

System Integration Final Project Documentation

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API NAME: Language Service - Entity Recognition

Microsoft Azure Document [click](#)

INTRODUCTION:

Entity recognition is an assortment of AI and AI calculations in the cloud for creating astute applications that include composed language. The NER element can recognize and classify substances in unstructured text. For instance: people, places, organizations, and quantities.

Named Entity Recognition:

The effort of recognizing and classifying vital information (entities) in text — sometimes known as entity chunking, extraction, or identification — An entity can be any term or group of words that refers to the same item on a regular basis.

Method: POST

Body Param: should be a JSON:

```
{"inputText":["Microsoft was founded by Bill Gates and Paul Allen on April 4, 1975, to develop and sell BASIC interpreters for the Altair 8800",  
"La sede principal de Microsoft se encuentra en la ciudad de Redmond, a 21 kilómetros de Seattle.",  
"Hi this is Dedeepya",  
"Seattle is a beautiful place to visit",  
"Power people will make places powerful"]}
```

Status Code:

200: String Information Successfully Retrieved

400: Request body is invalid

401: Access denied due to invalid subscription key

Swagger request Body:

The screenshot shows the Swagger UI interface for the Entity Recognition API. The URL is `137.184.115.225:3000/api-docs/#/PII/post_PII`. The endpoint is `POST /entity`. The description is "Calls the Entity Recognition API from Azure". The parameters section shows a required parameter `body` of type `array(string)` with a sub-parameter `(body)`. The value is a JSON object containing an array of text snippets for entity extraction. The content type is set to `application/json`. At the bottom, there are "Execute" and "Clear" buttons.

```
{
  "inputs": [
    "Microsoft was founded by Bill Gates and Paul Allen on April 4, 1975, to develop and sell BASIC interpreters for the Altair 8800",
    "La sede principal de Microsoft se encuentra en la ciudad de Redmond, a 21 kilómetros de Seattle.",
    "Hi this is Dedeepya",
    "Seattle is a beautiful place to visit",
    "Power people will make places powerful"
  ]
}
```

Swagger Response Body:

The screenshot shows the Swagger UI interface for the Entity Recognition API. The URL is `137.184.115.225:3000/api-docs/#/PII/post_PII`. The endpoint is `POST /entity`. The response details section shows a successful 200 status code. The response body is a JSON object containing entities extracted from the input text. The response headers include standard HTTP headers like Content-Type, Content-Length, Date, Server, and X-Powered-By.

```
{
  "id": "0",
  "warnings": [],
  "entities": [
    {
      "text": "Microsoft",
      "category": "Organization",
      "offset": 0,
      "length": 10,
      "confidenceScore": 0.99
    },
    {
      "text": "Bill Gates",
      "category": "Person",
      "offset": 10,
      "length": 10,
      "confidenceScore": 1
    },
    {
      "text": "Paul Allen",
      "category": "Person",
      "offset": 40,
      "length": 10,
      "confidenceScore": 0.99
    }
  ]
}
```

Response headers:
access-control-allow-origin: *
content-type: application/json
content-length: 1464
content-encoding: gzip
date: Mon, 02 May 2022 02:01:09 GMT
strict-transport-security: max-age=31536000
server: Express
x-powered-by: Express

key phrase extraction:

Key phrase extraction is a cloud-based library of machine learning and AI algorithms for constructing intelligent apps that use written language. To rapidly find the essential concepts in a document, use key phrase extraction.

Method: POST

Body Param: should be a JSON:

```
{"KeyphraseText": [  
    "My cat might need to see a veterinarian."  
]
```

Status Code:

200: String Information Successfully Retrieved

400: Request body is invalid

401: Access denied due to invalid subscription key

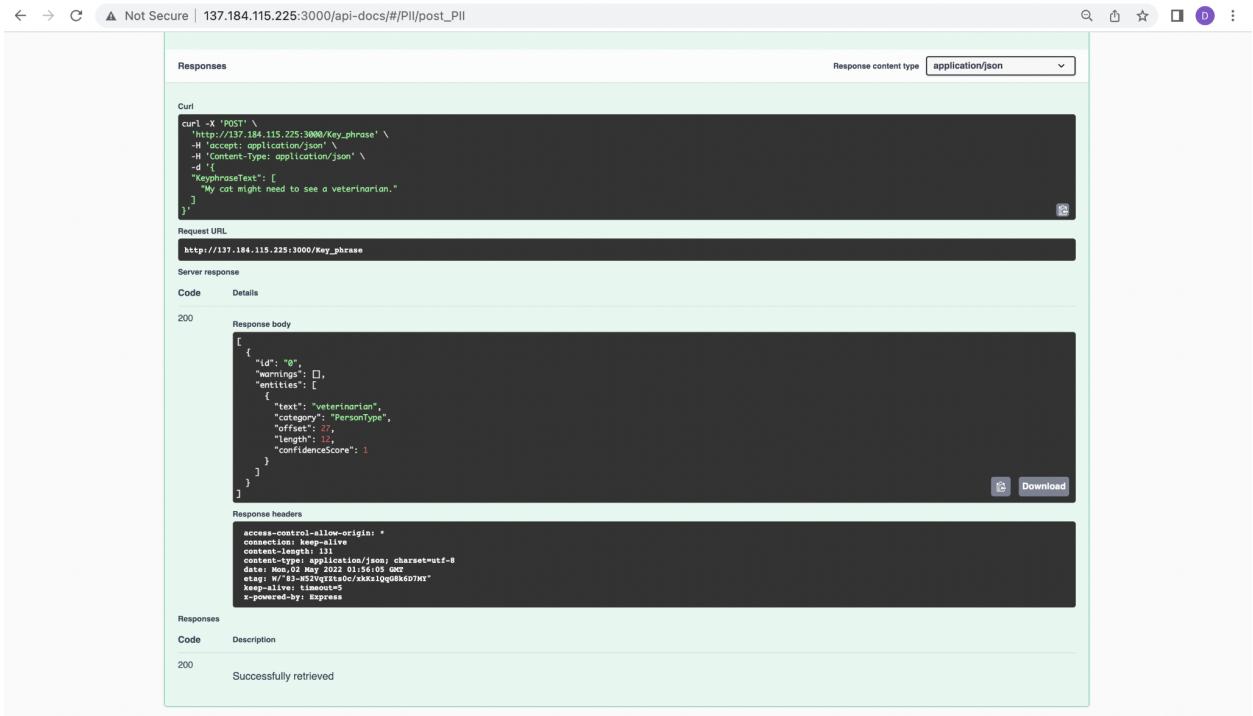
Swagger request body:

The screenshot shows the Swagger UI interface for a POST request to the endpoint `/Key_phrase`. The request body is defined as follows:

```
body * required  
array<string>  
(body)  
Input to send to NER API in Azure.  
Edit Value | Model  
  
{  
    "KeyphraseText": [  
        "My cat might need to see a veterinarian."  
    ]  
}
```

The response status is 200 and the message is "Successfully retrieved".

Swagger response body:



The screenshot shows a Swagger UI interface with the following details:

- Request URL:** `http://137.184.115.225:3000/Key_phrase`
- Server response (Code 200):**
 - Response body:**

```
[{"id": "0", "warnings": [], "entities": [{"text": "veterinarian", "category": "PersonType", "offset": 22, "length": 11, "confidenceScore": 1}]}]
```
 - Response headers:**

```
access-control-allow-origin: *
connection: keep-alive
content-type: application/json; charset=utf-8
date: Mon, 02 May 2022 01:56:05 GMT
etag: 5f9a20c0-1000-0000-0000-5f9a20c01000
keep-alive: timeout=5
x-powered-by: Express
```
- Responses (Code 200):** Successfully retrieved

Personally Identifiable Information (PII) detection:

PII detection is a cloud-based set of computational intelligence technologies for constructing intelligent apps that use written language. The PII detection function is capable of identifying, categorizing, and redacting sensitive information in textual information.

Method: POST

Body Param: should be a JSON:

```
{  
    "PIIText": [" ashok mobile number is 555-555-5555"]  
}
```

Swagger request body:

The screenshot shows a browser window with the URL `137.184.115.225:3000/api-docs/#/PII/post_Pii`. The page title is "PII". The main content area displays a POST method for the endpoint `/PII`. A description states: "Calls the Entity Recognition API from Azure". Below this, there is a "Parameters" section with a table:

Name	Description
body <small>required</small> <code>array(string)</code> <code>(body)</code>	Input to send to NER API in Azure. Edit Value Model <pre>{ "PIIText": ["The employee's phone number is (555) 555-5555."] }</pre>

At the bottom of the form, there is a "Cancel" button, a dropdown for "Parameter content type" set to "application/json", and a large blue "Execute" button.

Swagger response body:

The screenshot shows a browser window displaying a Swagger API documentation page. The URL in the address bar is http://137.184.115.225:3000/api-docs/#/PII/post_PII. The response content type is set to application/json. The response body is a JSON array containing entities and a redactedText field. The response headers include access-control-allow-origin, connection, content-length, content-type, date, etag, pragma, and x-powered-by.

```
curl -X 'POST' \
'http://137.184.115.225:3000/PII' \
-H 'accept: application/json' \
-H 'Content-Type: application/json' \
-d '{
    "PIIText": [
        "The employee's phone number is (555) 555-5555."
    ]
}'
```

Request URL: <http://137.184.115.225:3000/PII>

Server response

Code	Details				
200	<p>Response body</p> <pre>[{"id": "0", "warnings": [], "entities": [{"text": "employee", "category": "PersonType", "offset": 4, "length": 8, "confidenceScore": 0.96}, {"text": "(555) 555-5555", "category": "PhoneNumber", "offset": 31, "length": 14, "confidenceScore": 0.8}, {"redactedText": "The *****'s phone number is *****."}], "response": "access-control-allow-origin: *\nconnection: keep-alive\ncontent-length: 280\ncontent-type: application/json; charset=utf-8\ndate: Mon, 02 May 2022 01:56:14 GMT\netag: \"f7c78e858117xa0g6/e0800dyhIGY\"\npragma: no-cache\nx-powered-by: Express"}]</pre> <p>Responses</p> <table border="1"><thead><tr><th>Code</th><th>Description</th></tr></thead><tbody><tr><td>200</td><td>Successfully retrieved</td></tr></tbody></table>	Code	Description	200	Successfully retrieved
Code	Description				
200	Successfully retrieved				

Tools, Languages and Frameworks Used:

1. Node.js - For implementing the API
2. Digital Ocean - For deploying the project
3. Npm - For dependencies in node js application
4. Swagger - For API documentation and testing
5. Git - For code evaluation

Reference:

Azure documentation:

<https://docs.microsoft.com/en-us/azure/cognitive-services/language-service/personally-identifiable-information/overview>

Source Code:

Github link: <https://github.com/rdedeepya8/FinalProjectSI>

Link to live API: <http://137.184.115.225:3000/api-docs/>