pageCount": 480,
    "pageEnd": 10,
    "pageStart": 1,
    "responseTime": 73,
    "query": {
      "queryString": "foobar",
```

```
    "sort": "relevance",
    "locale": "en_US"
  },
  "defaultFields": {
    "title": "title",
    "date": "publicationDate",
    "description": "texts",
    "text": "text",
    "image": "image",
    "url": "url"
  }
},
"results": { "document": [] },
"groups": [
  {
    "name": "News",
    "count": 485,
    "page": 1,
    "pageCount": 49,
    "pageEnd": 10,
    "pageStart": 1,
    "limit": 10,
    "results": {
      "document": [
        {
          "source": "https://www.example.com/ufs/ma/noticias/premio-nacional-de-foo-
          bar-recebe-inscricoes-ate-2-de-outubro,0df43c64ebee710VgnVCM100000d701210aRCRD",
          "elevate": false,
          "metadata": [
            {
              "href":
                "/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&group=type&fq[]
                =state%3AMA",
              "text": "MA"
            },
            {
              "href":
                "/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&group=type&fq[]
                =site%3ASample Site",
              "text": "Sample Site"
            },
            {
              "href":
                "/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&group=type&fq[]
                =categories%3AInova%C3%A7%C3%A3o",
```

```

        "text": "Inovation"
      },
      {
        "href":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&group=type&fq[]
=type%3ANews",
        "text": "News"
      }
    ],
    "fields": {
      "author": "john",
      "description": "...",
      "title": "...",
      "type": "News",
      "url":
"https://www.example.com/0df43c64ebee710VgnVCM100000d701210aRCRD",
      "state": ["MA"],
      "modificationDate": "2021-09-16T13:28:54.000+00:00",
      "site": "Sample Site",
      "texts": [
        "..."
      ],
      "provider": "Sample Site",
      "_version_": 1765073243578826752,
      "id": "0df43c64ebee710VgnVCM100000d701210aRCRD",
      "categories": ["Inovation"],
      "source_apps": ["WEM"],
      "publicationDate": "2021-09-16T13:28:59.000+00:00"
    }
  },
  {
    "source":
"https://www.example.com/ufs/1e929c110e49c710VgnVCM100000d701210aRCRD",
    "elevate": false,
    "metadata": [
      {
        "href":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&group=type&fq[]
=state%3AMA",
        "text": "MA"
      },
      {
        "href":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&group=type&fq[]
=site%3ASample Site",
        "text": "Sample Site"
      }
    ]
  }
]

```

```

    },
    {
      "href":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&group=type&fq[
=categories%3AInova%C3%A7%C3%A3o",
      "text": "Inovation"
    },
    {
      "href":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&group=type&fq[
=type%3ANews",
      "text": "News"
    }
  ],
  "fields": {
    "author": "john",
    "description": "...",
    "title": "...",
    "type": "News",
    "url":
"https://www.example.com/1e929c110e49c710VgnVCM100000d701210aRCRD",
    "state": ["MA"],
    "modificationDate": "2021-10-18T20:01:04.000+00:00",
    "site": "Sample Site",
    "texts": [
      "..."
    ],
    "provider": "Sample Site",
    "_version_": 1765073243259011072,
    "id": "1e929c110e49c710VgnVCM100000d701210aRCRD",
    "categories": ["Inovation"],
    "source_apps": ["WEM"],
    "publicationDate": "2021-10-18T20:01:11.000+00:00"
  }
}

]
},
"pagination": [
  {
    "type": "CURRENT",
    "text": "1",
    "href":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&fq[]=News",
    "page": 1
  },

```

```

    {
      "type": "PAGE",
      "text": "2",
      "href":
"/api/sn/Sample/search?q=foobar&p=2&_setlocale=en_US&sort=relevance&fq[]=News",
      "page": 2
    },
    {
      "type": "PAGE",
      "text": "3",
      "href":
"/api/sn/Sample/search?q=foobar&p=3&_setlocale=en_US&sort=relevance&fq[]=News",
      "page": 3
    },
    {
      "type": "PAGE",
      "text": "4",
      "href":
"/api/sn/Sample/search?q=foobar&p=4&_setlocale=en_US&sort=relevance&fq[]=News",
      "page": 4
    },
    {
      "type": "NEXT",
      "text": "Next",
      "href":
"/api/sn/Sample/search?q=foobar&p=2&_setlocale=en_US&sort=relevance&fq[]=News",
      "page": 2
    },
    {
      "type": "LAST",
      "text": "Last",
      "href":
"/api/sn/Sample/search?q=foobar&p=49&_setlocale=en_US&sort=relevance&fq[]=News",
      "page": 49
    }
  ]
},
{
  "name": "Article",
  "count": 2343,
  "page": 1,
  "pageCount": 235,
  "pageEnd": 10,
  "pageStart": 1,
  "limit": 10,
  "results": {

```



```

"document": [
  {
    "source":
"https://www.example.com/dc926de4cced1810VgnVCM100000d701210aRCRD",
    "elevate": false,
    "metadata": [
      {
        "href":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&group=type&fq[
=state%3ANA",
        "text": "NA"
      },
      {
        "href":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&group=type&fq[
=site%3ASample Site",
        "text": "Sample Site"
      },
      {
        "href":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&group=type&fq[
=type%3AArticle",
        "text": "Article"
      }
    ],
    "fields": {
      "author": "john",
      "htmls": [
        "...",
      ],
      "description": "...",
      "title": "...",
      "type": "Article",
      "url":
"https://www.example.com/dc926de4cced1810VgnVCM100000d701210aRCRD",
      "state": ["NA"],
      "modificationDate": "2022-07-12T14:00:58.000+00:00",
      "site": "Sample Site",
      "texts": [
        "...",
      ],
      "provider": "Sample Site",
      "_version_": 1765071551980371968,
      "id": "dc926de4cced1810VgnVCM100000d701210aRCRD",
      "categories": ["Inovation"],
      "source_apps": ["WEM"],

```

```

        "publicationDate": "2022-07-12T14:03:16.000+00:00"
      }
    }
  ],
  "pagination": [
    {
      "type": "CURRENT",
      "text": "1",
      "href":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&fq[]=Article",
      "page": 1
    },
    {
      "type": "PAGE",
      "text": "2",
      "href":
"/api/sn/Sample/search?q=foobar&p=2&_setlocale=en_US&sort=relevance&fq[]=Article",
      "page": 2
    },
    {
      "type": "PAGE",
      "text": "3",
      "href":
"/api/sn/Sample/search?q=foobar&p=3&_setlocale=en_US&sort=relevance&fq[]=Article",
      "page": 3
    },
    {
      "type": "PAGE",
      "text": "4",
      "href":
"/api/sn/Sample/search?q=foobar&p=4&_setlocale=en_US&sort=relevance&fq[]=Article",
      "page": 4
    },
    {
      "type": "NEXT",
      "text": "Next",
      "href":
"/api/sn/Sample/search?q=foobar&p=2&_setlocale=en_US&sort=relevance&fq[]=Article",
      "page": 2
    },
    {
      "type": "LAST",
      "text": "Last",
      "href":
"/api/sn/Sample/search?q=foobar&p=235&_setlocale=en_US&sort=relevance&fq[]=Article"
    }
  ]
}

```

```

    "page": 235
  }
]
}

],
"widget": {
  "facet": [
    {
      "facets": [
        {
          "count": 2343,
          "link":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&group=type&fq[]
=type%3AArticle",
          "label": "Article"
        },
        {
          "count": 485,
          "link":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&group=type&fq[]
=type%3ANews",
          "label": "News"
        }
      ],
      "label": { "lang": "en", "text": "Types" },
      "name": "type",
      "description": "Content Type Field",
      "type": "STRING",
      "multiValued": false
    },
    {
      "facets": [
        {
          "count": 4764,
          "link":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&group=type&fq[]
=site%3ASample Site",
          "label": "Sample Site"
        }
      ],
      "label": { "lang": "en", "text": "Sites" },
      "name": "site",
      "description": "Site Name",
      "type": "STRING",

```

```

    "multiValued": false
  },
  {
    "facets": [
      {
        "count": 2603,
        "link":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&group=type&fq[]
=categories%3AInova%C3%A7%C3%A3o",
        "label": "Inovation"
      },
      {
        "count": 1106,
        "link":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&group=type&fq[]
=categories%3AEmpreendedorismo",
        "label": "Empreendedorismo"
      }
    ],
    "label": { "lang": "en", "text": "Categories" },
    "name": "categories",
    "description": "Categories",
    "type": "STRING",
    "multiValued": true
  },
  {
    "facets": [
      {
        "count": 2145,
        "link":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&group=type&fq[]
=state%3ANA",
        "label": "NA"
      },
      {
        "count": 325,
        "link":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&group=type&fq[]
=state%3ASC",
        "label": "SC"
      },
      {
        "count": 297,
        "link":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&group=type&fq[]
=state%3APE",

```

```

        "label": "PE"
      }
    ],
    "label": { "lang": "en", "text": "States" },
    "name": "state",
    "description": "State",
    "type": "STRING",
    "multiValued": true
  }
],
"facetToRemove": null,
"similar": null,
"spellCheck": {
  "correctedText": false,
  "usingCorrectedText": true,
  "original": {
    "text": "foobar",
    "link":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&group=type&nfpr=1"
  },
  "corrected": {
    "text": "",
    "link":
"/api/sn/Sample/search?q=&p=1&_setlocale=en_US&sort=relevance&group=type"
  }
},
"locales": [
  {
    "locale": "en_US",
    "link":
"/api/sn/Sample/search?q=foobar&p=1&_setlocale=en_US&sort=relevance&group=type"
  }
],
"spotlights": []
}
}

```

## Dates

Search on the semantic navigation site between Dates

### IMPORTANT

You will use `fq[]`, `fq.and[]` and `fq.or[]` (query string) or `fq`, `fqAnd`, `fqOr` (request body) to define the dates using the expression with

the following date format: `yyyy-MM-ddT00HH:mm:ssZ`

### Between Dates

```
fq[]=attribute:[InitialDate TO EndDate].
```

#### Example - Request

```
curl -X 'GET' \
'http://localhost:2700/api/sn/Sample/search?q=foobar&_setlocale=en_US&fq[]=modificationDate:[2023-07-23T00:00:00Z+TO+2023-11-30T00:00:00Z]' \
-H 'Content-Type: application/json'
```

### From a date

```
fq[]=attribute:[InitialDate TO *].
```

#### Example - Request

```
curl -X 'GET' \
'http://localhost:2700/api/sn/Sample/search?q=foobar&_setlocale=en_US&fq[]=modificationDate:[2023-07-23T00:00:00Z+TO+*]' \
-H 'Content-Type: application/json'
```

### Until a date

```
fq[]=attribute:[* TO EndDate].
```

#### Example - Request

```
curl -X 'GET' \
'http://localhost:2700/api/sn/Sample/search?q=foobar&_setlocale=en_US&fq[]=modificationDate:[*+TO+2023-11-30T00:00:00Z]' \
```

```
-H 'Content-Type: application/json'
```

### 3.5.2. Search Latest

Returns the last terms searched by the user in the search.

#### API Endpoint

```
POST http://localhost:2700/api/sn/{{siteName}}/search/latest
```

#### Headers

API headers include the mandatory information you send along with the request URL and body. This information helps provide insights into request context and authorization credentials that, in turn, allows access to protected resources.

Key	Value	Description
Key	api-key	API key helps authenticate the application with the server. For generating API key, refer to <a href="#">Generate an API Key</a>
Content-Type	application/json	Content-Type is a representation header that determines the type of data (media/resource) present in the request body
Accept	application/json	Determines the acceptable response type from the server

#### Path Parameters

Attribute	Required / Optional	Description	Example
siteName	Required	Site Name	Sample

### Query String

Attribute	Type	Required / Optional	Description	Default	Example
q	String	Required	Search Query.	-	q=foo
rows	Integer	Optional	Number of rows that query will return.	5	rows=10
_setlocale	Boolean	Required	Locale of Semantic Navigation Site	-	_setlocale=en_US

### Request Parameters

Attribute	Type	Required / Optional	Description	Example
userId	String	Required	User Id	userId=john

### Example - Request

```
curl -X POST \
  'http://localhost:2700/api/sn/Sample/search/latest?rows=5&_setlocale=en_US' \
  -H 'Content-Type: application/json'
  -H 'Key: {{Enter your API KEY}}'
  -d '{
    "userId": "john"
  }'
```



### Example - Response

```
[  
  "foo",  
  "bar"  
]
```

### 3.5.3. Search Locales

List all locales on the semantic navigation site.

#### API Endpoint

```
GET http://localhost:2700/api/sn/{{siteName}}/search/locales
```

#### Path Parameters

Attribute	Required / Optional	Description	Example
siteName	Required	Site Name	Sample

#### Example - Request

```
curl -X 'GET' \  
  'http://localhost:2700/api/sn/Sample/search/locales' \  
  -H 'Content-Type: application/json'
```

#### Example - Response

```
[  
  {  
    "locale": "en_US",  
    "link": "/api/sn/Sample/search?_setlocale=en_US"  
  },  
  {  
    "locale": "pt_BR",  
    "link": "/api/sn/Sample/search?_setlocale=pt_BR"  
  }  
]
```

]

### 3.5.4. Auto Complete

Returns a term array that starts with the query value.

#### API Endpoint

```
GET http://localhost:2700/api/sn/{{siteName}}/ac
```

#### Path Parameters

Attribute	Required / Optional	Description	Example
siteName	Required	Site Name	Sample

#### Query String

Attribute	Type	Required / Optional	Description	Example
q	String	Required	Search Query.	q=foo
rows	Integer	Optional	Number of rows that query will return.	rows=10
_setlocale	Boolean	Required	Locale of Semantic Navigation Site	_setlocale=en_US

#### Example - Request

```
curl -X 'GET' \
  'http://localhost:2700/api/sn/Sample/ac?q=dis&rows=10&_setlocale=en_US' \
  -H 'Content-Type: application/json'
```

**Example - Response**

```
[
  "disc",
  "discovery"
  "disco"
  "disney"
]
```

**3.5.5. Spell Check**

Corrects the text based on the semantic navigation site search database in a given language.

**API Endpoint**

```
GET http://localhost:2700/api/sn/{{siteName}}/{{locale}}/spell-check
```

**Path Parameters**

Attribute	Type	Required / Optional	Description	Example
sitename	String	Required	Site Name.	Sample
locale	String	Required	Locale of Semantic Navigation Site	en_US

**Query String**

Attribute	Type	Required / Optional	Description	Example
q	String	Required	Search Query.	q=foo

Attribute	Type	Required / Optional	Description	Example
rows	Integer	Optional	Number of rows that query will return.	rows=10
_setlocale	Boolean	Required	Locale of Semantic Navigation Site	_setlocale=en_US

### Example - Request

```
curl -X 'GET' \
  'http://localhost:2700/api/sn/Sample/en_US/spell-check?q=fuu' \
  -H 'Content-Type: application/json'
```

### Example - Response

```
{
  "correctedText": true,
  "usingCorrectedText": false,
  "original": {
    "text": "fuu",
    "link": "/api/sn/Sample/en_US/spell-check?q=fuu&nfpr=1"
  },
  "corrected": {
    "text": "foo",
    "link": "/api/sn/Sample/en_US/spell-check?q=foo"
  }
}
```

## 3.6. Cognitive

### 3.6.1. Spell Check

Corrects text based on the given language.

#### API Endpoint

```
GET http://localhost:2700/api/cognitive/spell-checker/{{locale}}
```

#### Headers

API headers include the mandatory information you send along with the request URL and body. This information helps provide insights into request context and authorization credentials that, in turn, allows access to protected resources.

Key	Value	Description
Key	api-key	API key helps authenticate the application with the server. For generating API key, refer to <a href="#">Generate an API Key</a>
Content-Type	application/json	Content-Type is a representation header that determines the type of data (media/resource) present in the request body
Accept	application/json	Determines the acceptable response type from the server

#### Path Parameters

Attribute	Type	Required / Optional	Description	Example
locale	String	Required	Locale of Semantic Navigation Site	en_US

### Query String

Attribute	Type	Required / Optional	Description	Example
text	String	Required	Text to validated	text=fuu ber

### Example - Request

```
curl -X GET \
  "http://localhost:2700/api/cognitive/spell-checker/en_US?text=urange" \
  -H "Accept: application/json" \
  -H "Key: {{Enter your API KEY}}"
```

### Example - Response

```
[
  "range",
  "orange",
  "grange",
  "Grange",
  "Orange",
  "u range"
]
```