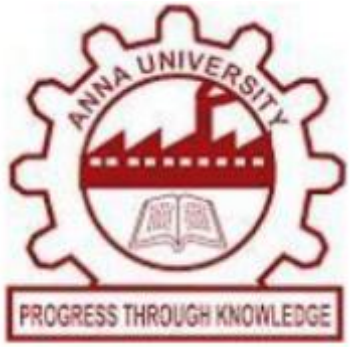
MADRAS INSTITUTE OF TECHNOLOGY
ANNA UNIVERSITY CHENNAI
CHENNAI - 600 044



DEPARTMENT OF INFORMATION TECHNOLOGY

IT5613 - SOCIALLY RELEVANT PROJECT LABORATORY

Semester: 6
Batch : 2
Team No: 5
Title: BraillePulse

S.NO	NAME	ROLL NUMBER	SIGNATURE
1	Abinaya S	2021506002	
2	Dharshan S	2021506018	
3	Hemnath N M	2021506026	
4	Arun N	2021506013	

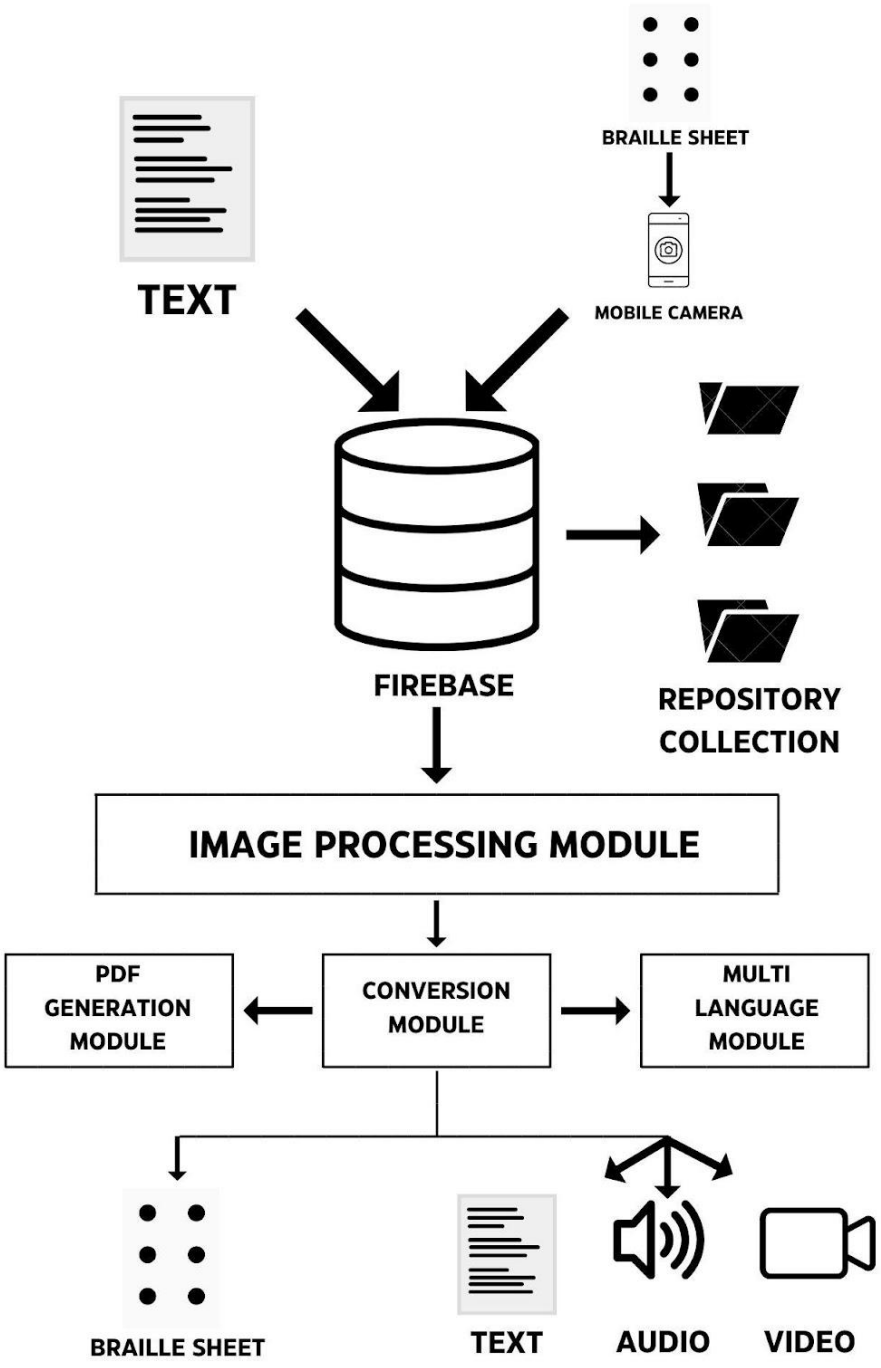
SOCIALLY RELEVANT PROJECT

BRAILLEPULSE- DESIGN MODELS

Aim:

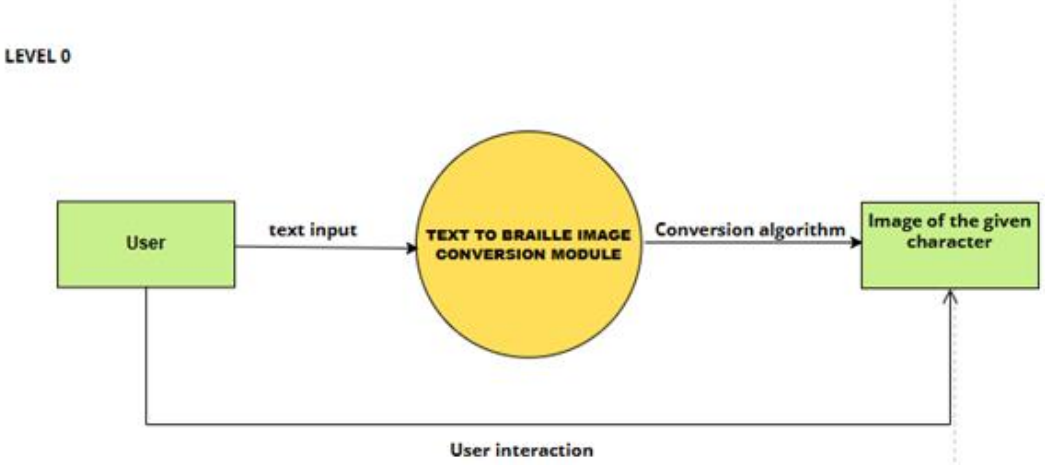
To create design models for BraillePulse mobile application.

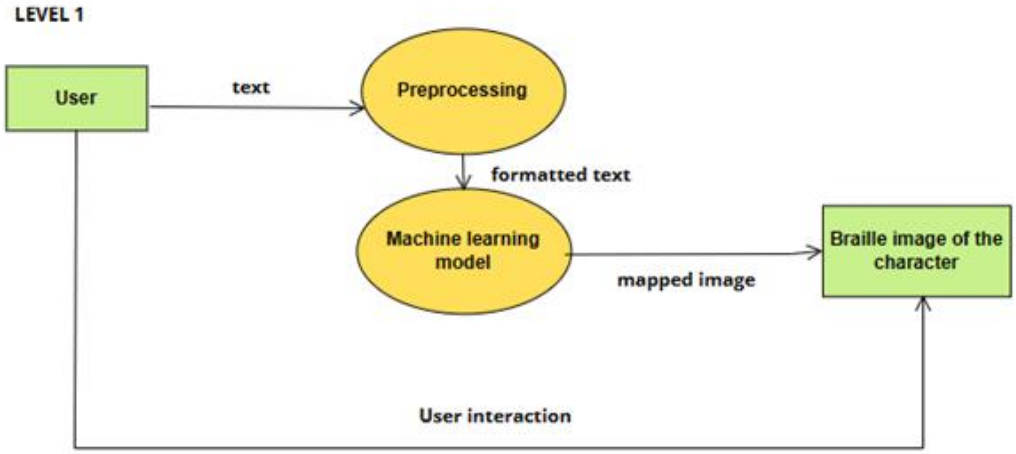
ARCHITECTURE DIAGRAM

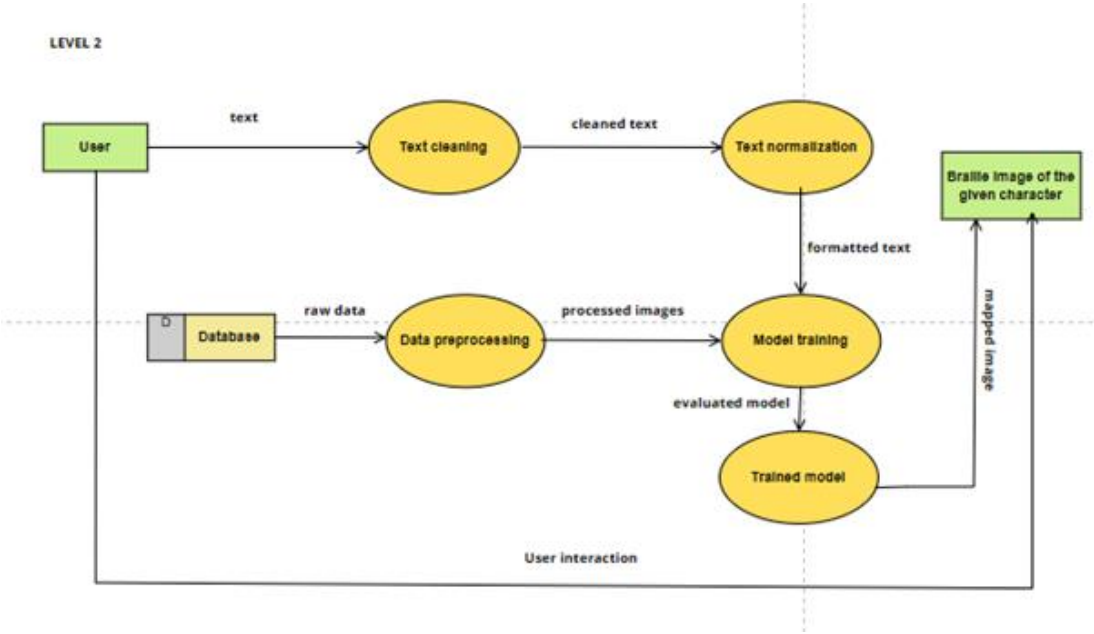


DATA FLOW DIAGRAM

MODULE 1: TEXT TO BRAILLE

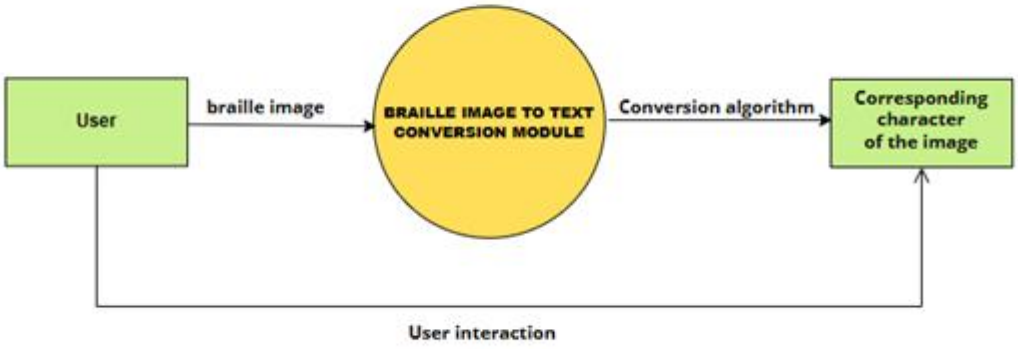




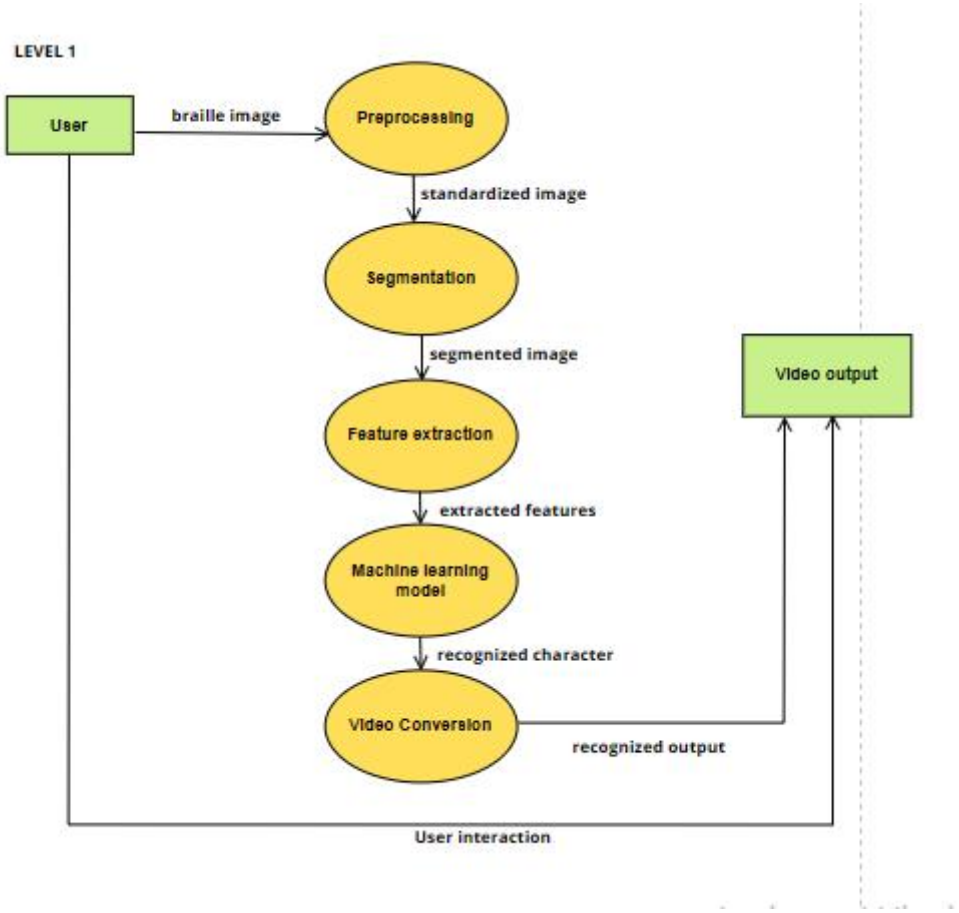


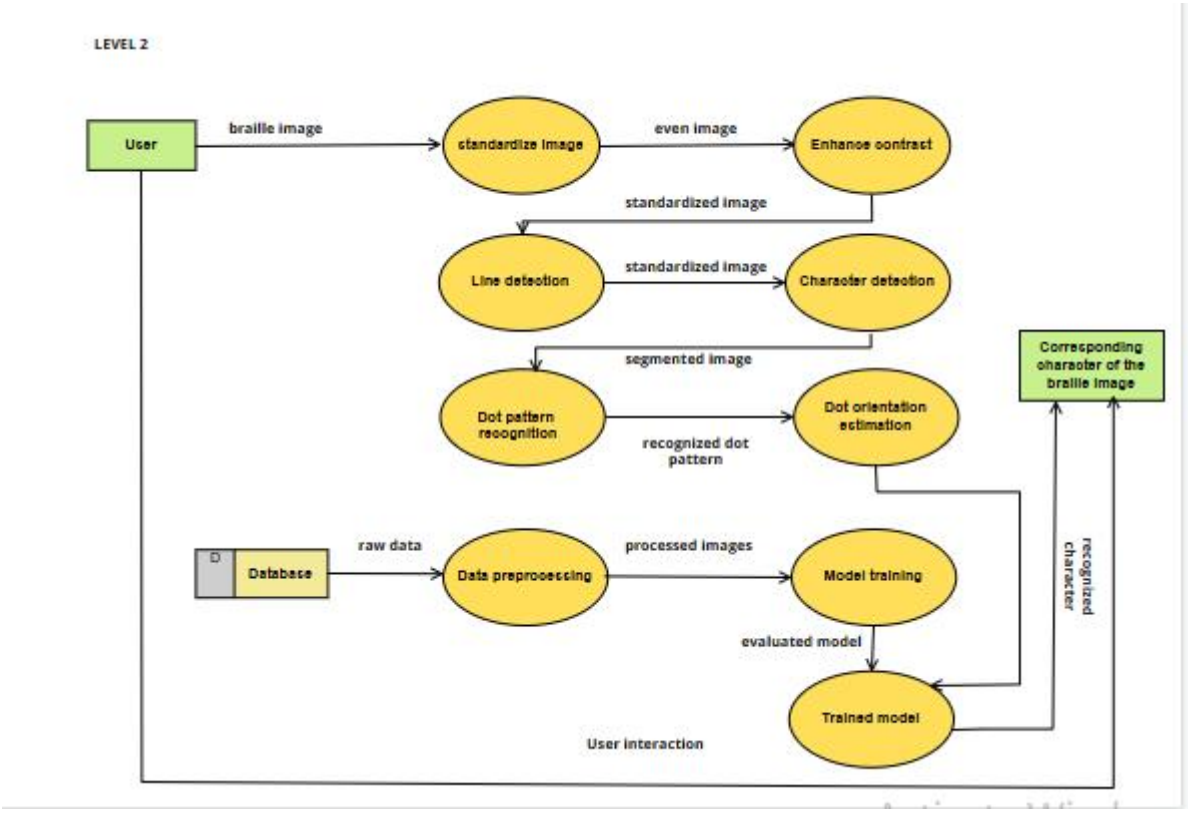
MODULE 2: BRAILLE IMAGE TO TEXT

LEVEL 0

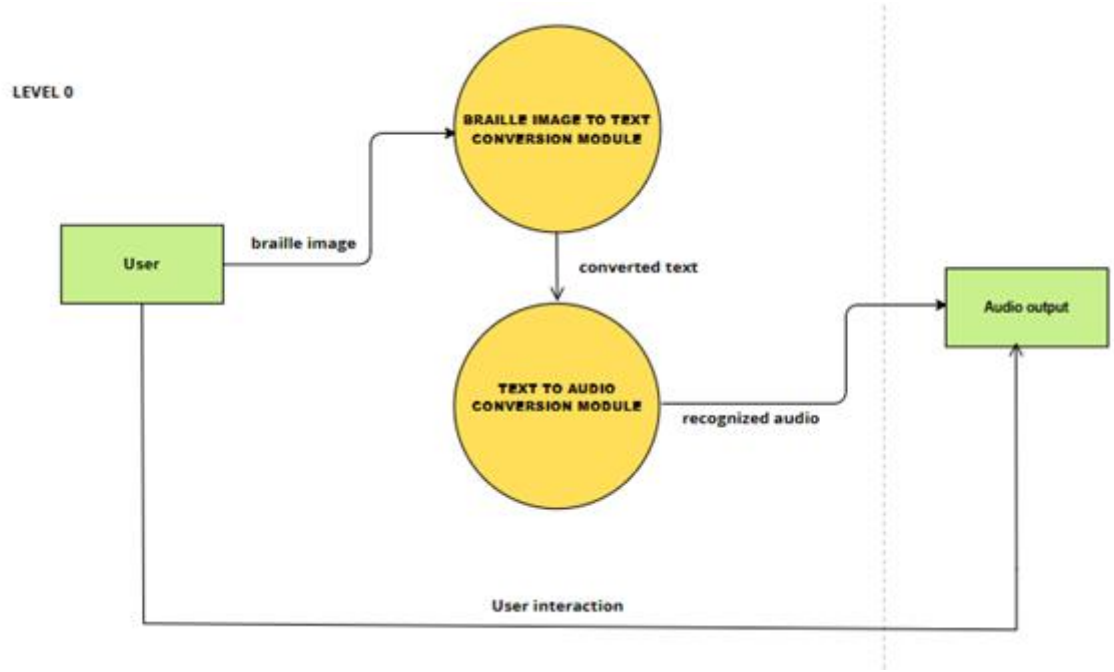


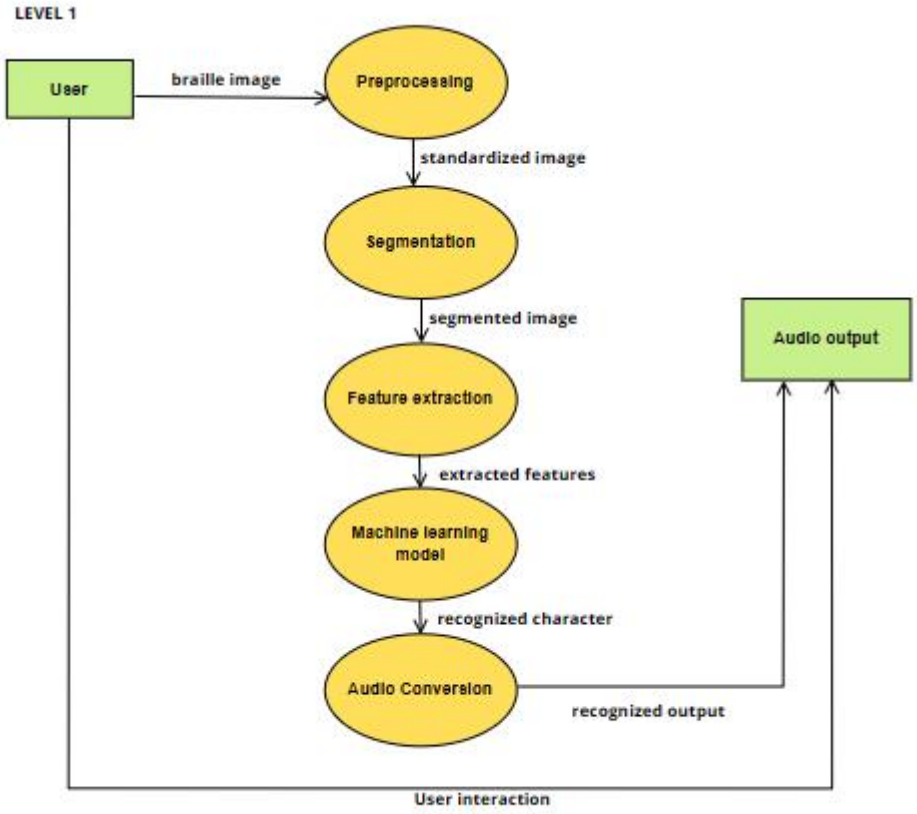
LEVEL 1

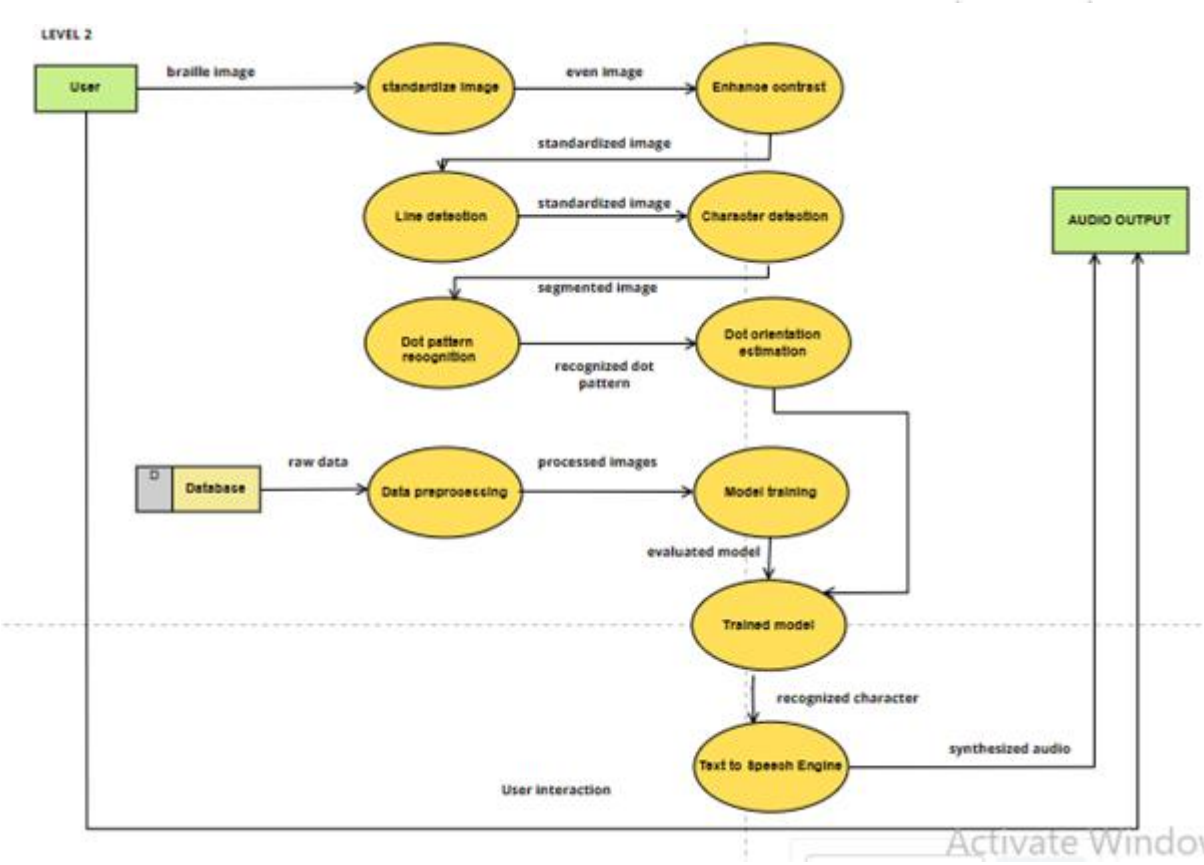




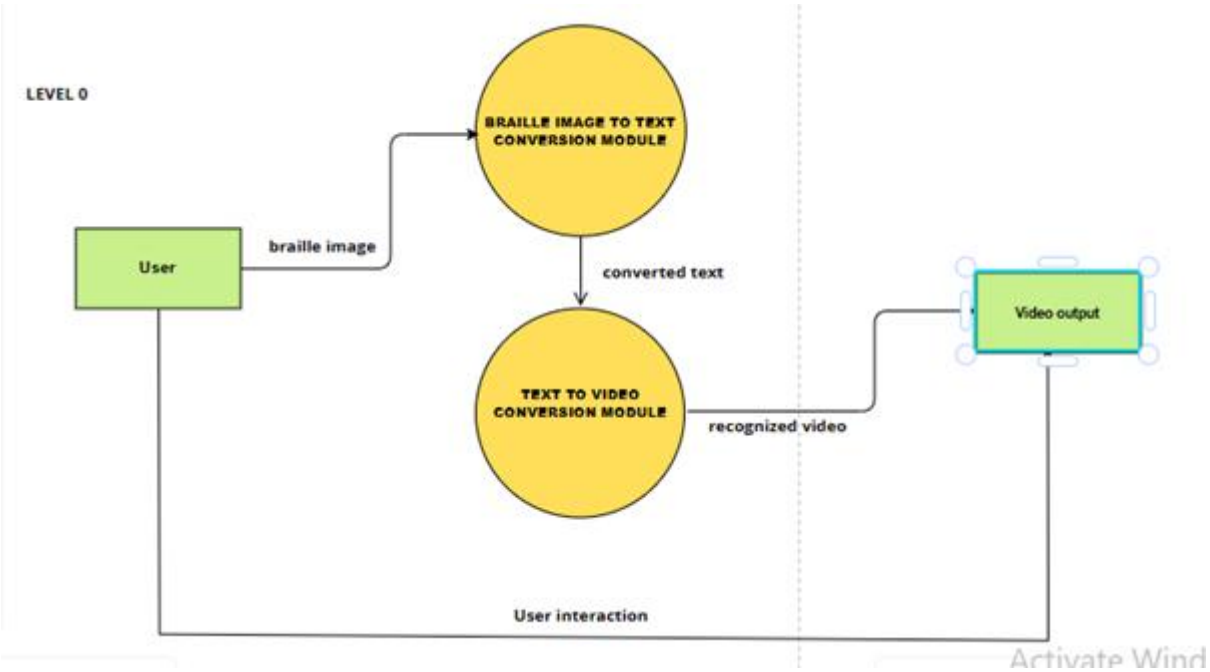
MODULE 3: BRAILLE IMAGE TO AUDIO

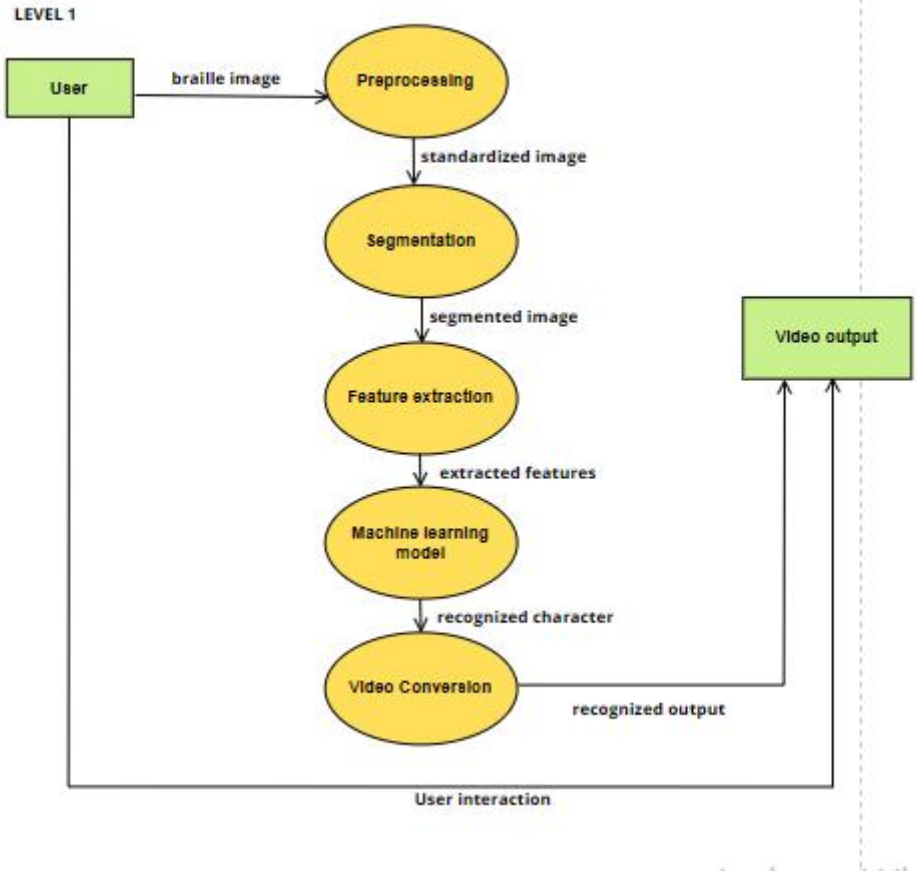


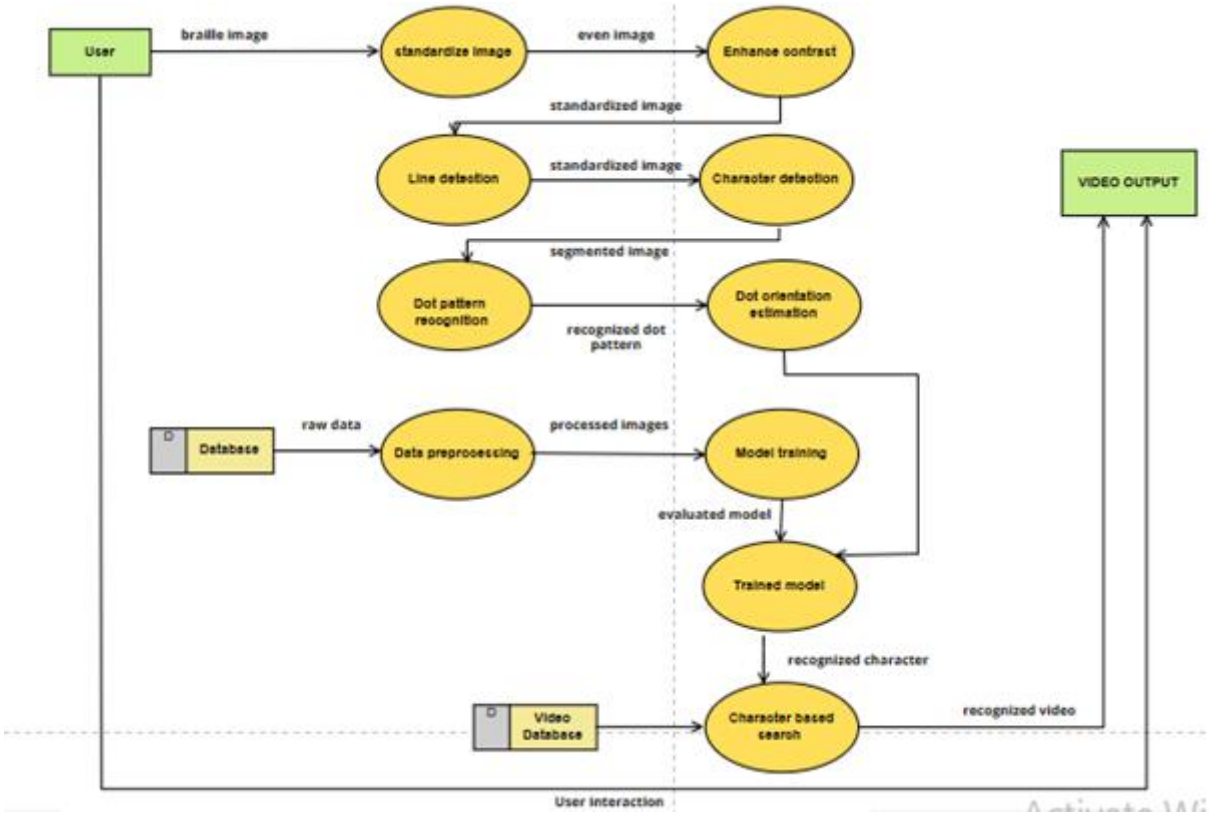

LEVEL 1
User
braille image
Preprocessing
standardized image
Segmentation
segmented image
Feature extraction
extracted features
Machine learning model
recognized character
Audio Conversion
recognized output
Audio output
User interaction


LEVEL 2
User
braille image
standardize image
even image
Enhance contrast
standardized image
Line detection
standardized image
Character detection
segmented image
Dot pattern recognition
recognized dot pattern
Dot orientation estimation
Database
raw data
Data preprocessing
processed images
Model training
evaluated model
Trained model
recognized character
Text to Speech Engine
synthesized audio
AUDIO OUTPUT
User interaction

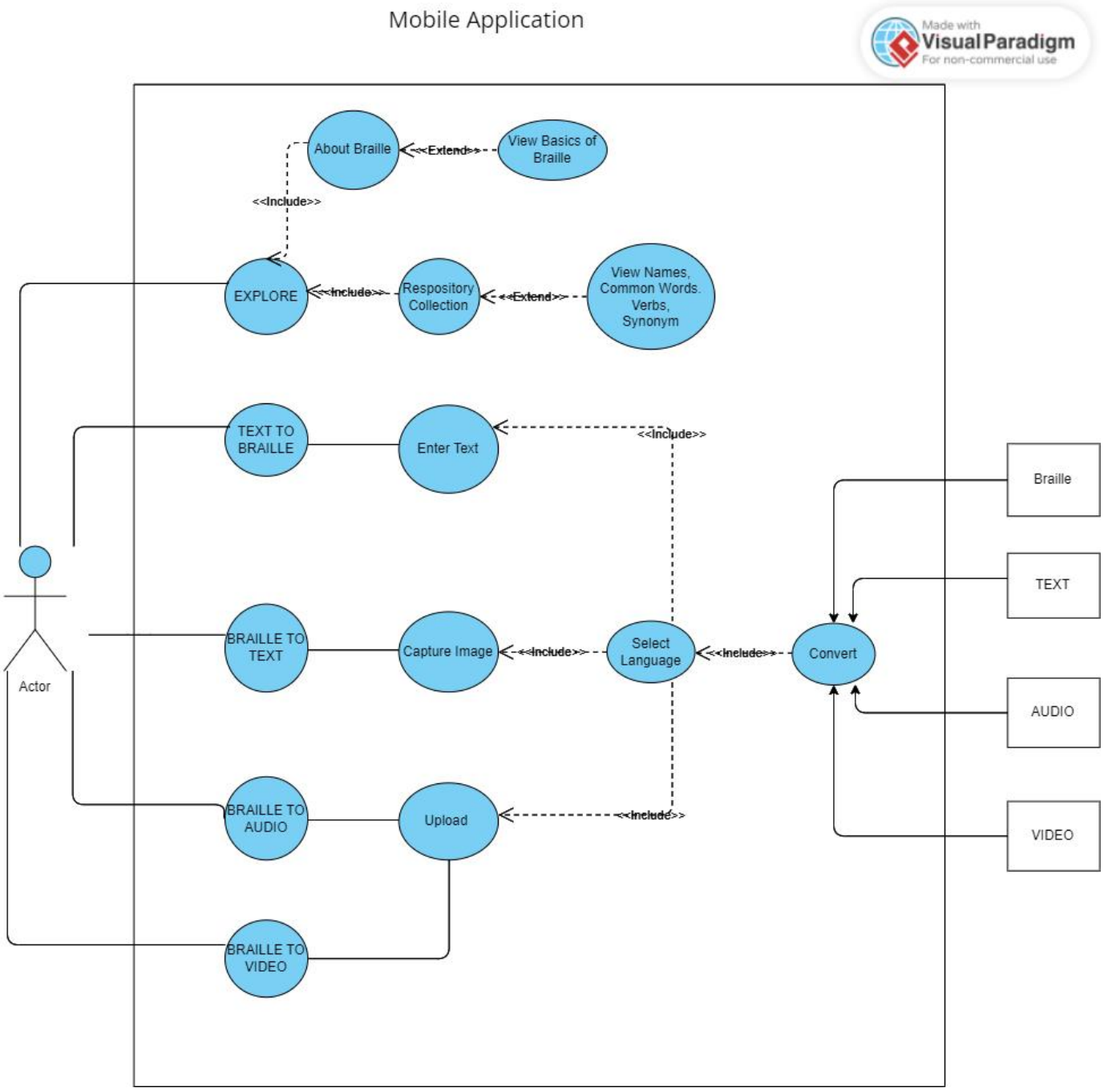
MODULE 4: BRAILLE IMAGE TO VIDEO



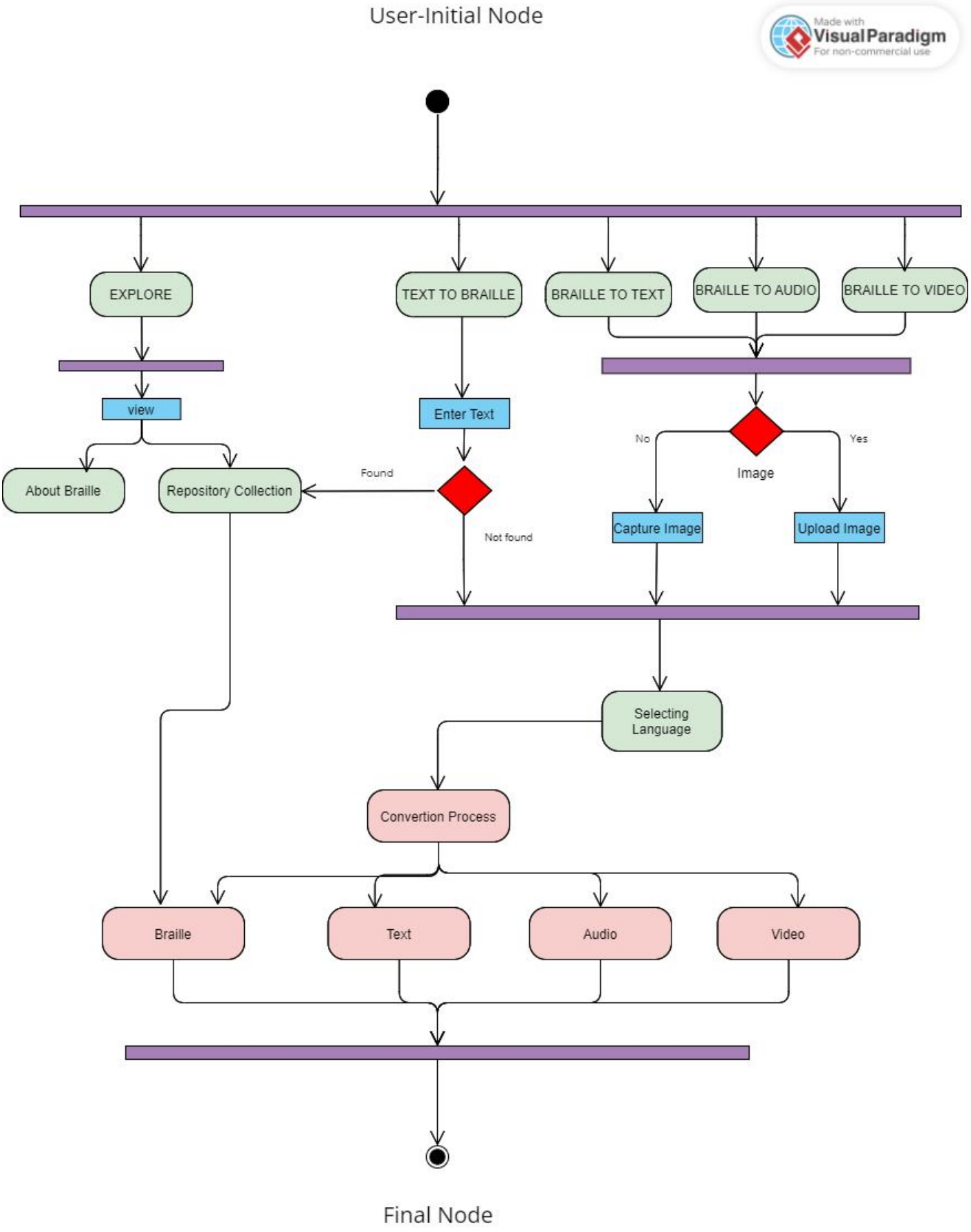



User
braille image
standardize image
even image
Enhance contrast
standardized image
Line detection
standardized image
Character detection
VIDEO OUTPUT
segmented image
Dot pattern recognition
Dot orientation estimation
recognized dot pattern
Database
raw data
Data preprocessing
processed images
Model training
evaluated model
Trained model
recognized character
Video Database
Character based search
recognized video
User interaction

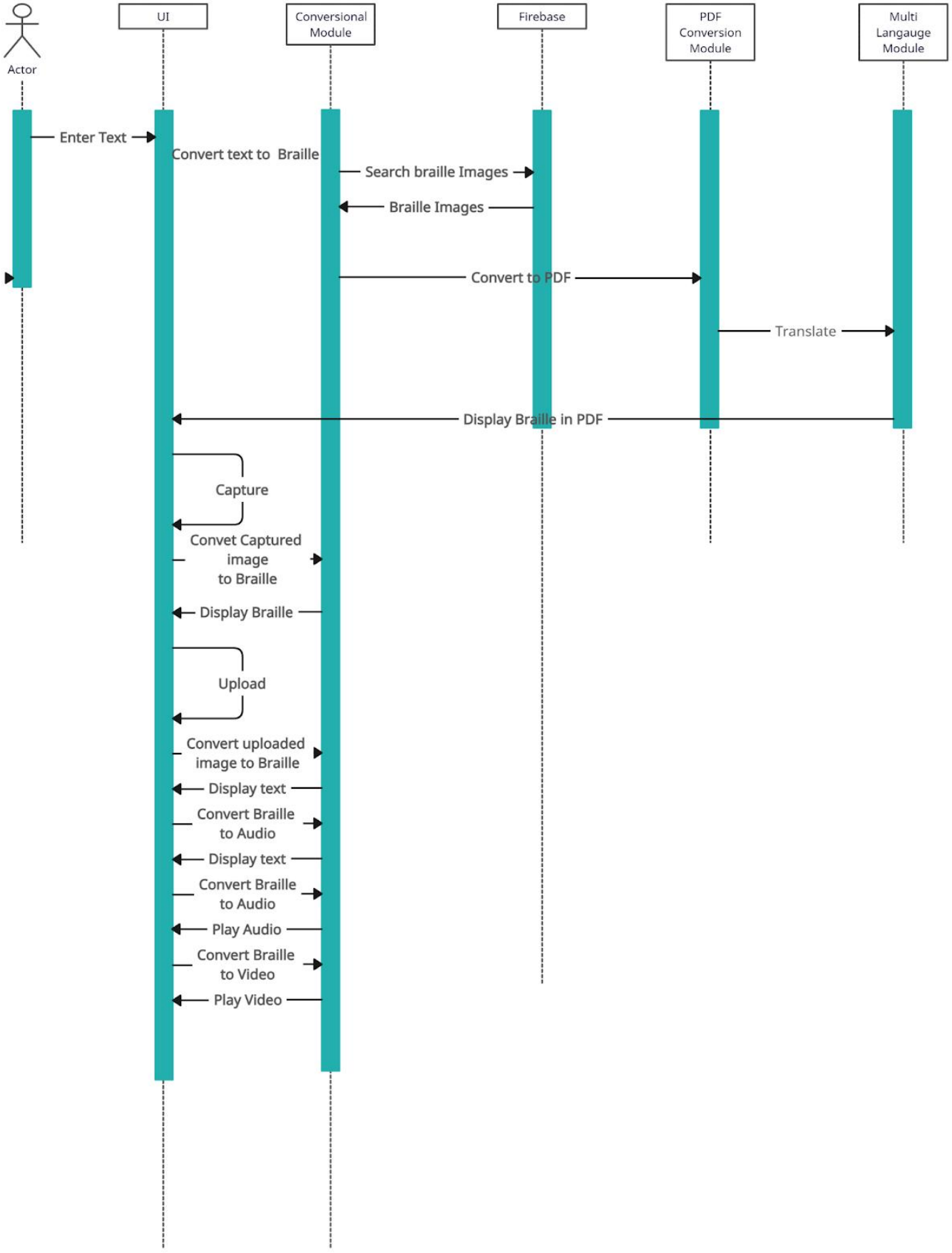
USE CASE DIAGRAM



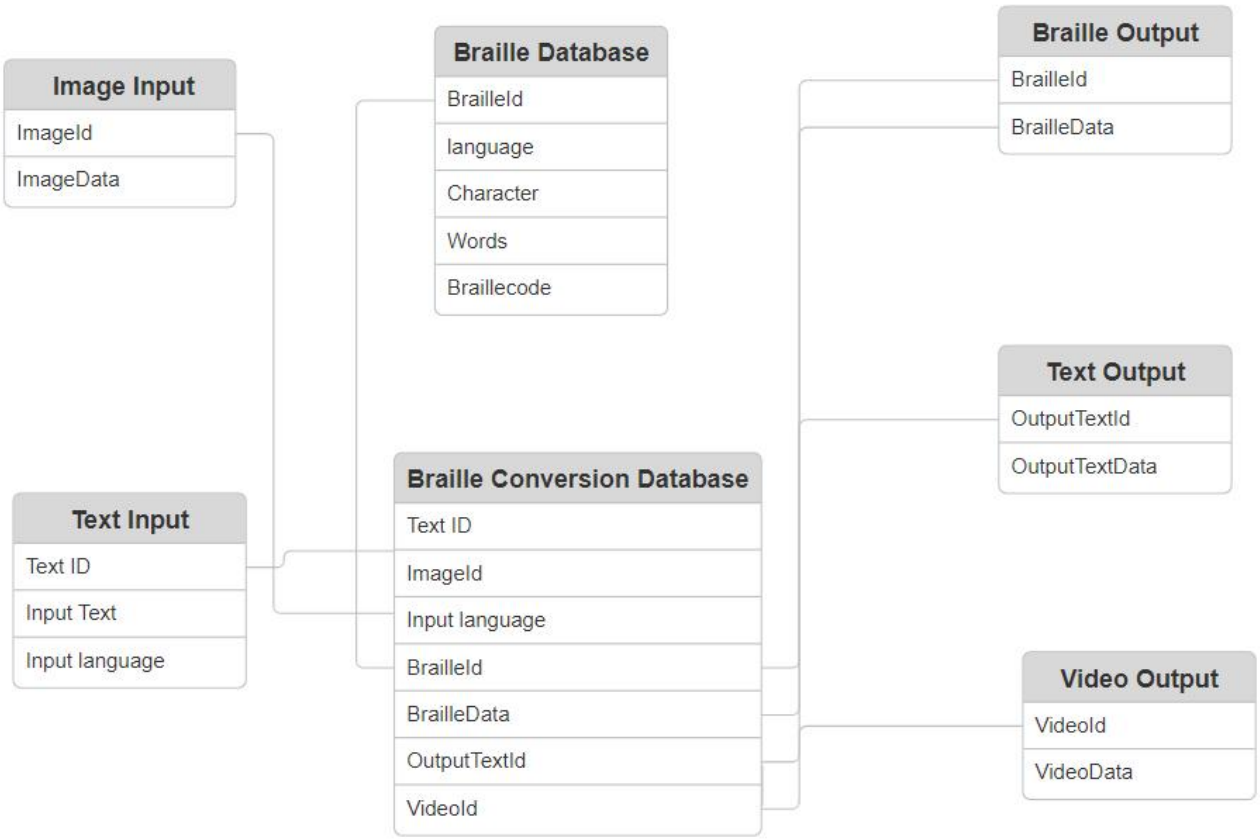
ACTIVITY DIAGRAM



SEQUENCE DIAGRAM



DATA DESIGN DIAGRAM



Result:

Thus , the design models for BraillePulse application is created.