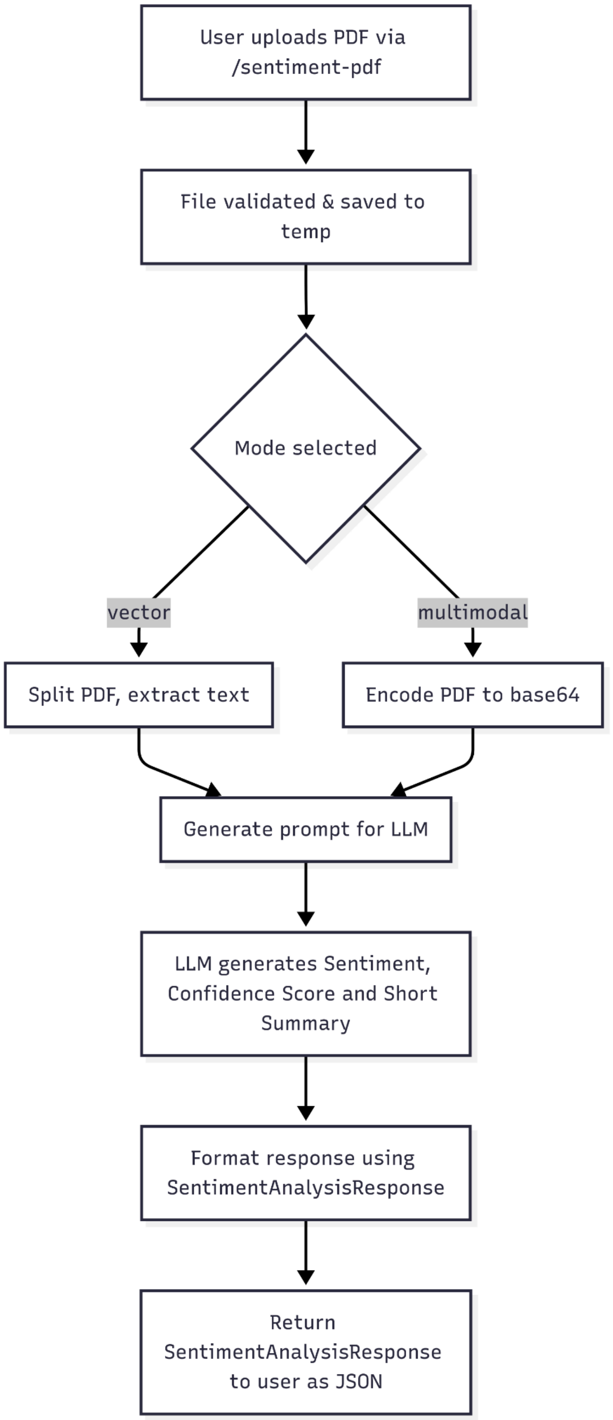
PDF Sentiment Analysis API

Flow Diagram


User uploads PDF via /sentiment-pdf
File validated & saved to temp
Mode selected
vector
multimodal
Split PDF, extract text
Encode PDF to base64
Generate prompt for LLM
LLM generates Sentiment, Confidence Score and Short Summary
Format response using SentimentAnalysisResponse
Return SentimentAnalysisResponse to user as JSON

Base URL

http://localhost:8000

Endpoints

Health Check

GET /

Returns the health status of the API service.
Parameters: None

Example Request:

```
curl -X GET http://localhost:8000/
```

Example Response:

```
{
  "status": "healthy"
}
```

Status Codes:

- 200 OK - Service is healthy

PDF Sentiment Analysis

POST /sentiment-pdf

Performs multimodal or vector-based sentiment analysis on a provided PDF file.

Content-Type: multipart/form-data

Parameters:

Parameter	Type	Required	Default	Description
file	File	Yes	-	PDF file to analyze (multipart/form-data)
mode	String	No	"multimodal"	Analysis mode: "vector" or "multimodal"

Mode Differences:

- **Vector Mode**: Uses text-based vector embeddings for sentiment analysis
- **Multimodal Mode**: Uses vision capabilities to analyze PDF content including images and visual elements

Example Request (Multimodal Mode):

```
curl -X POST http://localhost:8000/sentiment-pdf \
  -F "file=@/path/to/document.pdf" \
  -F "mode=multimodal"
```

Example Response (Multimodal Mode):

```
{
  "message": "PDF sentiment analyzed successfully",
  "mode": "multimodal",
  "filename": "document.pdf",
  "result": {
    "sentiment": "positive",
    "score": 0.85,
    "summary": "The document expresses predominantly positive sentiment with optimistic language and constructive recommendations throughout the content."
  }
}
```

Example Request (Vector Mode):

```
curl -X POST http://localhost:8000/sentiment-pdf \
  -F "file=@/path/to/document.pdf" \
  -F "mode=vector"
```

Example Response (Vector Mode):

```
{
  "message": "PDF sentiment analyzed successfully",
  "mode": "vector",
  "filename": "document.pdf",
  "result": {
    "sentiment": "neutral",
    "score": 0.72,
    "summary": "The document maintains a neutral tone with balanced presentation of facts and minimal emotional language."
  }
}
```

Status Codes:

- 200 OK - Analysis completed successfully
- 400 Bad Request - Invalid mode or unsupported file type
- 422 Unprocessable Entity - Missing required parameters
- 500 Internal Server Error - Server-side processing errors

Error Responses

Invalid Analysis Mode

Example Request:

```
curl -X POST http://localhost:8000/sentiment-pdf \
  -F "file=@/path/to/document.pdf" \
  -F "mode=invalid_mode"
```

Response:

```
{
  "detail": [
    {
      "type": "string_pattern_mismatch",
      "loc": [
        "body",
        "mode"
      ],
      "msg": "String should match pattern '^(vector|multimodal)$'",
      "input": "invalid",
      "ctx": {
        "pattern": "^(vector|multimodal)$"
      }
    }
  ]
}
```

Status Code: 400 Bad Request

Missing File Parameter

Example Request:

```
curl -X POST http://localhost:8000/sentiment-pdf \
  -F "mode=vector"
```

Response:

```
{
  "detail": [
    {
      "type": "missing",
      "loc": ["body", "file"],
      "msg": "Field required",
      "input": null
    }
  ]
}
```

Status Code: 422 Unprocessable Entity

Invalid File Type

Example Request:

```
curl -X POST http://localhost:8000/sentiment-pdf \
  -F "file=@/tmp/test.txt" \
  -F "mode=vector"
```

Response:

```
{
  "detail": "Only PDF files are supported."
}
```

Status Code: 400 Bad Request

Analysis Failed

Response:

```
{
  "detail": "Analysis failed: [specific error message]"
}
```

Status Code: 500 Internal Server Error

Response Schema

Successful Sentiment Analysis Response

```
{
  "message": "string", // Success message
  "mode": "vector|multimodal", // Analysis mode used
  "filename": "string", // Name of analyzed file
  "result": {
    "sentiment": "string", // One of 'positive', 'negative', or 'neutral'
    "score": "number", // Confidence score between 0 and 1
    "summary": "string" // Brief explanation of the sentiment determination
  }
}
```

Health Response

```
{
  "status": "string" // Status message
}
```

Error Response

```
{
  "detail": "string" // Error message
}
```

Validation Error Response

```
{
  "detail": [
    {
      "type": "string", // Error type
      "loc": ["array"], // Location of the error
      "msg": "string", // Error message
      "input": "any", // Input that caused the error
      "ctx": {
        "pattern": "string" // Contextual information like regex pattern
      }
    }
  ]
}
```