

# **Software Requirements Specification (SRS)**

Project Title: English to Hindi Language Translator Web Application

Technology Stack: Python, Flask, NLP Model (helsinki-nlp/opus-mt-en-hi), Deployment on Render

## **1. Introduction**

Purpose: Develop a web-based translator that converts English text to Hindi using NLP.

Scope: Accept input, process translation, display Hindi output via web interface.

## **2. Overall Description**

Standalone Flask web application using Hugging Face Transformers.

Frontend: HTML/CSS

Backend: Flask

Model: helsinki-nlp/opus-mt-en-hi

Deployment: Render

## **3. Functional Requirements**

- Accept English text input.

- Validate empty input.

- Load NLP model.

- Translate text to Hindi.

- Display translated output.

- Handle errors gracefully.

#### 4. Non-Functional Requirements

Performance: Response time under 5 seconds.

Usability: Simple and responsive UI.

Reliability: Proper exception handling.

Security: No storage of user data.

#### 5. System Architecture

User -> Browser -> Flask Server -> NLP Model -> Output

#### 6. Deployment Requirements

Files Required:

- app.py
- requirements.txt
- Procfile
- runtime.txt
- templates/index.html

Start Command:

```
gunicorn app:app
```

#### 7. Future Enhancements

- Add Hindi to English translation

- Add speech-to-text

- Add multi-language support