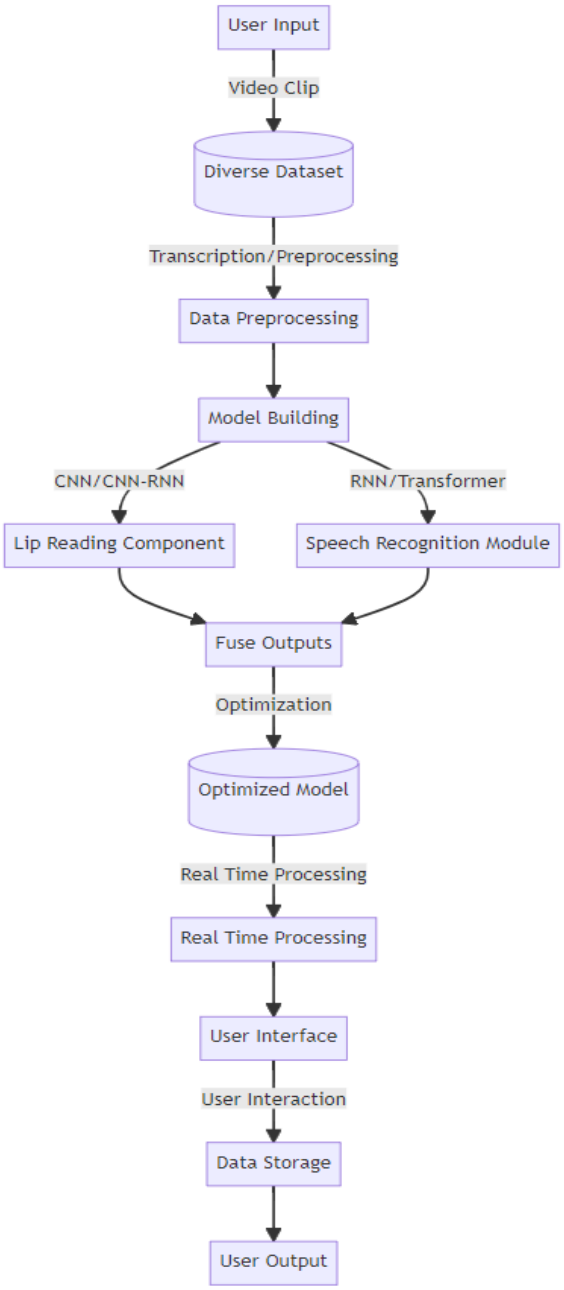
Project Design Phase-II
Data Flow Diagram & User Stories

Date	23 October 2023
Team ID	Team-592895
Project Name	Lip reading using deep learning
Maximum Marks	4 Marks

Data Flow Diagram:

- User Input (Video Clip): The process begins with the user providing a video clip containing spoken content.
- Diverse Dataset (Preprocessing): The video clip is preprocessed and transcribed to create a diverse dataset for training and testing.
- Model Building - CNN for Lip-Reading Component: The lip-reading component is trained using the diverse dataset to recognize lip movements and facial features.
- Model Building - RNN for Speech Recognition Module: The speech recognition module is trained using the transcribed audio data from the diverse dataset.
- Fuse Both Outputs: The outputs of the lip-reading and speech recognition modules are fused for more accurate transcriptions.
- Optimization: The combined model is optimized for both lip reading and speech recognition tasks.
- Real-Time Processing: The system performs real-time processing to provide immediate transcriptions.
- User Interface: The transcribed text is displayed on the user interface, which could be a mobile app or a web platform.
- User Interaction: Users can interact with the system, adjusting settings or requesting specific functionalities.
- Data Storage: Data may be stored for future analysis, model improvement, or auditing purposes.
- User Output: The user receives the transcribed text in real time, enabling them to participate fully in spoken conversations.


User Input
Video Clip
Diverse Dataset
Transcription/Preprocessing
Data Preprocessing
Model Building
CNN/CNN-RNN
RNN/Transformer
Lip Reading Component
Speech Recognition Module
Fuse Outputs
Optimization
Optimized Model
Real Time Processing
Real Time Processing
User Interface
User Interaction
Data Storage
User Output

User Stories

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
End User (Individual with hearing difficulty)	Real-time Transcription	USN-1	As a user with hearing difficulties, I want to see real-time transcriptions of spoken conversations on the user interface.	• The system should transcribe speech within a 2-second delay. • The transcriptions should be displayed clearly on the user interface.	High	Sprint-1
	Customization	USN-2	As a user with hearing difficulties, I want the ability to adjust the font size of transcriptions for better readability.	• The user should be able to increase or decrease the font size as per their preference.	Medium	Sprint-1
	Privacy and Data Security	USN-3	As a user with hearing difficulties, I want assurance that my personal data is handled with utmost privacy and security.	• The system should comply with relevant data protection laws and encryption standards.	High	Sprint-1

System Administrator	System Management	USN-4	As a system administrator, I want the ability to monitor system performance and manage user accounts.	• The administrator should be able to view system metrics. • The administrator should have the capability to add, modify, or disable user accounts.	Medium	Sprint-1
Researcher	Data Analytics	USN-5	As a researcher, I want access to anonymized, aggregated data for analysis and insights.	• The system should provide data in a format suitable for analysis. • Data should be anonymized to protect user privacy.	Medium	Sprint-2