CHP 4:

ARCHITECTURE DIAGRAM:

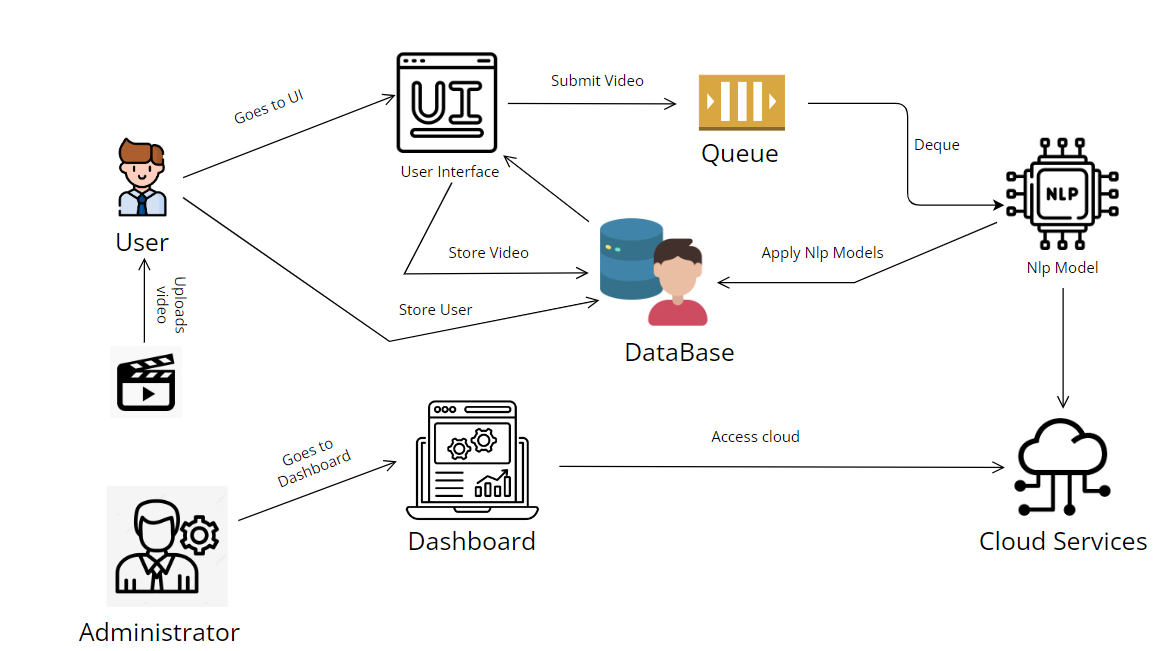
This architecture diagram outlines the components of a Sign Language Transcription System:

1. **User**: Represents individuals interacting with the system, providing user data and submitting sign language videos.
2. **SignLanguageVideo**: Represents videos of sign language submitted by users.
3. **UserDatabase**: Stores user information and sign language videos.
4. **UserInterface**: Web interface for users to interact with the system, displaying user information, and submitting sign language videos.
5. **MessageQueue**: Manages the queue of sign language videos for processing.
6. **TranslationService**: Utilizes NLP models to process sign language videos and generate text.
7. **CloudServices**: Integrates the message queue and translation service.
8. **Administrator**: Represents administrators with access to system management.
9. **AdministratorInterface**: Web interface for administrators to access the dashboard, select actions, and apply changes.

Key Interactions:

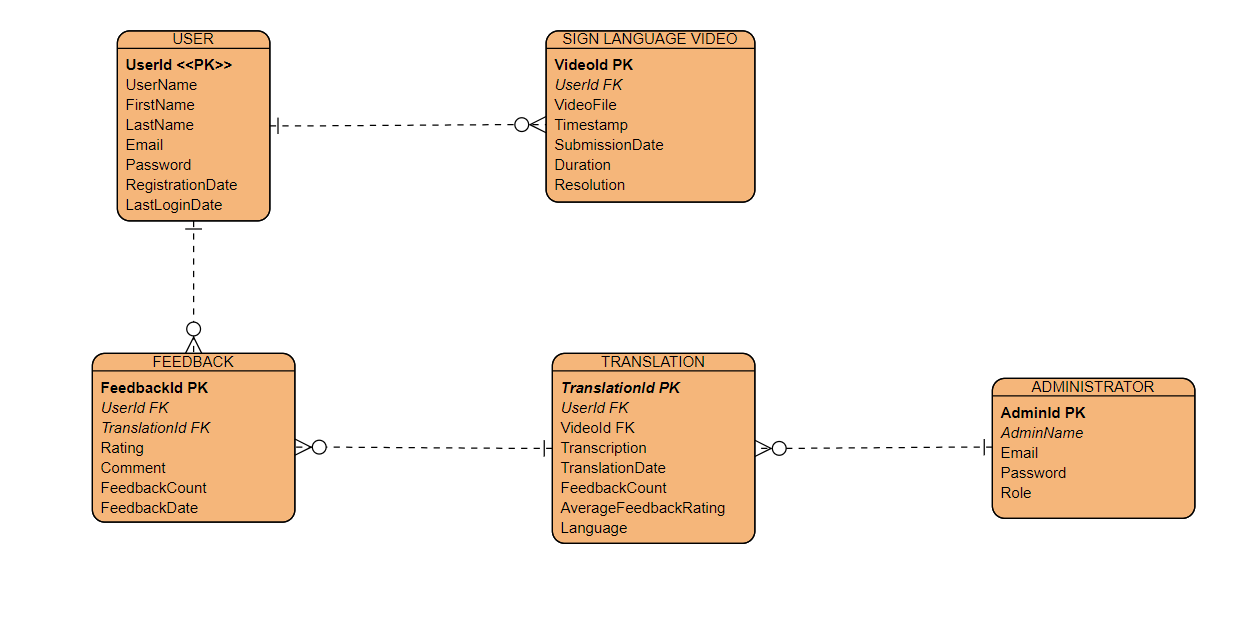
* Users submit sign language videos through the UserInterface.
* User data and videos are stored in the UserDatabase.
* MessageQueue manages the queue of videos for processing.
* TranslationService processes videos using NLP models.
* CloudServices integrate the message queue and translation service.
* Administrators manage the system through the AdministratorInterface.

This architecture facilitates the transcription of sign language videos into text, promoting inclusivity and accessibility.



ERD:

1. **User Entity:**
   * **Attributes:** **UserId**, **UserName**, **FirstName**, **LastName**, **Email**, **Password**, **RegistrationDate**, **LastLoginDate**, and other user-specific attributes.
   * **Relationships:**
     + A User can submit multiple SignLanguageVideos ("Submits").
     + A User can provide feedback on multiple Translations ("Provides Feedback").
2. **SignLanguageVideo Entity:**
   * **Attributes:** **VideoId**, **UserId** (foreign key), **VideoFile**, **Timestamp**, **SubmissionDate**, **Duration**, **Resolution**, and other video-specific attributes.
   * **Relationships:**
     + A User can submit SignLanguageVideos ("Submits" relationship).
     + Each SignLanguageVideo is associated with a Translation through **VideoId**.
3. **Administrator Entity:**
   * **Attributes:** **AdminId**, **AdminName**, **Email**, **Password**, **Role**, and other admin-specific attributes.
   * **Relationships:**
     + An Administrator can review multiple Translations ("Reviews" relationship).
4. **Translation Entity:**
   * **Attributes:** **TranslationId**, **VideoId** (foreign key), **Transcription**, **TranslationDate**, **FeedbackCount**, **AverageFeedbackRating**, **Language**, and other translation-specific attributes.
   * **Relationships:**
     + A Translation is associated with a SignLanguageVideo through **VideoId**.
     + A Translation can have multiple Feedback entries ("Has" relationship).
5. **Feedback Entity:**
   * **Attributes:** **FeedbackId**, **UserId** (foreign key), **TranslationId** (foreign key), **Rating**, **Comment**, **FeedbackDate**, and other feedback-specific attributes.
   * **Relationships:**
     + A User can provide feedback on Translations ("Provides Feedback" relationship).
     + A Translation can have multiple Feedback entries ("Has" relationship).



DFD: