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roject Design Phase-II
Data Flow Diagram & User Stories

Date	05 October 2023
Team ID	591865
Project Name	Lip Reading Using Deep Learning
Maximum Marks	4 Marks

Data Flow Diagrams:

1. Represents the entirety of the lip reading system.
Input (Raw Video):

2. Raw video data serves as the initial input to the system.
Data Preprocessing:

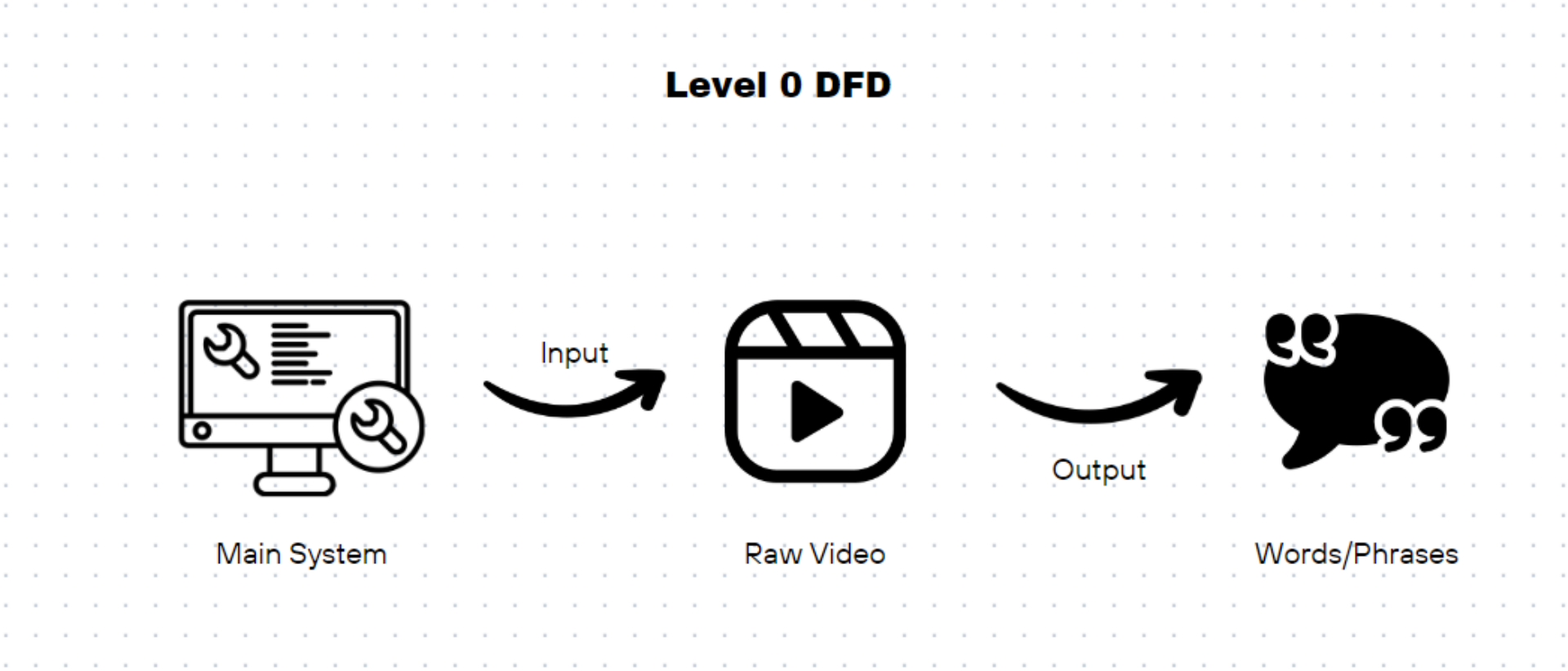
3. Component responsible for frame extraction, normalization, and preparing video data for the model.
Model Training:

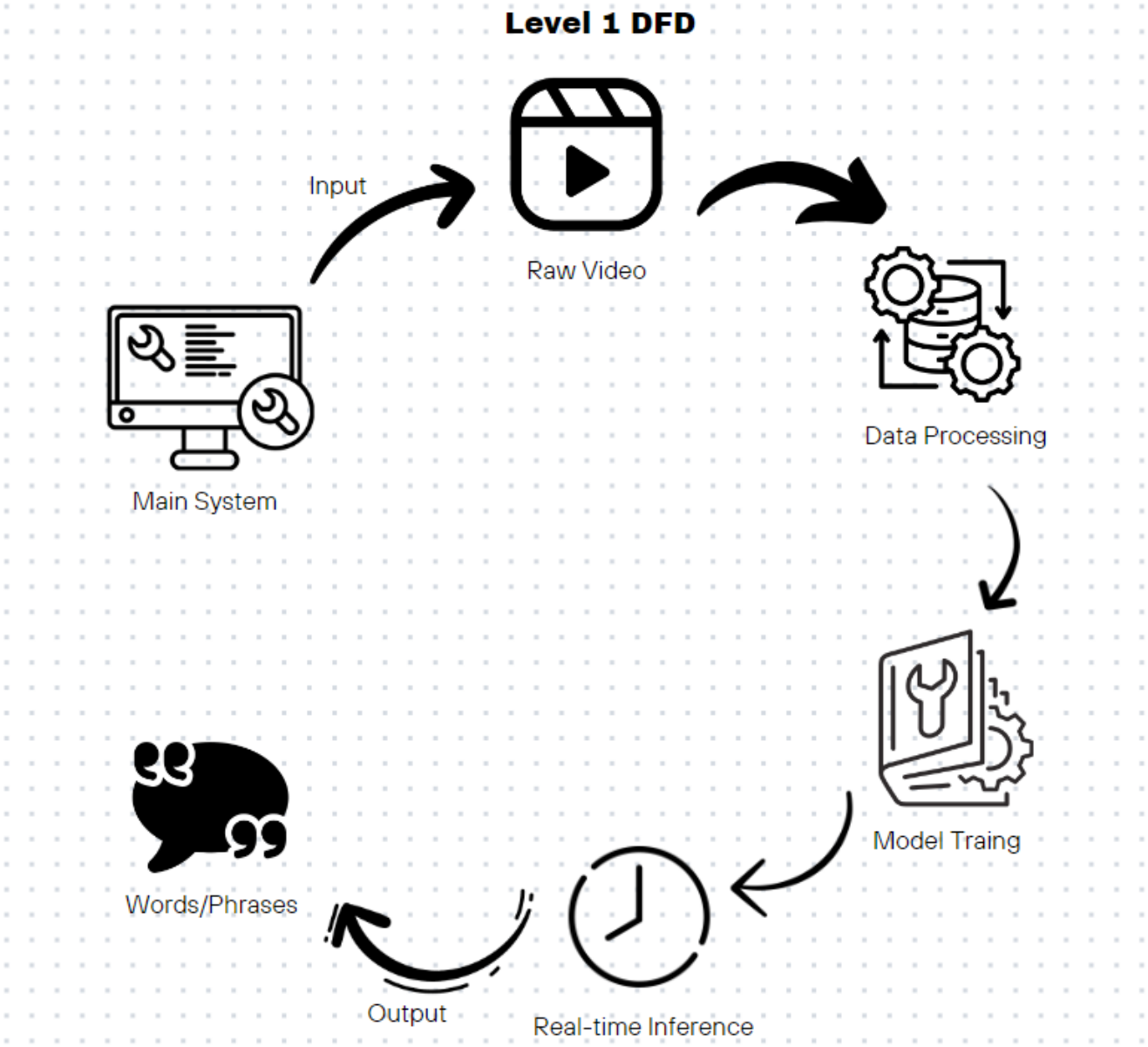
4. Involves the training of the deep learning model using preprocessed data.
Real-time Inference:

5. Component responsible for predicting spoken words from new video inputs in real-time.
Output (Predicted Words/Phrases):

The final output consists of the predicted words or phrases derived from the lip reading process.

Example:


Level 0 DFD
Input
Output
Main System
Raw Video
Words/Phrases


Level 1 DFD
Input
Raw Video
Data Processing
Main System
Model Traing
Words/Phrases
Output
Real-time Inference

User Stories

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
User with Hearing Impairment	Speech Transcription	USN-1	As a user, I want the lip reading system to accurately transcribe spoken words from videos into text in real-time, enhancing my comprehension and facilitating better communication.	The system should transcribe spoken words from videos with at least 90% accuracy in real-time.	High	Sprint-1
Developer	System Integration	USN-2	As a developer, I need a system that efficiently processes video data, trains models using deep learning algorithms, and provides APIs for seamless integration into various applications.	The system should have clear documentation and APIs that allow easy integration for different applications.	High	Sprint-1
Service Provider	Platform Integration	USN-3	As a service provider, I want to integrate this lip reading technology into our communication platform to offer real-time transcription services, improving accessibility and inclusivity for our users.	The technology should seamlessly integrate into our platform's existing interface and provide real-time transcription services.	Low	Sprint-1.1
Researcher	Dataset Accessibility	USN-4	As a researcher, I require access to a comprehensive dataset and an efficient lip reading system for studying speech recognition patterns, aiding in further advancements in the field.	The system should provide access to a diverse and well-annotated dataset suitable for research purposes.	Medium	Sprint-1.1
System Administrator	Error Handling & Monitoring	USN-5	As a system administrator, I aim to ensure the system's stability, implementing robust error handling mechanisms and monitoring tools to swiftly identify and resolve issues for uninterrupted service.	The system should log errors, provide real-time monitoring, and send alerts for any system malfunctions or downtime.	High	Sprint-1.1
User in Noisy Environments	Clarity in Noisy Environments	USN-6	As a user in noisy environments, I expect the lip reading system to accurately interpret lip movements for clear communication, providing an alternative method when audio is unclear or compromised	The system should maintain at least 80% accuracy in interpreting lip movements in noisy environments.	Medium	Sprint-1.2
Content Creator	Video Transcription	USN-7	As a content creator, I seek a reliable lip reading tool that accurately transcribes videos, enabling me to offer captions or subtitles for a wider audience, enhancing accessibility and engagement.	The system should generate accurate transcriptions for videos with different accents and speech patterns.	High	Sprint-1.2

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