National Taiwan University
111 Fall Software Engineering

Software Requirements Specification

Multifunctional Verbatim Management System

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Outline

Revision History

Version	Responsibility	Date	Item descripter	Reviewer	Date
0.1	廖盛弘	14/10/22	Build SRS	All	

1. System Architecture

1.1 Introduction

People often need to participate in a variety of meetings, some of which have the need to record the content of the meeting. Therefore, audio recordings and verbatim transcripts have become an integral part of the meeting.

Our team members observed that there is no software available to automatically generate verbatim transcripts that meets the needs of the general public.

In this project, we have developed a software for verbatim transcripts. In addition to the functions it should have, it can also automatically translate, automatically summarize, and automatically capture keywords. By realizing various functions, it can meet the needs of modern people.

This project is developed by students of National Taiwan University. The content of the project mainly includes page design, functional algorithm design, back-end management interface and other projects.

1.2 Architecture Expression

| Module	Descriptions
Registration Module	Provides registration functionality.
Login Module	Provides login functionality.
Block and Page Management Module	Provides the operation function of the layout.
Audio Processing Module	Provide audio processing related functions.
Transcript Module	Provides the function to transfer the audio data into script.
Script-Extended Multifunction Module	Provides functionalities of script translation, generating abstracts, academic term processing.
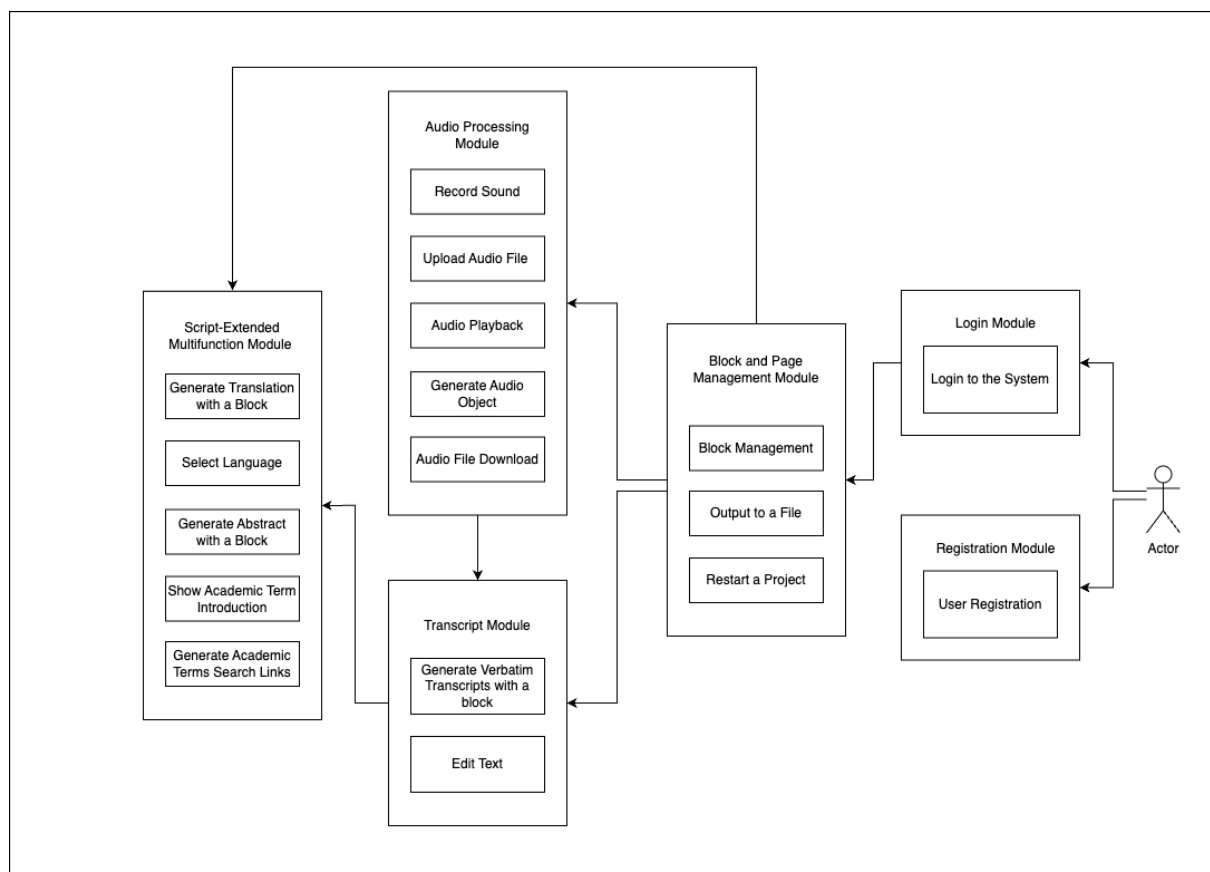
Figure 1: System Architecture

2. Functional Requirement

2.1 Front-end Functional Requirements

Registration Module	
FFR1	**Registration Container**
	Provide a registration interface for new users and allow them to sign up as the users of this system.
Login Module	
FFR2	**Login Container**
	Allow registered users to enter their own account and password to login the system with their previously stored data.
Block and Page Management Module	
FFR3	**Page Container**
	Handle the transcription project as a whole, allowing the user to export the project as a text file or to erase the current project and start a new one.
FFR4	**Block Container**
	Handle transcription block management such as adding, deleting, hiding, duplicating, and merging
Audio Processing Module	
FFR5	**Audio Library Container**
	Provide an interface for logged in users to view, play and access all uploaded, recorded or converted files. It allows the user to do operations such as uploading, downloading or deleting.
FFR6	**Audio Playing Container**
	Handle operations for selected audio file such as playing, pausing, and time adjustment
Transcript Module	
FFR7	**Text Conversion Container**
	Handle real-time present of recording-to-text conversion.
FFR8	**Text Processing Container**
	Provide an interface for users to do viewing, editing, recording, converting.

Script-Extended Multifunction Module	
FFR9	**Multifunction Block Container**
	Provide an interface for users to do transcription-extended operation, including translating, summarying.
FFR10	**Term Capturing Container**
	Allow the user to browse all technical terms with related information and links found on the current project.

2.2 Back-end Functional Requirements

Registration Module	
BFR1	**Registration**
	The module should provide functions to identify different users, such as register and login.
Login Module	
BFR2	**Login**
	The module should provide functions to identify different users, such as register and login.
Block and Page Management Module	
BFR3	**File Management**
	The module should provide functions to create, rename, move, delete folders and files. Given a certain user ID, the module should return the files of that user.
Audio Processing Module	
BFR4	**Audio**
	The module should provide functions to manipulate audio signals such as saving the recording and forwarding an saved audio to the front end.
Transcript Module	
BFR5	**Transcription**

	After receiving the audio signal, the module should transcribe the audio to text and save it to the file through the **File Management Module**.
Script-Extended Multifunction Module	
BFR6	**Translation**
	Given Chinese sentences, the module should translate them into English and vice versa. After the translation, the translated text should be saved as the file through the **File Management Module**.
BFR7	**Summary Retrieval**
	Given sentences, the module should return the summary of the text and save it to the file through the **File Management Modele**.
BFR8	**Term Retrieval**
	Given sentences, the module should retrieve technical terms and save them to the file through the **File Management Module**.
BFR9	**Term Searching**
	Given a technical term, the module should search and return the explanation of that and save it to the file through the **File Management Module**.

3. Interface Requirement

3.1 External Interface Requirements

EIR1	User and Register Container
	The interface allows users to enter a pair of username and password to create a new account for the system.
EIR2	**User and Login Container**
	The interface allows users to enter their own username and password to enter the system.
EIR3	**User and Audio Library Container**
	The interface allows users to upload their files to the system and to download the files from the system to their own devices.
EIR4	**User and Transcription Board Container**
	The interface allows users to export the entire transcription as a file and download it to the device.
EIR5	**User and Transcription Block Container**
	The interface allows users to do operations on the transcription block.
EIR6	**User and Term Capturing Container**
	The interface allows users to browse academic terms and related descriptions and links of the project.
EIR7	**User and Audio Container**
	The interface allows users to play, pause, and do time adjustment for an audio file.

3.2 Internal Interface Requirements

IIR1	Register Container and Register
	Register Module authenticates the username and password given by the Register Container and creates a new account if valid.
IIR2	Login Container and Login
	Login Container sends login information and the Login Module confirms whether the account exists and the corresponding password is correct.
Audio Library Container and File Management	
IIR3-1	File List
	File Library Container gives a certain account id to File Management Module and gets a list of files owned by the account
IIR3-2	File Access
	File Library Container demands to get a certain file from the server through the File Management Module.
IIR4	Audio Library Container and Transcription Board Container
	Transcription Board Container handles the files drag from File Library Container
IIR5	Transcription Block Container and Translation Retrieval
	Transcription Block Container sends the text content and the chosen translation language to the Translation Module and gets the translated content in response.
IIR6	Transcription Block Container and Transcription
	Transcription Block Container sends the chosen audio file name to convert to the Transcription Module. Conversion Module converts the audio file to text and sends it back as string.
IIR7	Transcription Block Container and Summary Retrieval
	Transcription Block Container sends the text content to the Summary Module and gets the summary of the content in response.
IIR8	Transcription Block Container and Recording
	Transcription Block Container sends the recorded audio data to the Recording Module every certain interval. Recording Module converts the audio data to text and sends it back as string.
IIR9	Term Container and Term
	Term Module will search for all the technical terms and related information on the current project and send it to the front end for Term Container to show.

4. Nonfunctional Requirement

NFR1	Response
	System transfer the script in real time , which means user can record and get the result at the same time, less than 100ms
NFR2	Privacy
	We use access management and access controls commensurate with the risk to data to ensure access to data is associated with a business need, such as providing you with support.
NFR3	Portability
	The user can download or export any file(e.g. Audio, script,digest) in their local device.
NFR4	Flexibility
	The user can input data flexibly. The user can upload or record directly on our website.

5. Use Case Diagram

5.1 Use Case Diagram
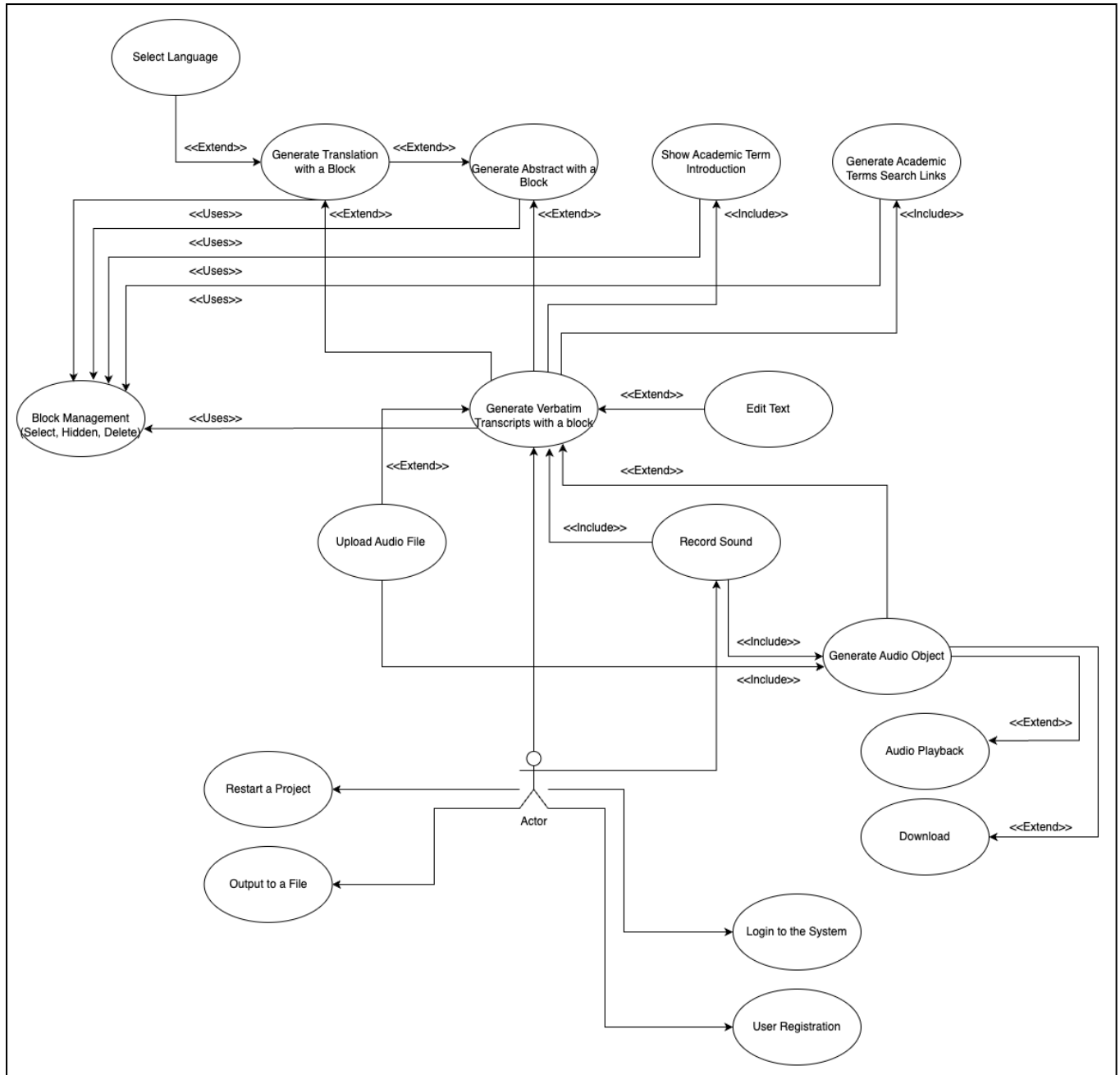
Figure 5-1. Use Case Diagram

5.2 Actor Description and Actor Use Case Matrix

Table 5-1 : Actor Description Table

Actor Name	Actor Description
User	Users of this web software

Table 5-2 : Actor Use Case Table

Use Case	User
Block Management	V
Text Edition	V
Record Sound	V
Audio File Upload	V
Generate Verbatim	V
Audio Play Back	V
Download an audio file	V
Show Academic Term Introduction	V
Generate Academic Terms Search Links	V
Generate Abstract with a Block	V
Add an Auto-Translated Block	V
User Registration	V
User Login	V
Export Transcription As A File	V
Start a New Project	V

5.3 Use case specification

5.3.1 Block Management & Text Edition

Use Case ID	**UC-BM-001**
Use Case Name	Block Management
Requirements	[FFR-4] Block Container [BFR-3] File Management
Description	Some basic operations to manage the blocks
Actor	User
Assumptions	
Constraints	
Priority	High
Pre-Conditions	The user must be registered & has loginned to the system.
Post-Conditions	The system saves the actions performed

Basic Flow
The user clicks the "Add a Block" button to create a new block.

Alternate Flows

Flows below are all complete flow on their own, and the use case ends after doing any of them:
   1. The user checks or unchecks the checkbox in each block to mark the block as selected or unselected and then performs one of the following (1a~1e) and ends the use case.
      a. The user clicks the "Delete Selected" button to delete multiple blocks at a time.
      b. The user clicks the "HIde Selected" button to hide multiple blocks at a time.
      c. The user clicks the "Show Selected" button to show multiple blocks at a time.
      d. The user clicks the "Merge Selected" button to merge the blocks into a single block.
      e. The user clicks the "Duplicate Selected" button to create copying blocks below it.
   2. The user clicks the "Toggle Hiding" button in each block to toggle the hidden/shown status.
   3. The user clicks the "Delete" button in each block to irreversibly delete the block.
   4. The user clicks the "Move Upward" button in each block to move it one-block upward.
   5. The user clicks the "Move Downward" button in each block to move it one-block downward.

Exceptional Flows
In alternate flow 1, if no blocks are checked, do nothing.

Inclusion Use Case	
Extension Use Case	
Business Rules	
Artifacts	
Use Case Glossary	

Use Case ID	**UC-BM-002**
Use Case Name	Text Edition
Requirements	[FFR-4] Block Container [FFR-8] Text Processing Container [BFR-3] File Management
Description	To edit the contents of a block
Actor	User
Assumptions	
Constraints	
Priority	High
Pre-Conditions	1. The user must be registered & has loginned to the system. 2. There must be existing blocks for edition. 3. The blocks displaying real-time content (transcript & translation) couldn't be edited.
Post-Conditions	The system saves the changes made
Basic Flow	

1. The user clicks the content region of a block.
2. System displays the edition window with the content of that block.
3. The user edits the content (adding words or removing words).
4. The user presses the "Confirm" button to save the change.

Alternate Flows

Instead of Basic Flow step 4, the user could press the "Cancel" button to return to the main page. The system won't save the change.

Exceptional Flows	
Inclusion Use Case	
Extension Use Case	
Business Rules	
Artifacts	
Use Case Glossary	

5.3.2 Audio Operation

Use Case ID	**UC-AO-001**
Use Case Name	Record Sound
Requirement	[FFR-5] Audio Library Container [FFR-7] Text Conversion Container [BFR-3] File Management [BFR-4] Audio [IIR-8] Transcription Block Container and Recording
Description	The system records a sound and stores it for future use
Actor	User
Assumptions	
Constraints	
Priority	High
Pre-Conditions	The user must login to the system.
Post-Conditions	The recorded sound must be displayed as one of the recorded sounds
Basic Flow	

1. The user clicks the record button
2. The system starts recording the sound
3. The user clicks on the stop button
4. The system stores the new audio as a recorded file

Alternate Flows	

1. The user closes the window prematurely, cancel the recording
2.

Exceptional Flows	

The audio file gets corrupted, don't store anything

Inclusion Use Case	[UC-AO-003] Generate Verbatim [UC-] Generate Audio Object
Extension Use Case	
Business Rules	
Artifacts	
Use Case Glossary	

Use Case ID	**UC-AO-002**
Use Case Name	Audio File Upload
Requirement	[FFR-5] Audio Library Container [BFR-3] File Management [EIR-3] User and Audio Library Container [IIR3-1] File List [IIR3-2] File Access
Description	The system allows for the user to upload a sound for future use
Actor	User
Assumptions	
Constraints	
Priority	High
Pre-Conditions	The user must login to the system.
Post-Conditions	The uploaded sound must be displayed in the upload section

Basic Flow

1. The user clicks on the upload button
2. The user selects an audio file to upload
3. The file gets stored in the system and displayed with the uploaded files

Alternate Flows

1. The user selects a non-valid audio file, which the system will reject
2. The user selects a file with an invalid file name, which the system will reject
3. The user cancels the upload operation

Exceptional Flows

1. File gets corrupted mid-upload, the system must discard all uploaded information

Inclusion Use Case	[UC-] Generate Audio Object
Extension Use Case	[UC-AO-003] Generate Verbatim
Business Rules	
Artifacts	
Use Case Glossary	

Use Case ID	**UC-AO-003**
Use Case Name	Generate Verbatim
Requirement	[FFR-4] Block Container [FFR-7] Text Conversion Container [BFR-8] Term Retrieval [BFR-9] Term Searching [EIR-5] User and Transcription Block Container [IIR-5] Transcription Block Container and Translation Retrieval
Description	The system generates a verbatim translation requested by the user
Actor	User
Assumptions	
Constraints	
Priority	High
Pre-Conditions	The user must login to the system.
Post-Conditions	The verbatim translation must be displayed in a block

Basic Flow

1. The user selects a block option to generate a verbatim translation
2. The system returns the translation and academic terms within the translated block, along with the links

Alternate Flows

1. If there is no text in the block, go to the end of the use case.
2. If there is no academic term in the text, go to the end of the use case.

Exceptional Flows

System Failed
1. The System failed to generate a verbatim for some reason
2. The System prompts error messages and asks the user to try again.

Inclusion Use Case	[UC-BM-001] Block Management [UC-AT-001] Show Academic Term Introduction [UC-AT-002] Generate Academic Search Term Links
Extension Use Case	[UC-AB-001] Generate Abstract with a block [ ] Generate a Translation with a block
Business Rules	
Artifacts	
Use Case Glossary	

Use Case ID	**UC-AP-001**
Use Case Name	Audio Play Back
Requirement	[FFR-6] Audio Playing Container [BFR-3] File Management [BFR-4] Audio
Description	The audio saved on the server. The user can replay and pause the audio file.
Actor	User
Assumptions	
Constraints	
Priority	Medium
Pre-Conditions	The user must be registered & has loginned to the system.
Post-Conditions	The user device will output the sound.

Basic Flow

1. The user clicks the specific audio file.
2. The user clicks the button "Replay" and plays the audio.

Alternate Flows

1. If the user wants to stop the audio. Click the button "Pause" and pause the device to play.

Exceptional Flows

If the audio file is broken, the server will send an error message to notify the user.

Inclusion Use Case	
Extension Use Case	
Business Rules	
Artifacts	
Use Case Glossary	

Use Case ID	**UC-AD-001**
Use Case Name	Download an audio file
Requirement	[FFR-5] Audio Library Container [BFR-3] File Management
Description	The user can download the specific audio file at the local device.
Actor	User
Assumptions	
Constraints	
Priority	Medium
Pre-Conditions	The user must be registered & has loginned to the system.
Post-Conditions	The user device will save the specific audio file.

Basic Flow

1. The user clicks the specific audio file.
2. Click the button "Download" and download the audio file.

Alternate Flows

Exceptional Flows

If the audio file is broken, the server will send an error message to notify the user.

Inclusion Use Case	
Extension Use Case	
Business Rules	
Artifacts	
Use Case Glossary	

5.3.3 Academic Term

Use Case ID	**UC-AT-001**
Use Case Name	Show Academic Term Introduction
Requirement	[FFR-10] Term Capturing Container [BFR-8] Term Retrieval [BFR-9] Term Searching
Description	A user can see the description of academic terms in the text.
Actor	User
Assumptions	
Constraints	
Priority	Medium
Pre-Conditions	The user must login to the system.
Post-Conditions	The academic terms and their descriptions should be displayed on the screen.

Basic Flow
1. The system receives text to retrieve academic terms. 2. The system retrieves academic terms. 3. The system searches each academic term generated in the previous step. 4. The system generates a description corresponding to each term. 5. The system displays terms and their descriptions.

Alternate Flows
1. If there is no text in the block, go to the end of the use case. 2. If there is no academic term in the text, go to the end of the use case. 3. If the system finds nothing during the searching, keep the description empty.

Exceptional Flows

System Failed 1. The System failed to show academic terms for one or more reasons. 2. The System prompts error messages and asks the user to try again.

Inclusion Use Case	[UC-BM-001: Block Management]
Extension Use Case	
Business Rules	
Artifacts	Academic terms with their descriptions
Use Case Glossary	

Use Case ID	**UC-AT-002**
Use Case Name	Generate Academic Terms Search Links
Requirement	[FFR-10] Term Capturing Container [BFR-8] Term Retrieval [BFR-9] Term Searching
Description	Generate links that the user can click for more information with certain academic terms.
Actor	User
Assumptions	
Constraints	
Priority	Medium
Pre-Conditions	The user must login to the system.
Post-Conditions	There should be a link corresponding to each academic term that is able to be clicked to search that term with a search engine.

Basic Flow

1. The system receives text to retrieve academic terms.
2. The system retrieves academic terms.
3. The system generates a link to each academic term generated in the previous step.
4. The system displays a link beside each academic term.

Alternate Flows

1. If there is no text in the block, go to the end of the use case.
2. If there is no academic term in the text, go to the end of the use case.

Exceptional Flows

<u>**System Failed**</u>
1. The System failed to generate links for one or more reasons.
2. The System prompts error messages and asks the user to try again.

Inclusion Use Case	[UC-BM-001] Block Management
Extension Use Case	
Business Rules	
Artifacts	Academic terms with their searching links
Use Case Glossary	

5.3.4 Abstract Block

Use Case ID	**UC-AB-001**
Use Case Name	Generate Abstract with a Block
Requirement	[FFR-4] Block Container [BFR-7] Summary Retrieval
Description	The system creates a new block with the abstract of the selected block.
Actor	User
Assumptions	
Constraints	
Priority	Medium
Pre-Conditions	The user must login to the system.
Post-Conditions	The abstract should be displayed in a new block below.

Basic Flow

1. The system receives text to retrieve academic terms.
2. The system retrieves academic terms.
3. The system generates a link to each academic term generated in the previous step.
4. The system displays a link beside each academic term.

Alternate Flows

1. If there is no text in the block, go to the end of the use case.
2. If there is no academic term in the text, go to the end of the use case.

Exceptional Flows

System Failed
1. The System failed to generate an abstract for one or more reasons.
2. The System prompts error messages and asks the user to try again.

Inclusion Use Case	[UC-BM-001] Block Management
Extension Use Case	
Business Rules	
Artifacts	Academic terms with their searching links
Use Case Glossary	

5.3.5 Translated Block

Use Case ID	**UC-TR-001**
Use Case Name	Add an Auto-Translated Block
Requirement	[FFR-4] Block Container [FFR-9] Multifunction Block Container [BFR-3] File Management [BFR-6] Translation
Description	The system generates a translated transcript from an assigned block and displays it in another block.
Actor	User
Assumptions	
Constraints	
Priority	Medium
Pre-Conditions	The user must login to the system.
Post-Conditions	The translated transcript should be displayed in another block

Basic Flow

1. The user clicks the specific block.
2. The user clicks "Translated Block" from the tool block.
3. The system creates a new block under the target block.
4. The system fills the translated text (Default : English) in the new block.

Alternate Flows

1. The user clicks other languages from the tool block.
2. The system creates a new block under the target block.
3. The system fills the translated text in the new block.

Exceptional Flows

Inclusion Use Case	[UC-BM-00] Block Management
Extension Use Case	
Business Rules	
Artifacts	
Use Case Glossary	

5.3.6 System

Use Case ID	**UC-SYS-001**
Use Case Name	User Registration
Requirements	[FFR-1] Registration Container [BFR-1] Registration
Description	An unregistered user creates an account of the System.
Actor	User
Assumptions	User uses the system for the first time
Constraints	
Priority	High
Pre-Conditions	The system is not logged in and the user does not have an account
Post-Conditions	**Success** - The account is created and is able to login to the system. **Failure** - The account is not created for one or more reasons.

Basic Flow

1. The system prompts the user for a username and password or to register a new account.
2. The user selects "Register" and enters the registration page.
3. The system prompts the user for registration information, username and password.
4. The user enters the information.
5. The system verifies information and creates an account.

Alternate Flows

Cancel Registration
1. The user selects the return option.
2. The system returns the user to the main page without the user being logged in and any information entered has been erased.

Invalid Information Entered
1. User clicks submit after entering the information system asked for.
2. The System displays information with appropriate messages to correct invalid information.
3. User re-enters information.

Exceptional Flows

System Failed
1. The System failed to create an account for one or more reasons.
2. The System prompts error messages and asks the user to try again.

Inclusion Use Case	
Extension Use Case	
Business Rules	
Artifacts	Account
Use Case Glossary	Account = Username + Password

Use Case ID	**UC-SYS-002**
Use Case Name	User Login
Requirements	[FFR-2] Login Container [BFR-2] Login
Description	A registered user of the System logs in to the System.
Actor	User
Assumptions	
Constraints	
Priority	High
Pre-Conditions	The system is not logged in and the user have an account
Post-Conditions	**Success** - The user is authenticated and is able to use the system. **Failure** - The user is unable to log in for one or more reasons.

Basic Flow

1. The System prompts the user for a username and password or to register a new account.
2. The user enters his/her username and password.
3. The system validates the entered username and password, making sure that the entered username is a valid username, and that the password matches the username.
4. The user is signed in and is returned to the main page.

Alternate Flows

Invalid Username/Password
1. The user clicks "Login" after entering the information system asked for.
2. The system describes the reasons why the user failed authentication.
3. The system presents the user with suggestions for changes necessary to allow the user to pass authentication.
4. The system prompts the user to re-enter the valid information.
5. The Basic Flow continues where the User enters new information (see step 2 of the Basic Flow).

Exceptional Flows

System Failed
1. System failed to login for one or more reasons.
2. System prompts error messages and asks the user to try again.

Inclusion Use Case	
Extension Use Case	
Business Rules	
Artifacts	User Credential
Use Case Glossary	User Credential = Username + Password + Login Time + Expiration Time

Use Case ID	**UC-SYS-003**
Use Case Name	Export Transcription As A File
Requirements	[FFR-3] Page Container [FFR-4] Block Container
Description	The user exports the transcription as a file from the system.
Actor	User
Assumptions	
Constraints	
Priority	High
Pre-Conditions	There exists at least one unhidden transcription block to export.
Post-Conditions	<u>**Success**</u> - A text file is generated and downloaded to the user's device. <u>**Failure**</u> - No file generated.

Basic Flow

1. The user clicks "Export Transcription".
2. The system prompts the user to choose a location from his/her device to download the file and the format of the file.
3. The user chooses a location and format.
4. The transcription file is generated and downloaded to the user's device.

Alternate Flows

<u>**Cancel Export**</u>
1. The user clicks "Export Transcription".
2. The system prompts the user to choose a location from his/her device to download the file and the format of the file.
3. The user selects the cancel option.
4. The system returns the user to the main page.

<u>**No Available Block**</u>
1. The user clicks "Export Transcription".
2. The system prompts an error message that there is no available block to export.

Exceptional Flows

<u>**System Failed**</u>
1. System failed to export for one or more reasons.
2. System prompts error messages and asks the user to try again.

Inclusion Use Case	
Extension Use Case	
Business Rules	
Artifacts	Transcription File
Use Case Glossary	Transcription File = File with content of all unhidden transcription blocks

Use Case ID	**UC-SYS-004**
Use Case Name	Start a New Project
Requirements	[FFR-3] Page Container
Description	The user starts a new transcription project.
Actor	User
Assumptions	
Constraints	
Priority	High
Pre-Conditions	
Post-Conditions	<u>**Success**</u> - A text file is generated and downloaded to the user's device. <u>**Failure**</u> - No file generated.

Basic Flow

1. The user clicks "Start New Project".
2. The system prompts a warning to notify the user that this action will clear all current working stages and cannot be restored and asks the user whether to confirm the action.
3. The user chooses "Confirm".
4. All previous data, files and transcription blocks, are deleted and the page is initialized.

Alternate Flows

<u>**Cancellation**</u>
1. The user clicks "Start New Project".
2. The system prompts a warning to notify the user that this action will clear all current working stages which cannot be restored and asks the user whether to confirm the action.
3. The user chooses "Cancel".
4. The system returns the user to the main page.

Exceptional Flows

<u>**Start New Project Failed**</u>
1. System failed to start a new project for one or more reasons.
2. System prompts error messages and asks the user to try again.

Inclusion Use Case	
Extension Use Case	
Business Rules	
Artifacts	Account Record
Use Case Glossary	Account Record = Audio Files + Transcription Blocks

6. Traceability Matrix

6.1 Traceability Matrix of Requirements V.S Requirements

Requirements	FFR1	FFR2	FFR3	FFR4	FFR5	FFR6	FFR7	FFR8	FFR9	FFR10
FFR1	--									
FFR2		--								
FFR3			--							
FFR4				--	V		V	V	V	V
FFR5					--					
FFR6						--				
FFR7							--			
FFR8								--		
FFR9									--	
FFR10										--
BFR1	V									
BFR2		V								
BFR3			V	V						
BFR4					V					
BFR5							V	V		
BFR6									V	
BFR7									V	
BFR8										V
BFR9										V

Requirements	BFR1	BFR2	BFR3	BFR4	BFR5	BFR6	BFR7	BFR8	BFR9
FFR1	V								
FFR2		V							
FFR3			V						
FFR4			V						
FFR5				V					
FFR6									
FFR7					V				
FFR8					V				
FFR9						V	V		
FFR10								V	V
BFR1	--								
BFR2		--							
BFR3			--	V	V	V	V	V	V
BFR4				--					
BFR5					--				
BFR6						--			
BFR7							--		
BFR8								--	V
BFR9									--

6.2 Traceability Matrix of Requirements V.S Use Case

Requirements	UC-BM-001	UC-BM-002	UC-AO-001	UC-AO-002	UC-AO-003	UC-AP-001	UC-AD-001
FFR1							
FFR2							
FFR3							
FFR4	V	V			V		
FFR5			V	V			V
FFR6						V	
FFR7			V		V		
FFR8		V					
FFR9							
FFR10							
BFR1							
BFR2							
BFR3	V	V	V	V		V	V
BFR4			V			V	
BFR5							
BFR6							
BFR7							
BFR8					V		
BFR9					V		

Requirements	UC-AT-001	UC-AT-002	UC-AB-001	UC-TR-001	UC-SYS-001	UC-SYS-002	UC-SYS-003
FFR1					v		
FFR2						v	
FFR3							v
FFR4				v			v
FFR5			v				
FFR6							
FFR7							
FFR8							
FFR9				v			
FFR10	v	v					
BFR1					v		
BFR2						v	
BFR3				v			
BFR4							
BFR5							
BFR6				v			
BFR7			v				
BFR8	v	v					
BFR9	v	v					

6.3 Traceability Matrix of Requirements V.S subsystem function

Requirements	Registration Module	Login Module	Block and Page Management Module	Audio Processing Module	Transcript Module	Script-Extended Multifunction Module
FFR1	V					
FFR2		V				
FFR3			V			
FFR4			V			
FFR5				V		
FFR6				V		
FFR7					V	
FFR8					V	
FFR9						V
FFR10						V
BFR1	V					
BFR2		V				
BFR3			V			
BFR4				V		
BFR5					V	
BFR6						V
BFR7						V
BFR8						V
BFR9						V