

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