User Manual

Dependency / Package	Version / model
Python	3.9.11
Django	~=4.2.2
Django REST Framework	~=3.14.0
transformers[tf-cpu]	TensorFlow CPU version
Pre-trained model	nlptown/bert-base-multilingual-uncased-sentiment

Project Guideline:

1. Open the project folder “sentiment_analysis” with a suitable IDE such as PyCharm/ VS Code

2. Open a new terminal window

3. Create a virtual environment with the following command:
```
# Windows OS
> py -m venv venv

# Unix/ Mac OS
> python -m venv venv
```

4. Activate the virtual environment using the following command for Windows OS:
```
# Windows OS
> venv/Scripts/activate

# Unix/ Mac OS
> source venv/bin/activate
```

5. Then install the dependencies using the command:
```
pip install -r requirements.txt
```

6. After the successful installation, run the following command to run the server:
```
python manage.py runserver
```

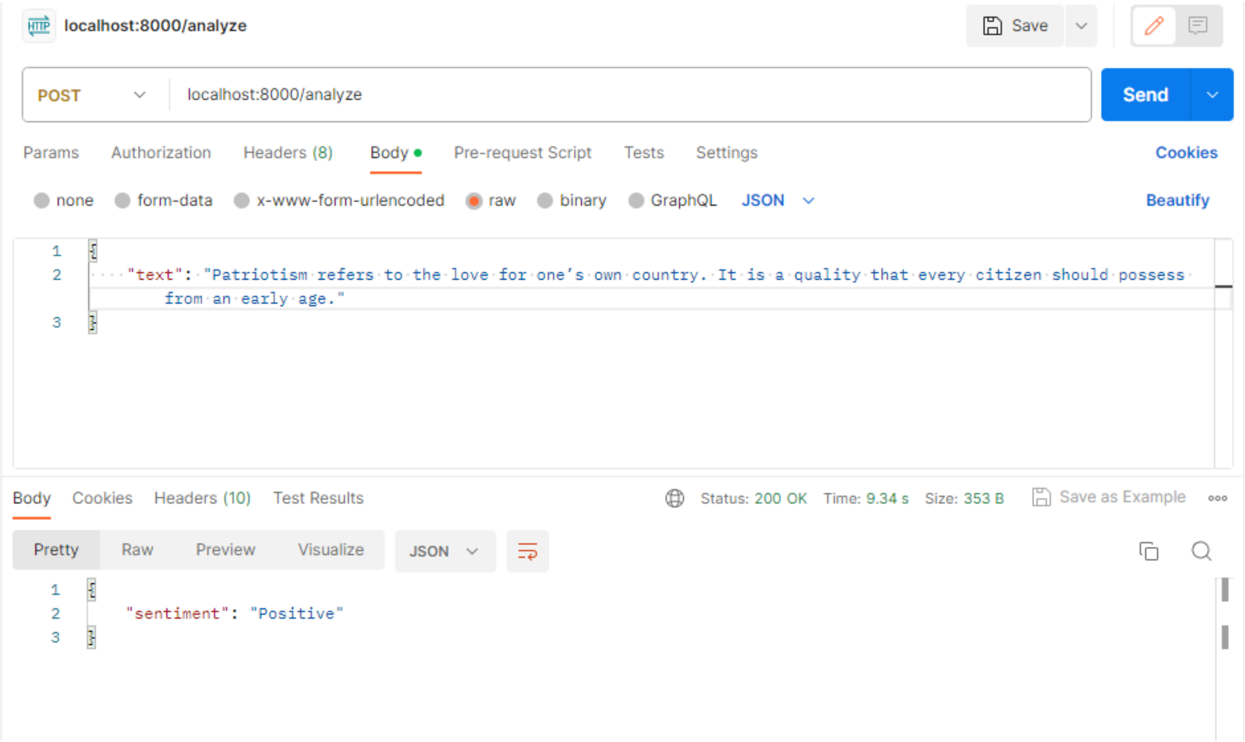
Now the project is running on the localhost server.
You can now hit the url: http://localhost:8000/analyze in a browser to access the browsable API or test it through Postman in the following way:

1. Send a POST request with request body in JSON format s follows:
   ```
   {
      "text": "Your text to be analyzed"
   }
   ```

2. Then wait for a while to get the response. The response will appear in the following format:
   ```
   {
      "sentiment": "Positive / Negative / Neutral"
   }
   ```

Here some examples are given both from Postman and browsable API:

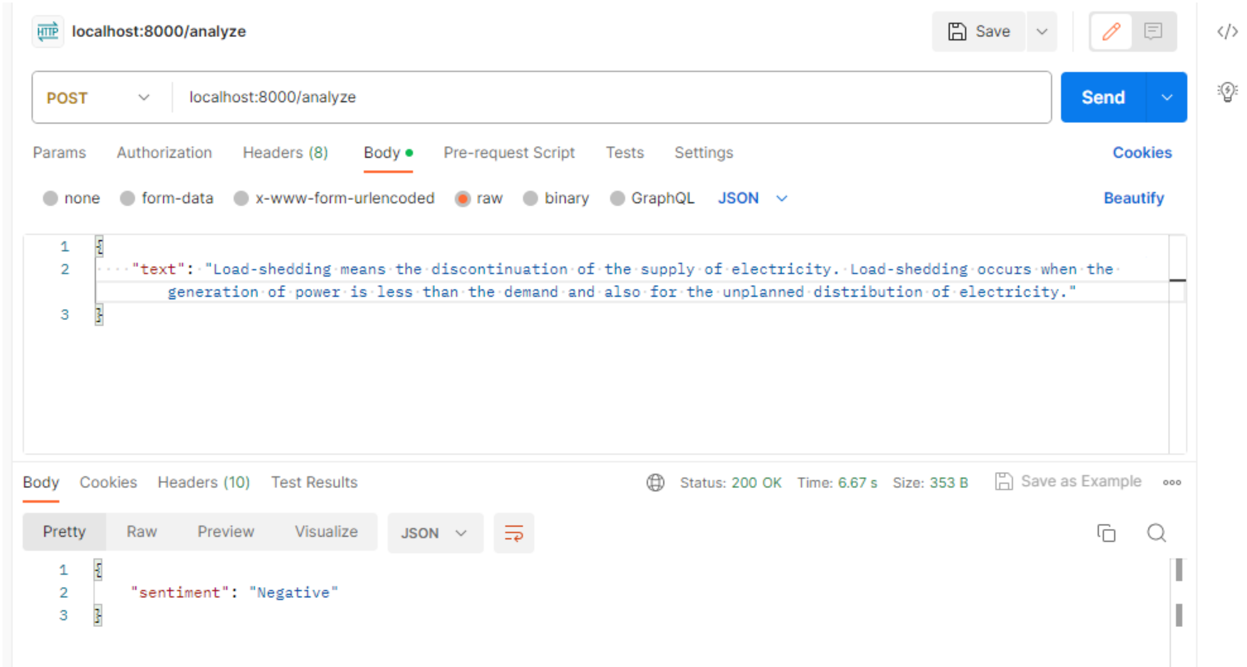
Positive sentiment:



```
{
    "text": "Patriotism refers to the love for one’s own country. It is a quality that every citizen should possess from an early age."
}
```

```
{
    "sentiment": "Positive"
}
```

Negative sentiment:



POST localhost:8000/analyze

Body: raw JSON

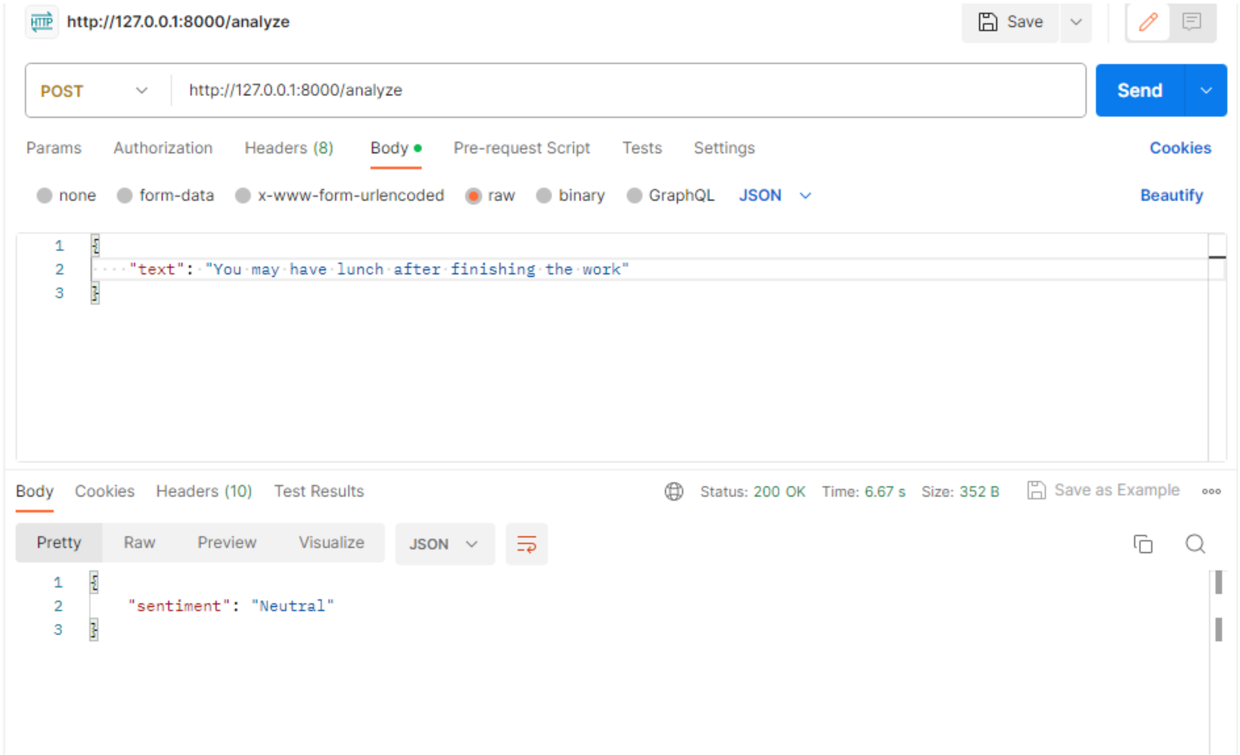
```
{
    "text": "Load-shedding means the discontinuation of the supply of electricity. Load-shedding occurs when the
        generation of power is less than the demand and also for the unplanned distribution of electricity."
}
```

Status: 200 OK Time: 6.67 s Size: 353 B

JSON

```
{
    "sentiment": "Negative"
}
```

Neutral sentiment:



POST http://127.0.0.1:8000/analyze

Body: raw JSON

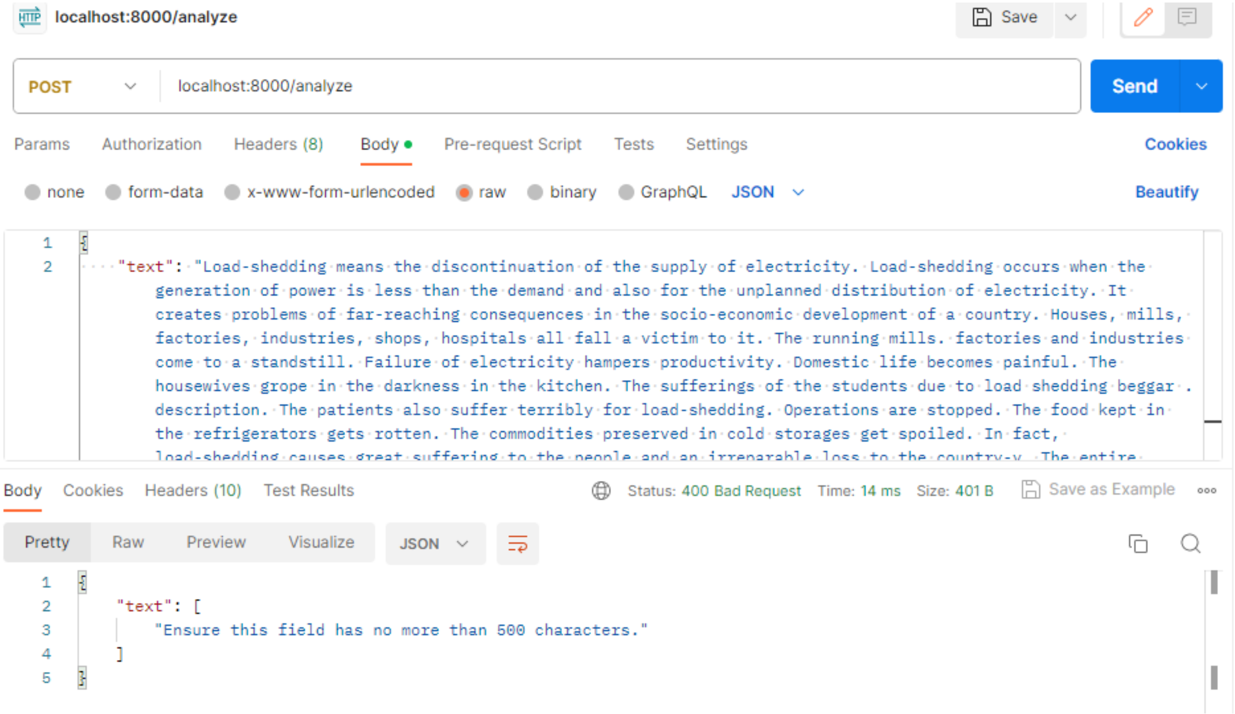
```
{
    "text": "You may have lunch after finishing the work"
}
```

Status: 200 OK Time: 6.67 s Size: 352 B

JSON

```
{
    "sentiment": "Neutral"
}
```

In my project, I have set a maximum limit of 500 characters for the input text. So the system gives an appropriate response if the text is above 500 characters.

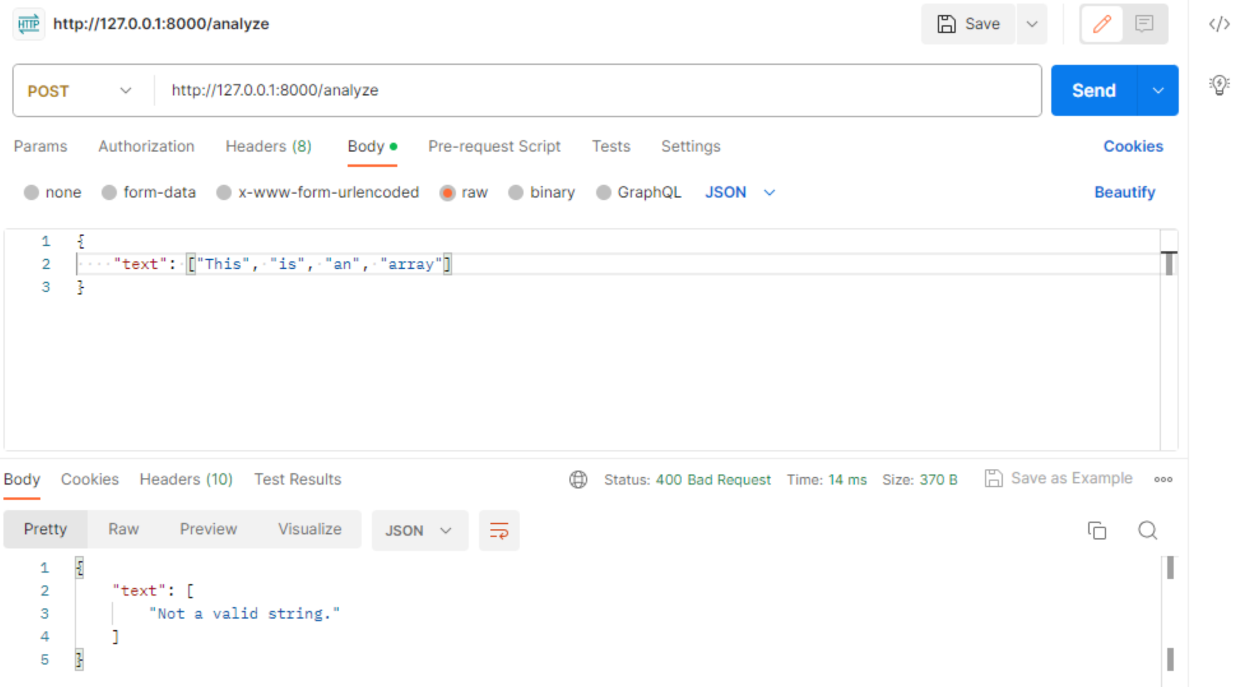


POST localhost:8000/analyze

```
{
    "text": "Load-shedding means the discontinuation of the supply of electricity. Load-shedding occurs when the
        generation of power is less than the demand and also for the unplanned distribution of electricity. It
        creates problems of far-reaching consequences in the socio-economic development of a country. Houses, mills,
        factories, industries, shops, hospitals all fall a victim to it. The running mills. factories and industries
        come to a standstill. Failure of electricity hampers productivity. Domestic life becomes painful. The
        housewives grope in the darkness in the kitchen. The sufferings of the students due to load shedding beggar .
        description. The patients also suffer terribly for load-shedding. Operations are stopped. The food kept in
        the refrigerators gets rotten. The commodities preserved in cold storages get spoiled. In fact,
        load-shedding causes great suffering to the people and an irreparable loss to the country-v. The entire
```

```
{
    "text": [
        "Ensure this field has no more than 500 characters."
    ]
}
```

It also provides a proper response if the input is not a valid text:



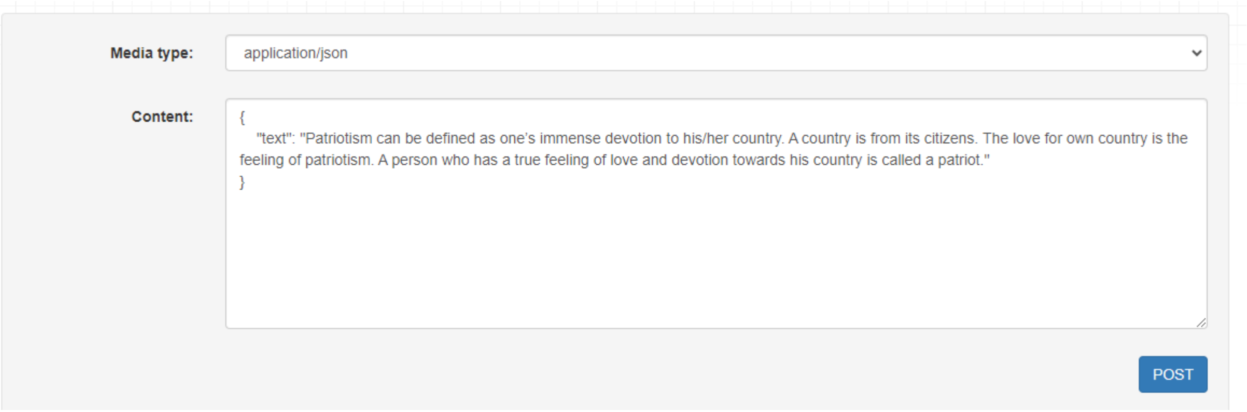
POST http://127.0.0.1:8000/analyze

```
{
    "text": ["This", "is", "an", "array"]
}
```

```
{
    "text": [
        "Not a valid string."
    ]
}
```

Here are some examples using the browsable API in web browser:

Request:

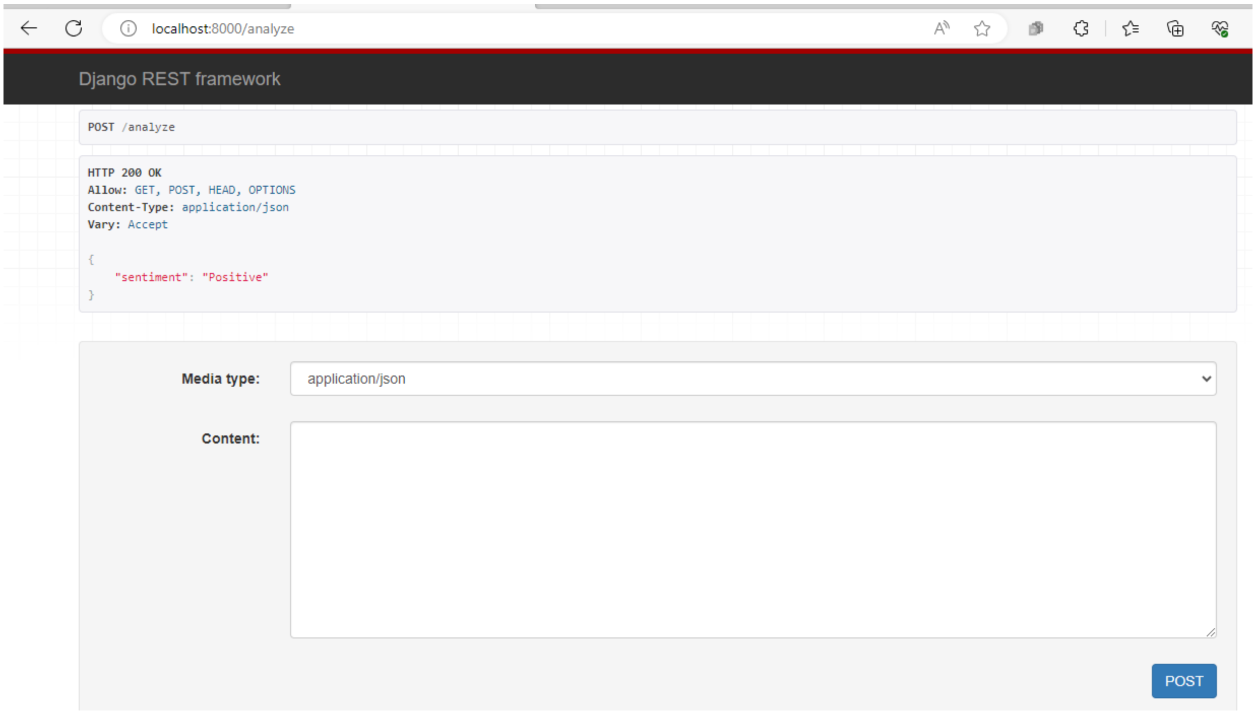


Media type: application/json

Content:

```
{
    "text": "Patriotism can be defined as one's immense devotion to his/her country. A country is from its citizens. The love for own country is the feeling of patriotism. A person who has a true feeling of love and devotion towards his country is called a patriot."
}
```

Response:



localhost:8000/analyze

Django REST framework

```
POST /analyze
```

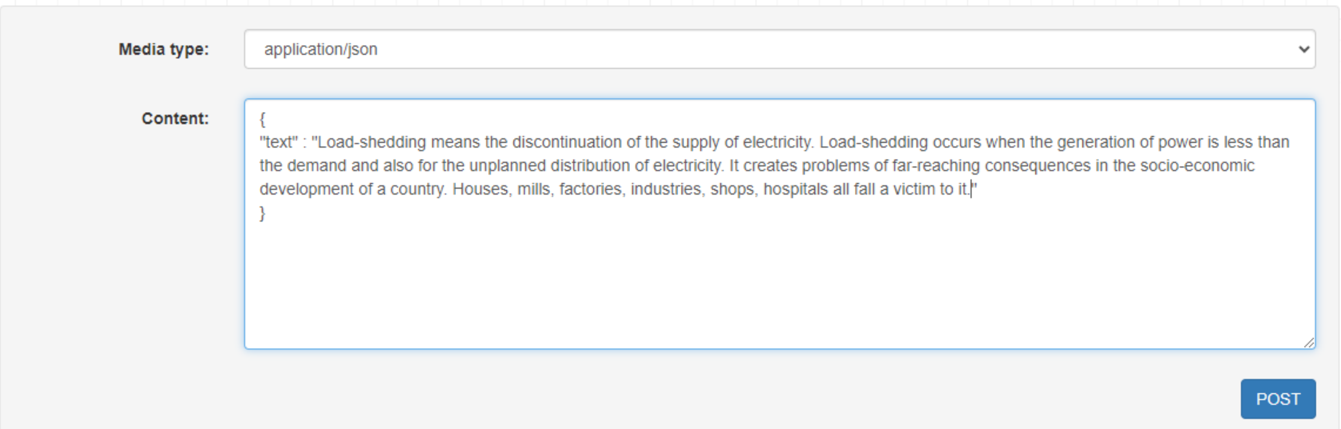
```
HTTP 200 OK
Allow: GET, POST, HEAD, OPTIONS
Content-Type: application/json
Vary: Accept

{
    "sentiment": "Positive"
}
```

Media type: application/json

Content:

Request:

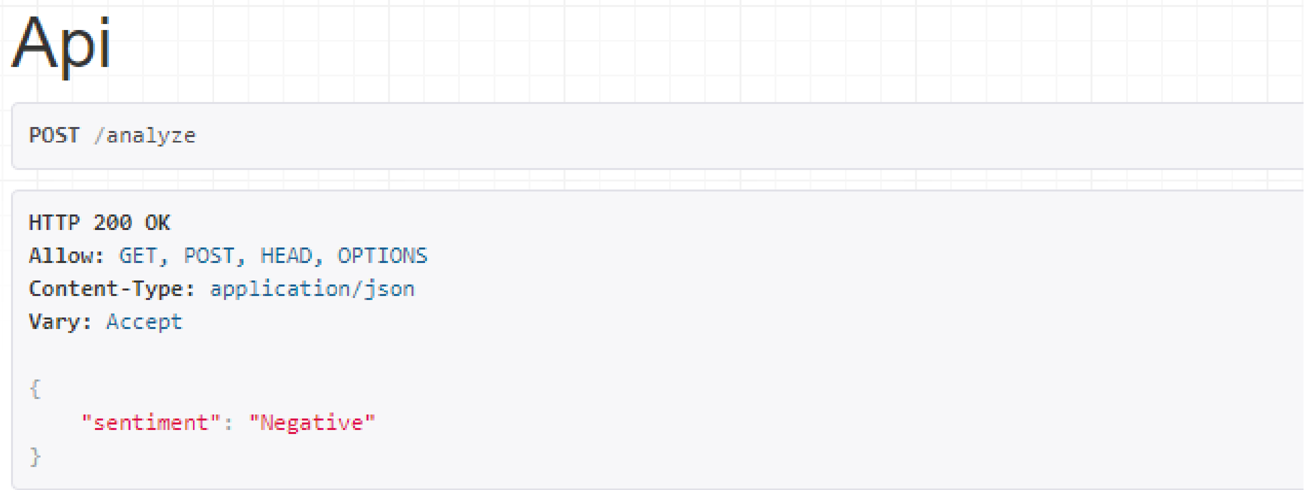


Media type: application/json

Content:

```
{
"text" : "Load-shedding means the discontinuation of the supply of electricity. Load-shedding occurs when the generation of power is less than the demand and also for the unplanned distribution of electricity. It creates problems of far-reaching consequences in the socio-economic development of a country. Houses, mills, factories, industries, shops, hospitals all fall a victim to it."
}
```

Response:



Api

```
POST /analyze
```

```
HTTP 200 OK
Allow: GET, POST, HEAD, OPTIONS
Content-Type: application/json
Vary: Accept

{
    "sentiment": "Negative"
}
```