Handwritten Text Recognition System

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Outline

Abstract

- The aim of the project is to develop HTR software for Hindi Text recognition. HTR is an Text recognition and translation of images of typewritten or handwritten (usually captured by a scanner) into machine-editable text.In this project, the focus is on recognition of Hindi Text in a given scanned text document with the help of Neural Networks And Convert It into normal editable text.

Introduction

- Handwriting recognition (HWR), also known as handwritten text recognition (HTR), is the ability of a computer to receive and interpret handwritten input from sources such as paper documents, images.
- The process of HTR involves several steps including preprocessing , segmentation, feature extraction, and classification.

Problem Definition

- Develope a system which can read and analyze handwritten text and convert it into normal editable text. handwriting recognition involves the automatic conversation of text in an image into text that are usable within computer and text-processing applications.

Software interface

Frontend :

- HTML
- CSS
- JavaScript

Backend :

- Python
- Flask

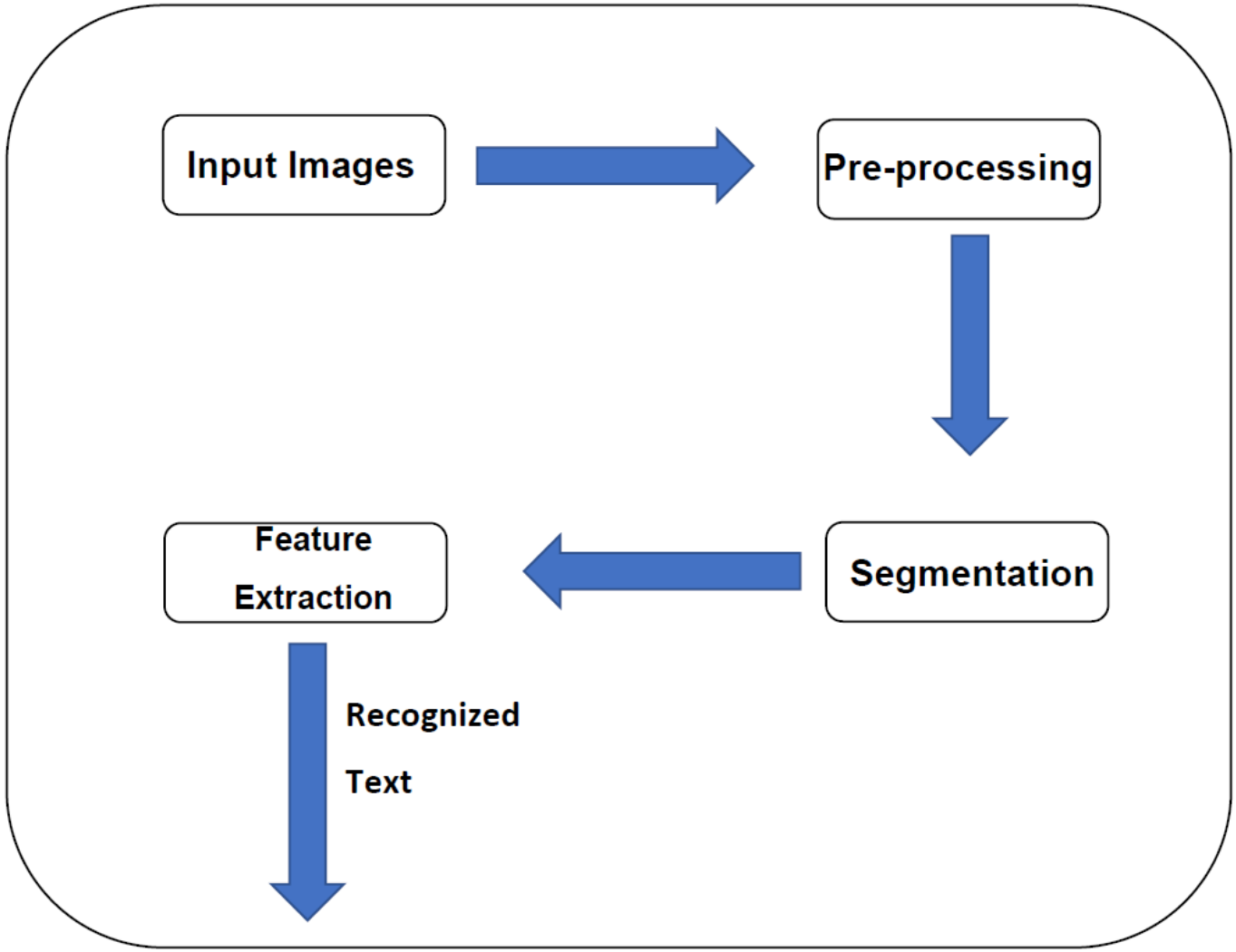
Tools :

- Jupyter Notebook (IDE)
- TensorFlow

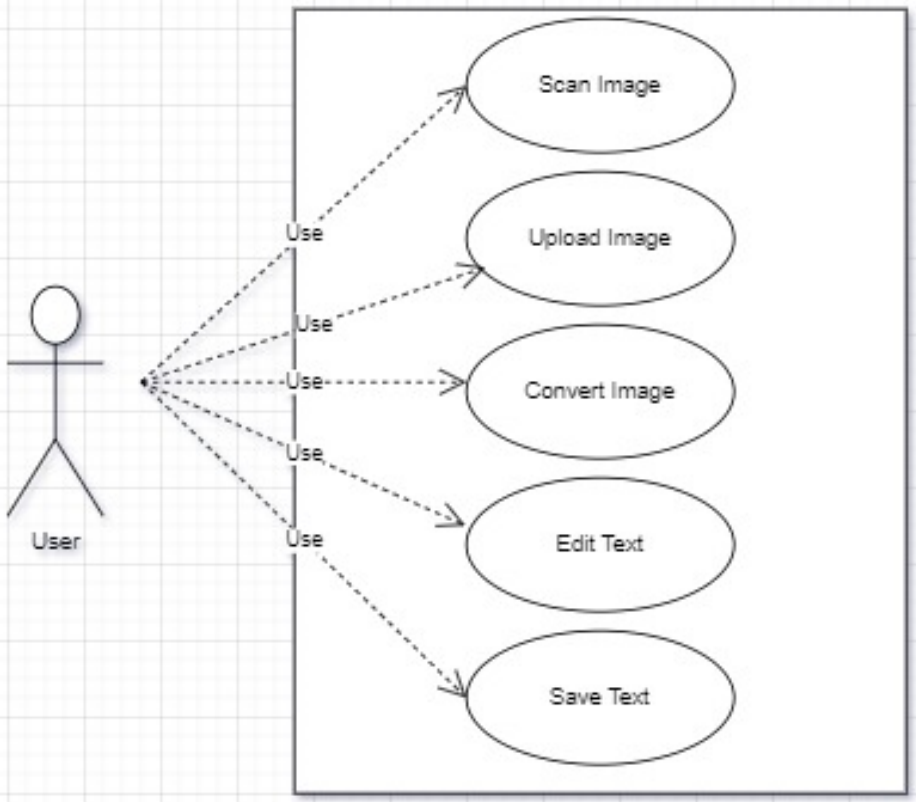
Literature Survey

- A Literature Survey on Handwritten Text Recognition Authors: Ayush Purohit Shardul Singh Chauhan Abstract and Figures Handwriting recognition has gained a lot of attentionin the field of pattern recognition and machine learning due to its application in various fields.

System Architecture

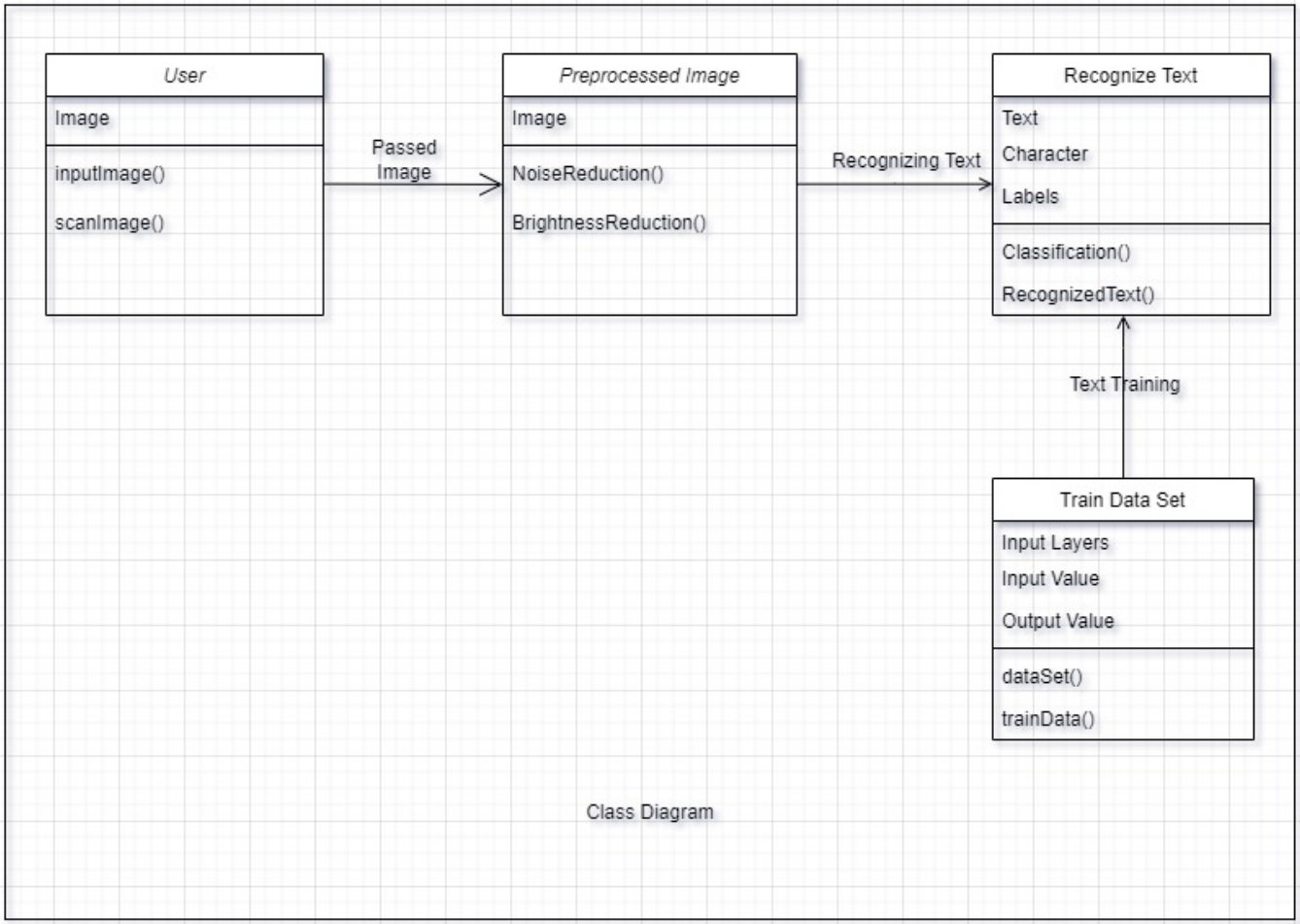


Use case Diagram



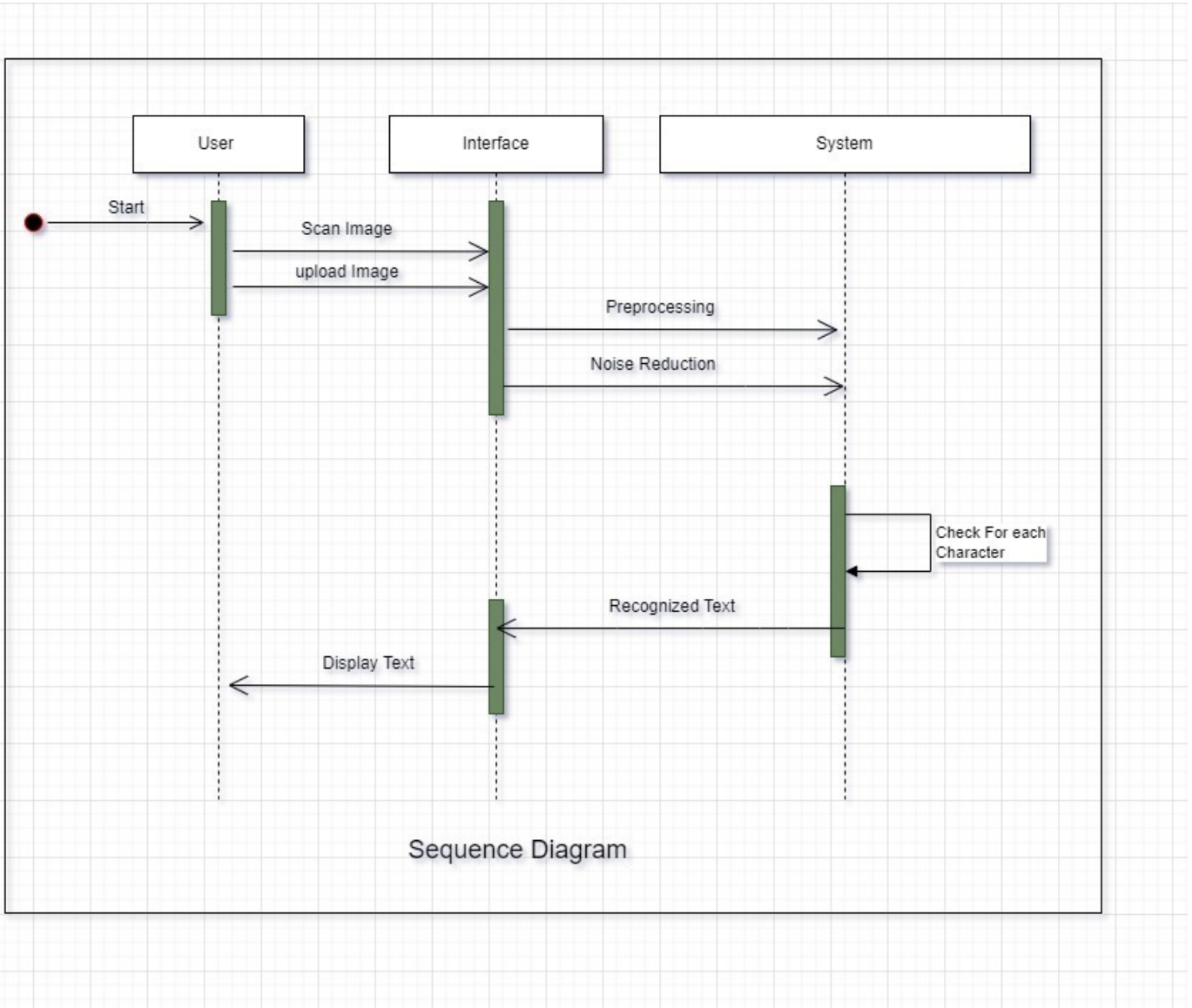
Use Case Diagram

Class Diagram

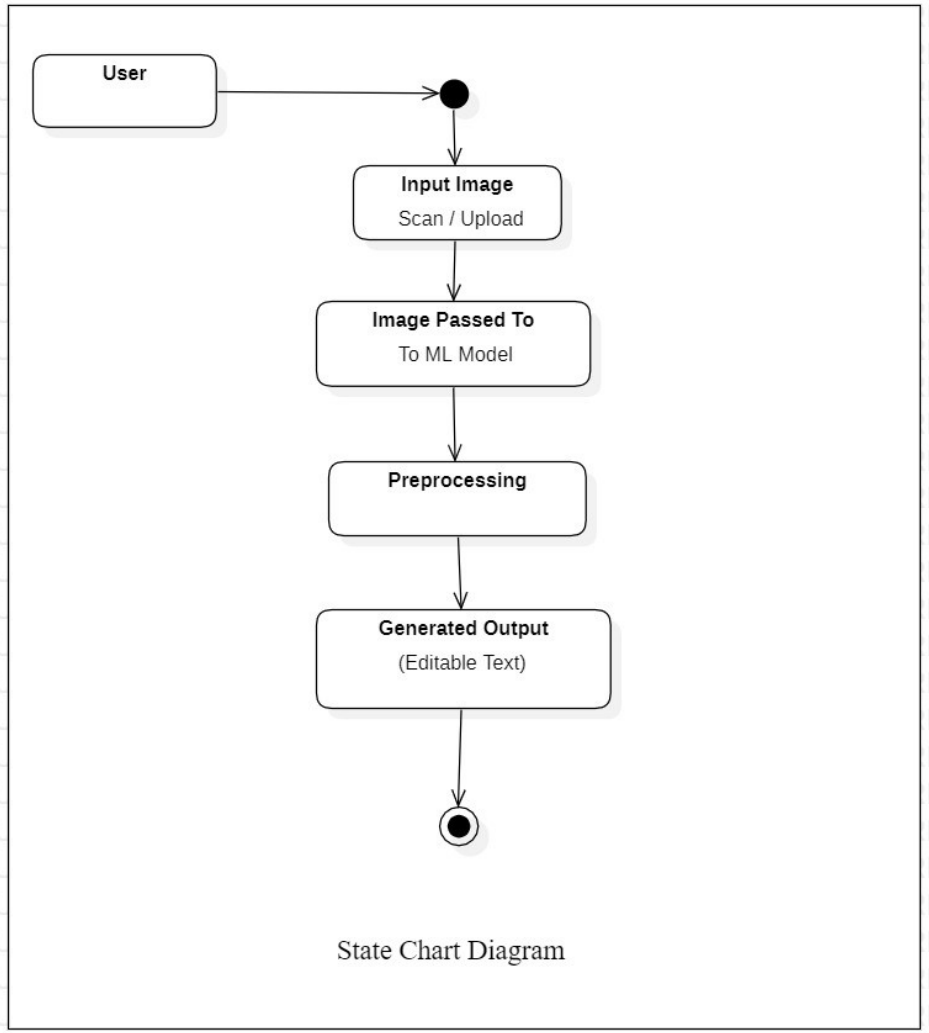


Class Diagram

Sequence Diagram

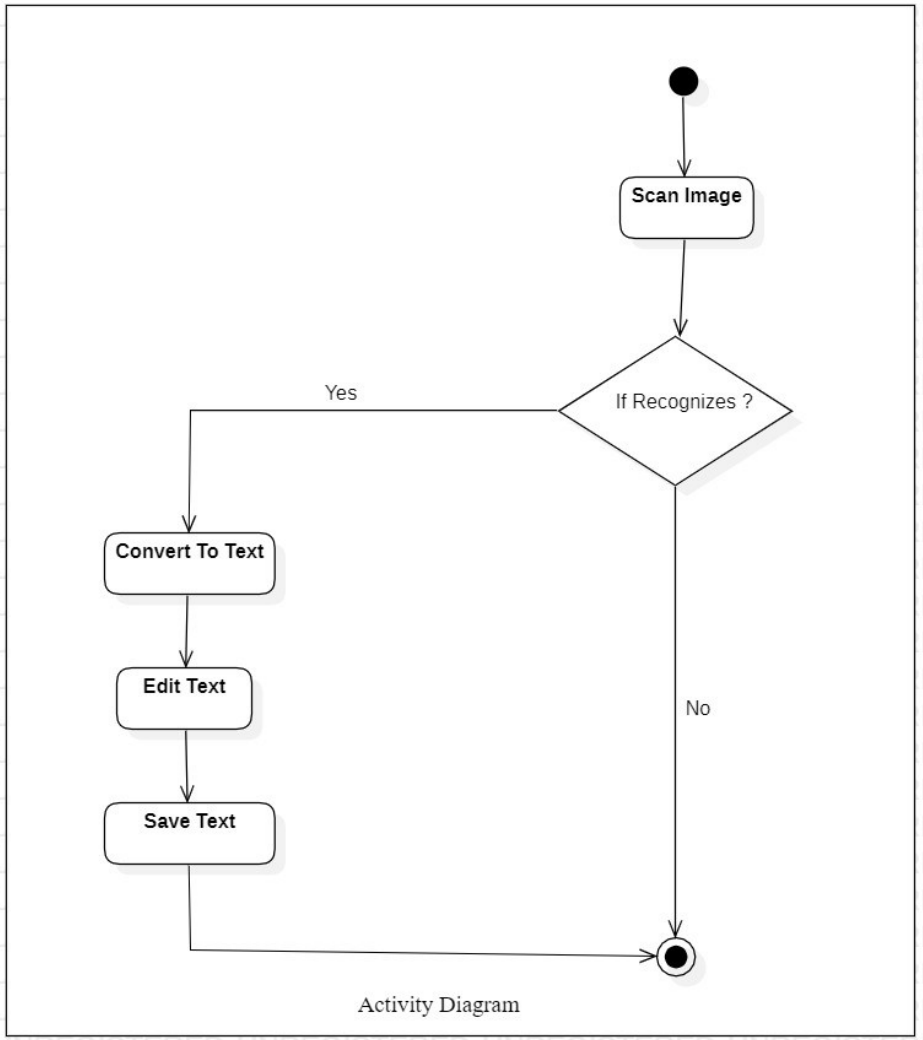


State Chart



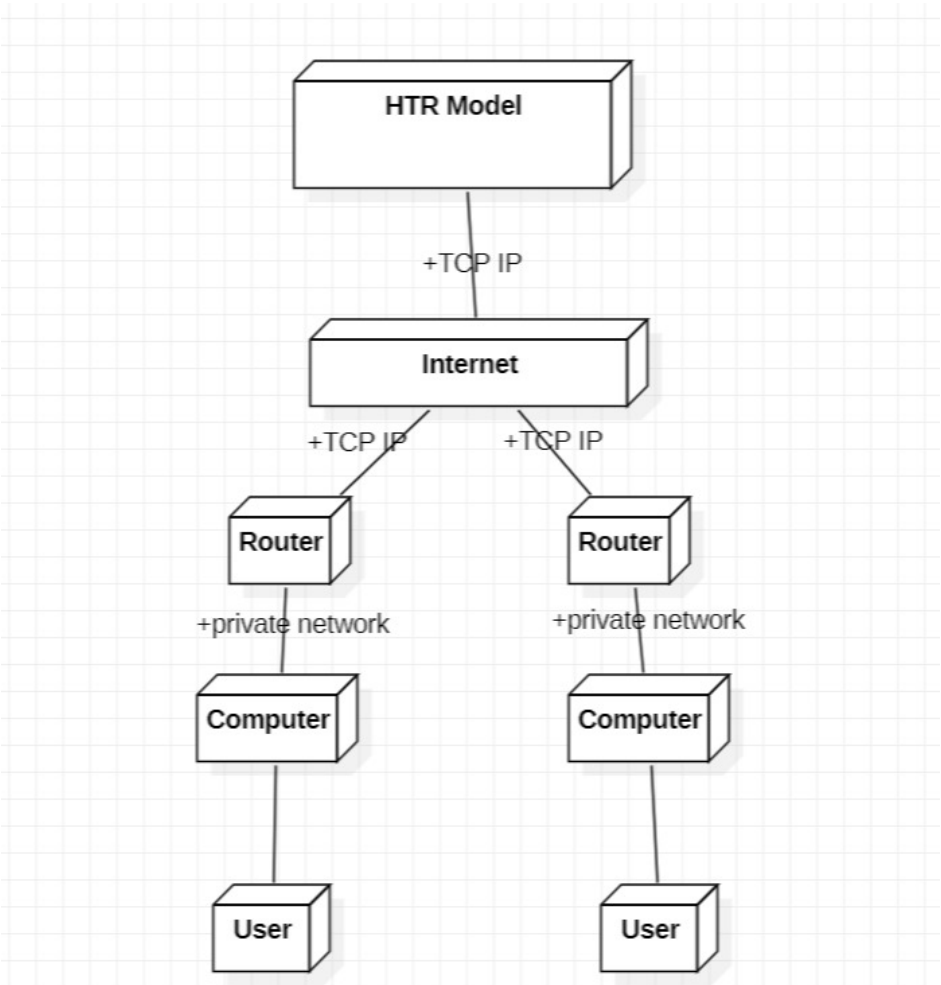
State Chart Diagram

Activity Diagram



Activity Diagram

Deployment



Deployment Diagram

Algorithm:

- **Algorithm : The SVM classifier**
  The SVM classifier algorithm is the most accurate in terms of accuracy so that the this is used

Steps:

- **Steps :**
  - Input Image
  - Pre-Processing
  - Segmentation
  - feature extraction
  - classification
  - Output

References

- Gunjan Singh,Sushma Lehri, " Recognition of Handwritten Hindi Characters using Back propagation Neural Network",International Journal of Computer Science and Information Technologies ISSN 0975-9646, Vol. 3 (4) , 2012,4892-4895. Access
- Kauleshwar Prasad, Devvrat C. Nigam, Ashmika Lakhotiya and Dheeren Umre "Character Recognition Using Neural Network Toolbox", International Journal of u- and e-Service, Science and Technology Vol. 6, No. 1, February, 2013

Thank You...