

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:

The screenshot displays the Postman interface for a POST request to `localhost:8000/analyze`. The request body is a JSON object: `{ "text": "Patriotism refers to the love for one's own country. It is a quality that every citizen should possess from an early age." }`. The response status is `200 OK` with a time of `9.34 s` and size of `353 B`. The response body is a JSON object: `{ "sentiment": "Positive" }`.

```
POST localhost:8000/analyze
```

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

Status: 200 OK Time: 9.34 s Size: 353 B Save as Example

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

Negative sentiment:

The screenshot shows a REST client interface with the following details:

- URL:** `localhost:8000/analyze`
- Method:** `POST`
- Body:** A JSON object with a `text` field containing the sentence: "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."
- Response:** The response is a JSON object: `{"sentiment": "Negative"}`.
- Status:** 200 OK
- Time:** 6.67 s
- Size:** 353 B

Neutral sentiment:

The screenshot shows a REST client interface with the following details:

- URL:** `http://127.0.0.1:8000/analyze`
- Method:** `POST`
- Body:** A JSON object with a `text` field containing the sentence: "You may have lunch after finishing the work"
- Response:** The response is a JSON object: `{"sentiment": "Neutral"}`.
- Status:** 200 OK
- Time:** 6.67 s
- Size:** 352 B

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.

The screenshot shows a REST client interface with the following details:

- URL:** `localhost:8000/analyze`
- Method:** `POST`
- Body:** A long text string starting with `"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. The entire`
- Status:** `400 Bad Request`
- Response Body:**

```
1 {
2   "text": [
3     "Ensure this field has no more than 500 characters."
4   ]
5 }
```

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

The screenshot shows a REST client interface with the following details:

- URL:** `http://127.0.0.1:8000/analyze`
- Method:** `POST`
- Body:** A JSON object `{ "text": ["This", "is", "an", "array"] }`
- Status:** `400 Bad Request`
- Response Body:**

```
1 {
2   "text": [
3     "Not a valid string."
4   ]
5 }
```

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."  
}
```

POST

Response:

← ↻ ⓘ localhost:8000/analyze

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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:

POST

Request:

Media type:	<input type="text" value="application/json"/>
Content:	<pre>{ "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." }</pre>
<input type="button" value="POST"/>	

Response:

Api

POST /analyze

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

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