

# Black Box Testing:

## 1. Creating User Account:

- a. User opens the app and is led to the cover page, User clicks on “Get Started” and is led to the Login UI.

No.	Scenario	Expected output
1	Registering with valid field	Account created, system redirects User to SignBridgeMain UI (Main User Interface of the app)
2	Registering with an empty field (Eg. Password)	No prompt or message, User remains on the Login UI
3	Registering with an existing username	No prompt or message, User remains on the Login UI

No.	Test Input	Expected output	Actual output
1	User inputs: Username: “Test1” Password: “TestPassword”  User clicks on “New User”	System redirects user to SignBridgeMain UI	System redirects User to SignBridgeMain UI
2	User inputs: Username: Test1 Password: “”  User clicks on “New User”	No prompt or message, User remains on the Login UI	No prompt or message, User remains on the Login UI
3	User inputs: Username: “Test1” Password: “TestPassword”  User clicks on “New User”	Prompts Username already exist, User remains on the same UI (code 400)	Prompts Username already exist, User remains on the same UI (code 400)

2. User Login:

- a. User opens the app and is led to the cover page, User clicks on “Get Started” and is led to the Login UI.

No.	Scenario	Expected output
1	User login with a valid Username and Password	Login successful, system redirects User to SignBridgeMain UI
2	Login with an empty field (Eg. Password)	Prompt User to enter Username and Password, User remains on the Login UI
3	Login with invalid Username or Password	Prompts invalid Username or password, User remains on the Login UI

No.	Test Input	Expected output	Actual output
1	User inputs: Username: “Test2” Password: “TestPassword”  User clicks on “Returning User”	Login successful, system redirects User to SignBridgeMain UI	Login successful, system redirects User to SignBridgeMain UI
2	User inputs: Username: “Test2” Password: “”  User clicks on “Returning User”	Prompts User to enter Username and Password, User remains on the Login UI	Prompts User Please enter Username and Password, User remains on the Login UI
3	User inputs: Username: “Test2” Password: “invalid”  User clicks on “Returning User”	Prompts login unsuccessful, Username or password is incorrect, User remains on the Login UI (code 401)	Prompts login unsuccessful, Username or password is incorrect, User remains on the Login UI (code 401)

### 3. Live Translation

- a. User logs in and clicks on “Live Translation”.

No.	Scenario	Expected output
1	User turns on their camera to prepare for live translation	System access the User’s live camera feed, and reflects it on the UI
2	User turns off their camera as they’re done with live translation	System de-access the User’s live camera feed
3	User Starts the translation process	System takes in the camera feed and processes the sign language, converting and prompting the equivalent text
4	User wants to change the language setting of the app	System redirects the User to Language selection UI
5	User wants to goes back to SignBridgeMain UI	System redirects the User to SignBridgeMain UI

No.	Test Input	Expected output	Actual output
1	User clicks on “turnOnCamera”	System access the User’s live camera feed, and reflects it on the UI	System access the User’s live camera feed, and reflects it on the UI
2	User clicks on “turnOffCamera”	System de-access the User’s live camera feed	System de-access the User’s live camera feed
3	User clicks on “Start Translation”  User proceeds to motion sign language	System takes in the camera feed and processes the sign language, converting and prompting the equivalent text in real-time	System takes in the camera feed and processes the sign language, converting and prompting the equivalent text in real-time
4	User clicks on “currentLanguage”	System redirects the User to Language selection UI	System redirects the User to Language selection UI
5	User clicks on “backToHome”	System redirects the User to SignBridgeMain UI	System redirects the User to SignBridgeMain UI

#### 4. Pre-Recorded Video Upload

- a. User logs in and clicks on “Pre-Recorded Video Upload”.


No.	Scenario	Expected output
1	User uploads a valid pre-recorded video to translate from sign language to text	Signs are translate and displayed
2	User uploads a invalid pre-recorded video to translate from sign language to text	Failed to fetch
3	User wants to goes back to SignBridgeMain UI	System redirects the User to SignBridgeMain UI

No.	Test Input	Expected output	Actual output
1	User clicks on “Select Video” and uploads a valid MP4 recording.  User clicks on “Translate Video”	Signs are translate and displayed	Signs are translate and displayed
2	User clicks on “Select Video” and uploads a invalid file.  User clicks on “Translate Video”	Error: Failed to fetch	Error: Failed to fetch
3	User clicks on “Back”	System redirects the User to SignBridgeMain UI	System redirects the User to SignBridgeMain UI

## 5. Text-to-Sign

a. User logs in and clicks on “Text-to-Sign”.

No.	Scenario	Expected output
1	User Inputs a valid string and translates it to Sign Language	The valid string is translated to Sign Language
2	User Inputs an invalid string and translates it to Sign Language	No prompt or message, User remains on the same UI
3	User Inputs an empty string and translates it to Sign Language	No prompt or message, User remains on the same UI
4	User wants to goes back to SignBridgeMain UI	System redirects the User to SignBridgeMain UI

No.	Test Input	Expected output	Actual output
1	User inputs: “Hello I love you”  User clicks on “ui.translate”	Equivalent Sign Language for the text “Hello I love you”.	
2	User inputs: “12345”  User clicks on “ui.translate”	No prompt or message, User remains on the same UI	No prompt or message, User remains on the same UI
3	User inputs: “”  User clicks on “ui.translate”	No prompt or message, User remains on the same UI	No prompt or message, User remains on the same UI
4	User clicks on “ui.back”	System redirects the User to SignBridgeMain UI	System redirects the User to SignBridgeMain UI

6. Language selection

- a. User logs in and clicks on “Language selection”.

No.	Scenario	Expected output
1	User wants to convert the text within the app to Chinese	All text in the app is converted to Chinese
2	User wants to convert the text within the app to English	All text in the app is converted to English
3	User wants to goes back to SignBridgeMain UI	System redirects the User to SignBridgeMain UI

No.	Test Input	Expected output	Actual output
1	User clicks on “Chinese”	All text within the app is converted into Simplified Chinese Characters	All text within the app is converted into Simplified Chinese Characters
2	User clicks on “English”	All text within the app is converted into English Characters	All text within the app is converted into English Characters
3	User clicks on “backToHome”	System redirects the User to SignBridgeMain UI	System redirects the User to SignBridgeMain UI

## 7. Sidebar

### a. User logs in and clicks on the Sidebar from any of the UIs

No.	Scenario	Expected output
1	User wants to go to the SignBridgeMain UI	System redirects the User to SignBridgeMain UI
2	User wants to go to the Live Translation UI	System redirects the User to Live Translation UI
3	User wants to go to the Pre-Recorded Video Upload UI	System redirects the User to Pre-Recorded Video Upload UI
4	User wants to go to the Text-to-Sign UI	System redirects the User to Text-to-Sign UI
5	User wants to go to the Language Selection UI	System redirects the User to Language Selection UI

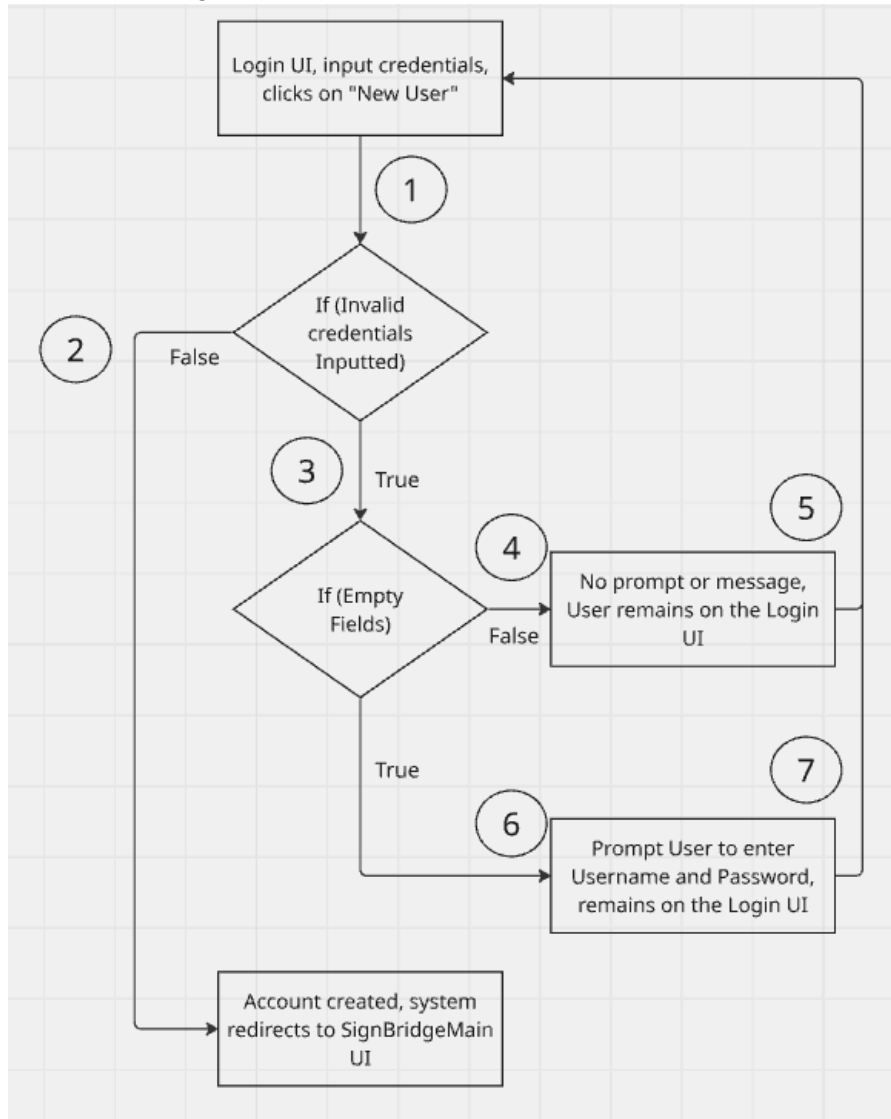
No.	Test Input	Expected output	Actual output
1	User clicks on "SignBridgeMain"	System redirects the User to SignBridgeMain UI, regardless of which UI they were on previously	System redirects the User to SignBridgeMain UI, regardless of which UI they were on previously
2	User clicks on "LiveTrans"	System redirects the User to Live Translation UI, regardless of which UI they were on previously	System redirects the User to Live Translation UI, regardless of which UI they were on previously
3	User click on "Pre-Recorded Video Upload"	System redirects the User to the Pre-Recorded Video UploadUI, regardless of which UI they were on previously	System redirects the User to the Pre-Recorded Video UploadUI, regardless of which UI they were on previously
4	User clicks on "TextToSign"	System redirects the User to Text-to-Sign UI, regardless of which UI they were on previously	System redirects the User to Text-to-Sign UI, regardless of which UI they were on previously
5	User clicks on "LanguageSelect"	System redirects the User to Language Selection UI, regardless of which UI they were on previously	System redirects the User to Language Selection UI, regardless of which UI they were on previously





# White Box Testing:

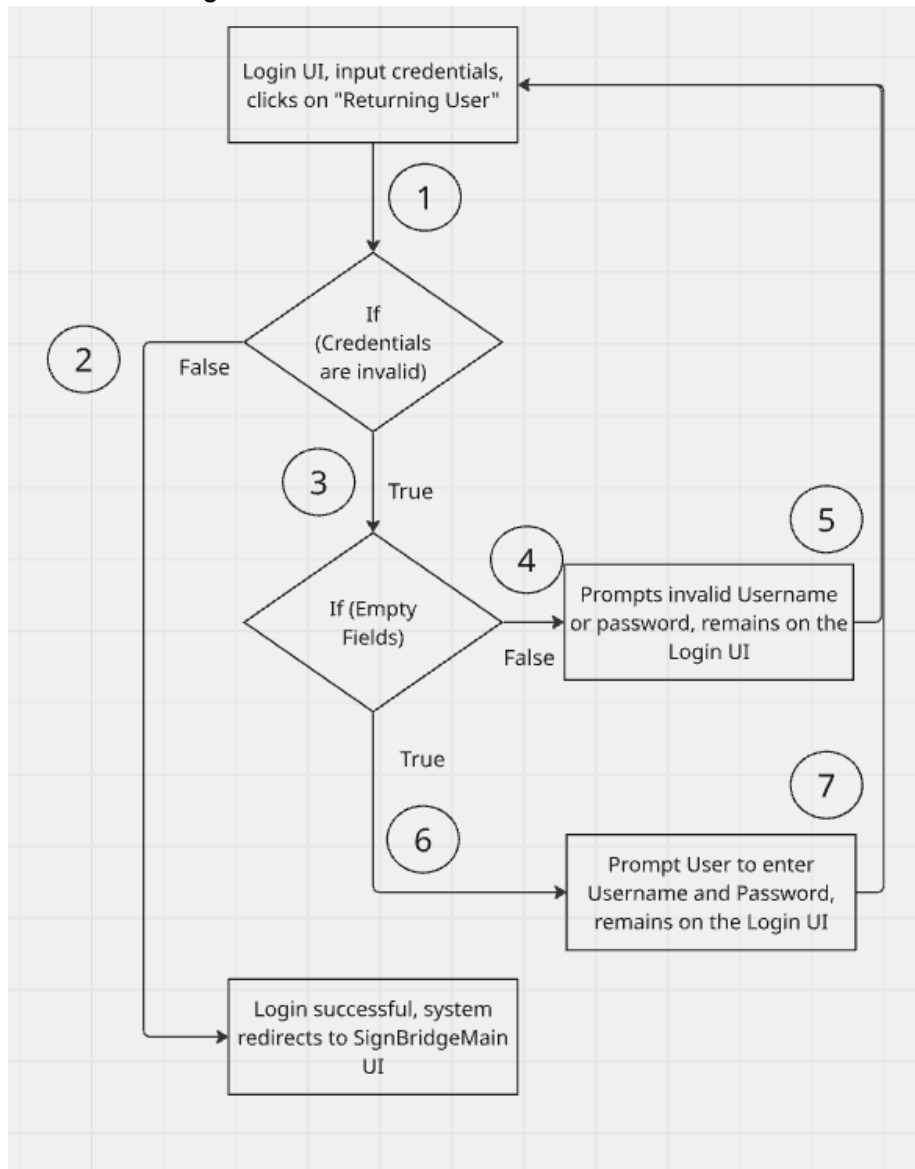
## 1. Creating User Account:



Formula	Cyclomatic Complexity Calculation
Binary decisions  + 1	2 + 1 = 3
edges  -  nodes  + 2	7 - 6 + 2 = 3

Basis Path Testing			
Username	Password	Valid Details	Path Taken
"Test1"	"TestPassword"	Yes	1→2
"Test1"	"	No (Empty password)	1→3→6→7
"Test1"	"TestPassword"	No (Existing user)	1→3→4→5

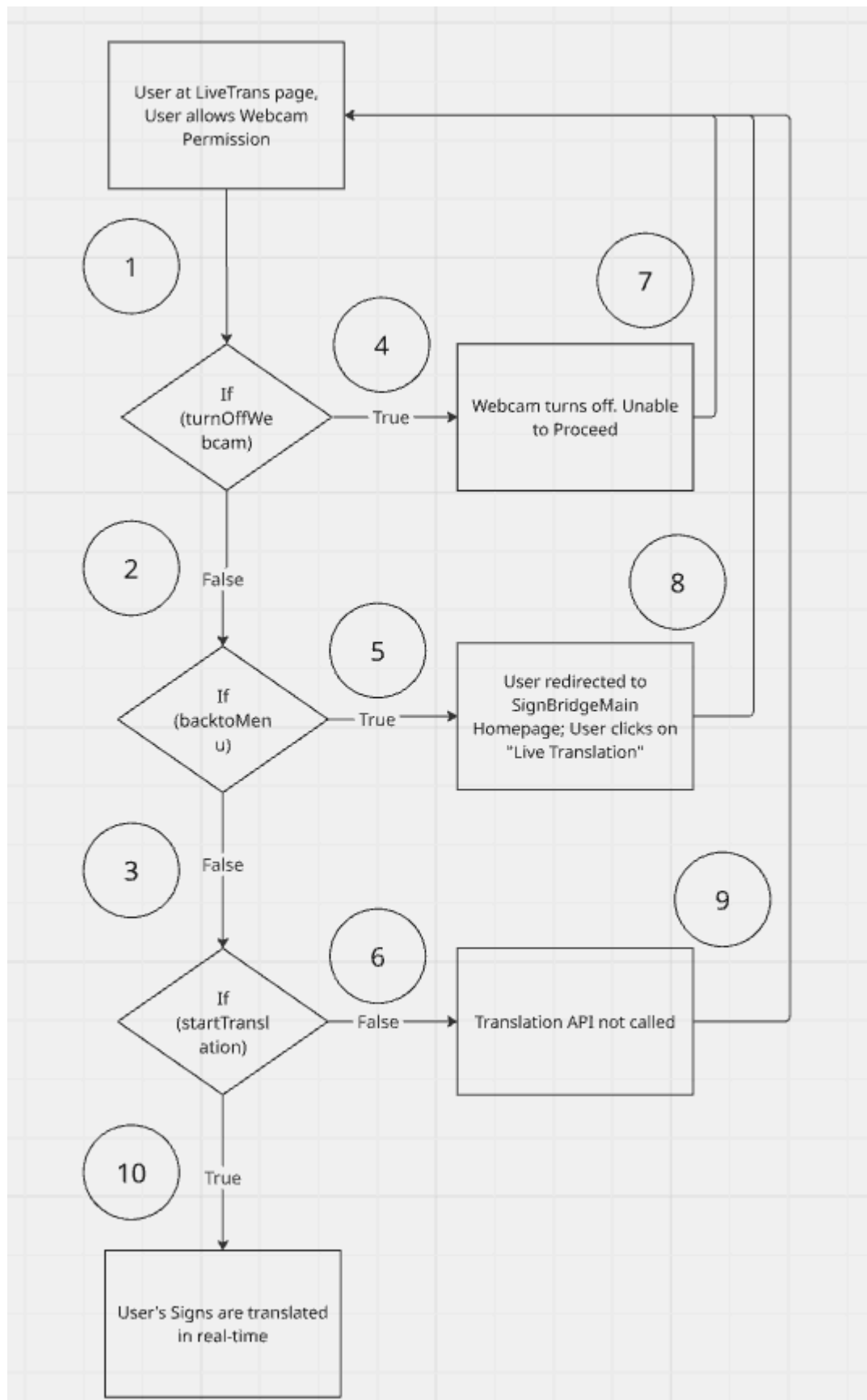
## 2. User Login:



Formula	Cyclomatic Complexity Calculation
Binary decisions  + 1	2 + 1 = 3
edges  -  nodes  + 2	7 - 6 + 2 = 3

Basis Path Testing			
Username	Password	Valid Details	Path Taken
"Test2"	"TestPassword"	Yes	1→2
"Test2"	""	No (Empty Password)	1→3→6→7
"Test2"	"invalid"	No (Invalid Password)	1→3→4→5

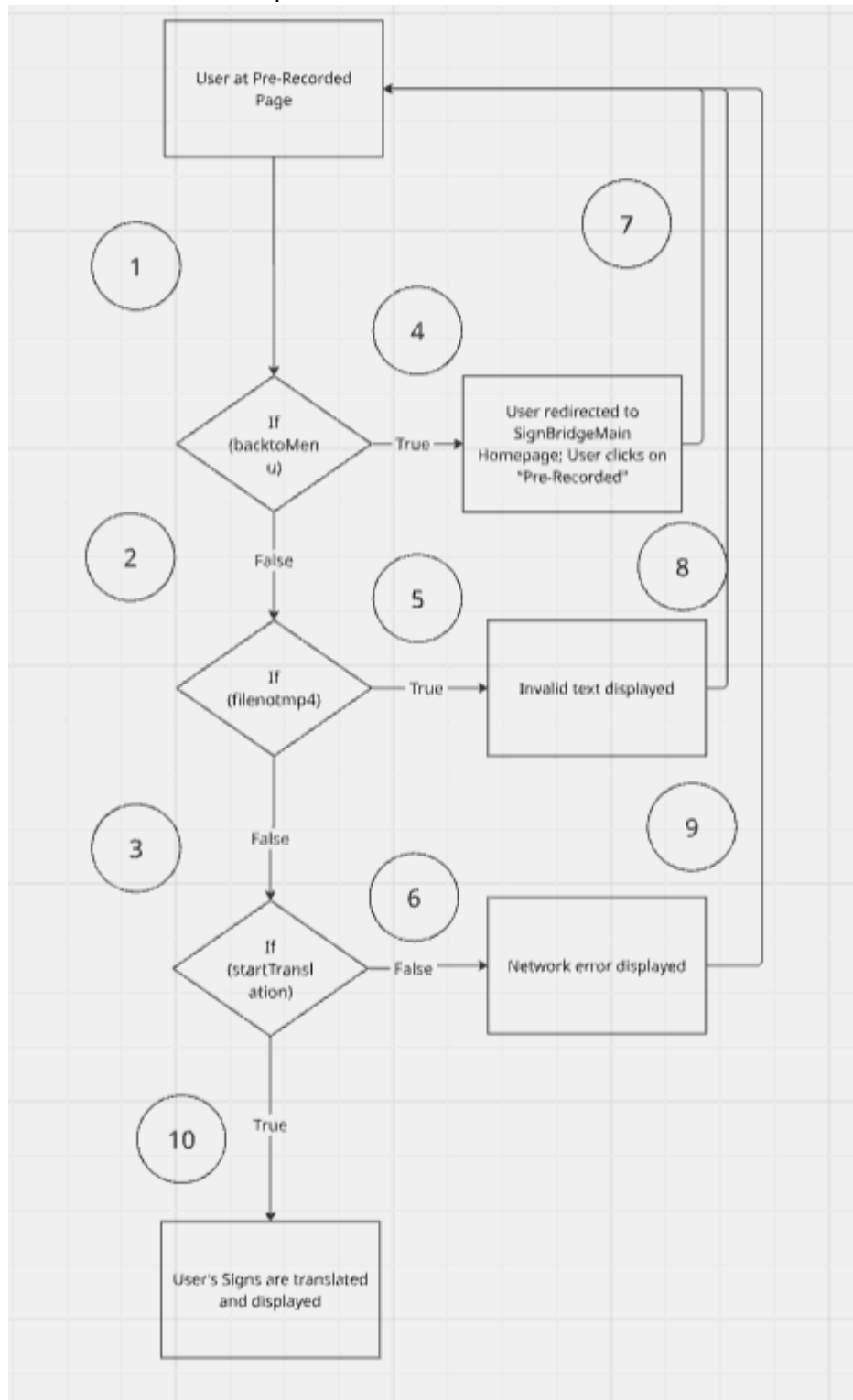
### 3. Live Translation:



Formula	Cyclomatic Complexity Calculation
Binary decisions  + 1	3 + 1 = 4
edges  -  nodes  + 2	10 - 8 + 2 = 4

Basis Path Testing			
turnOffWebcam	startTranslation	backToMenu	Path Taken
True	-	-	1→4→7
False	False	-	1→2→5→8
False	True	True	1→2→3→6→9
False	True	False	1→2→3→10

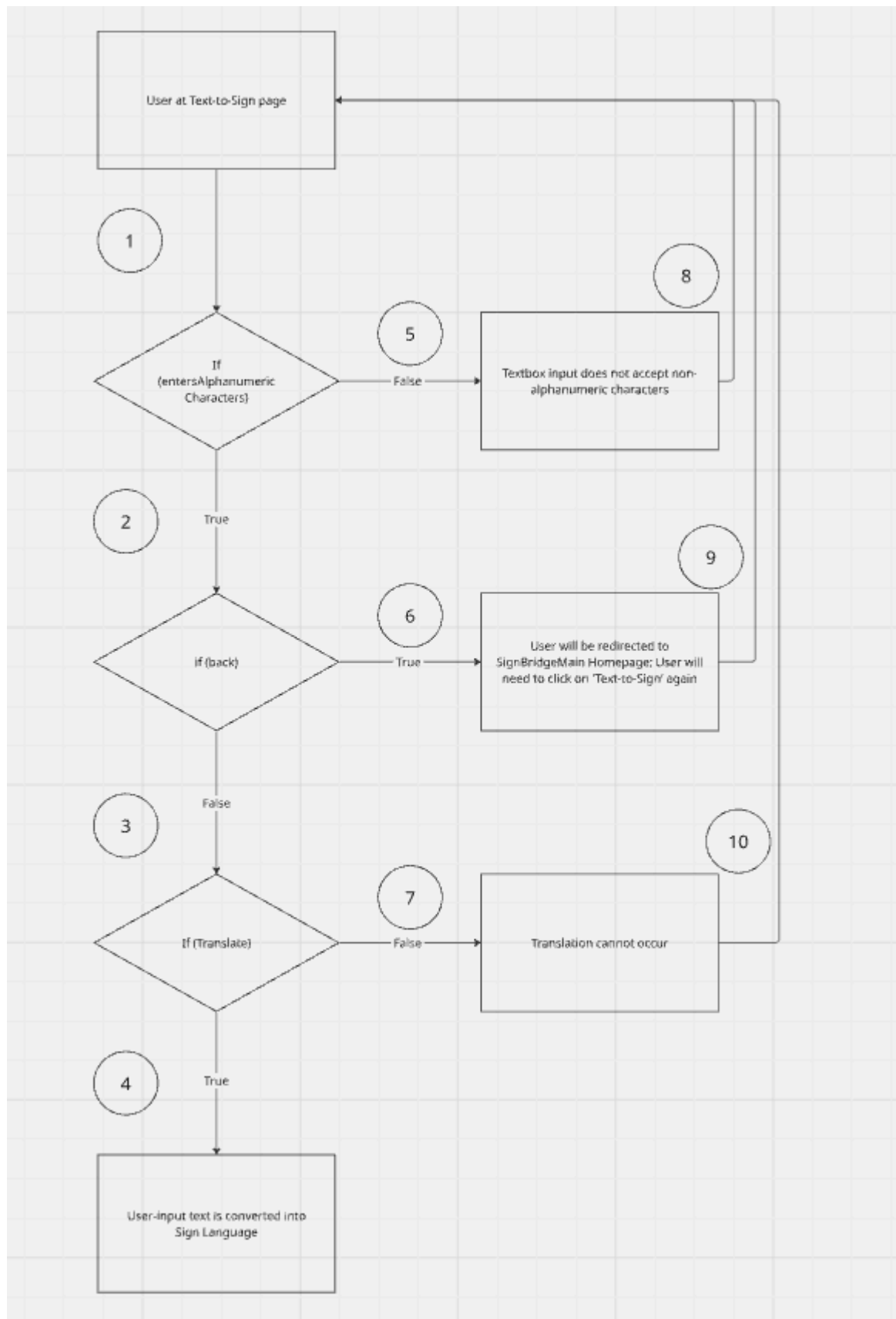
#### 4. Pre-Recorded Video Upload



Formula	Cyclomatic Complexity Calculation
Binary decisions  + 1	3 + 1 = 4
edges  -  nodes  + 2	10 - 8 + 2 = 4

Basis Path Testing			
fileuploadnotmp4	startTranslation	backToMenu	Path Taken
True	-	True	1→4→7
True	-	False	1→2→5→8
False	False	True	1→2→3→6→9
False	True	False	1→2→3→10

## 5. Text-to-Sign:

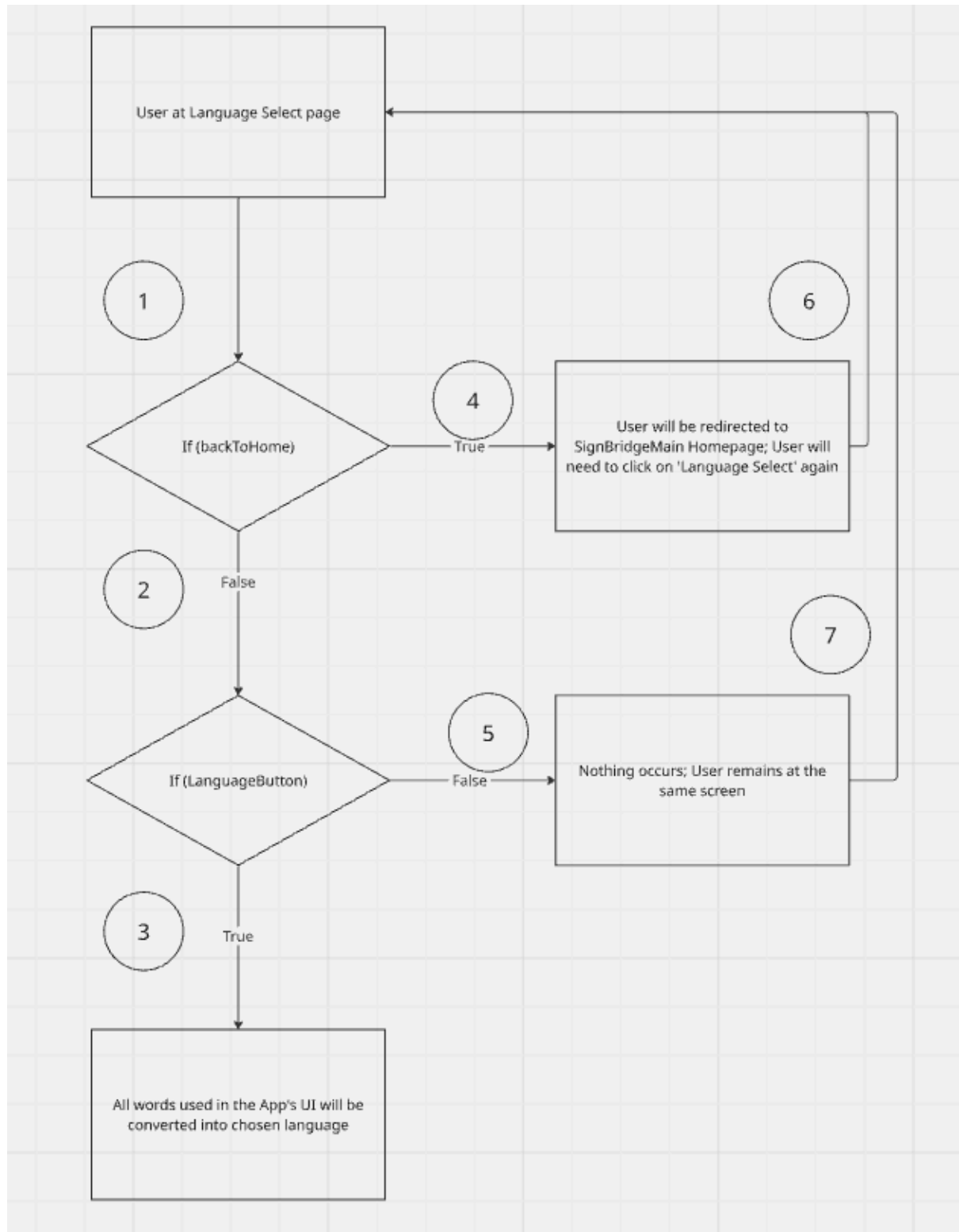


Formula	Cyclomatic Complexity Calculation
Binary decisions  + 1	3 + 1 = 4
edges  -  nodes  + 2	10 - 8 + 2 = 4

Basis Path Testing			
entersAlphanumeric Characters	back	Translate	Path Taken
False	-	-	1→5→8
True	True	-	1→2→6→9
True	False	False	1→2→3→7→10
True	False	True	1→2→3→4



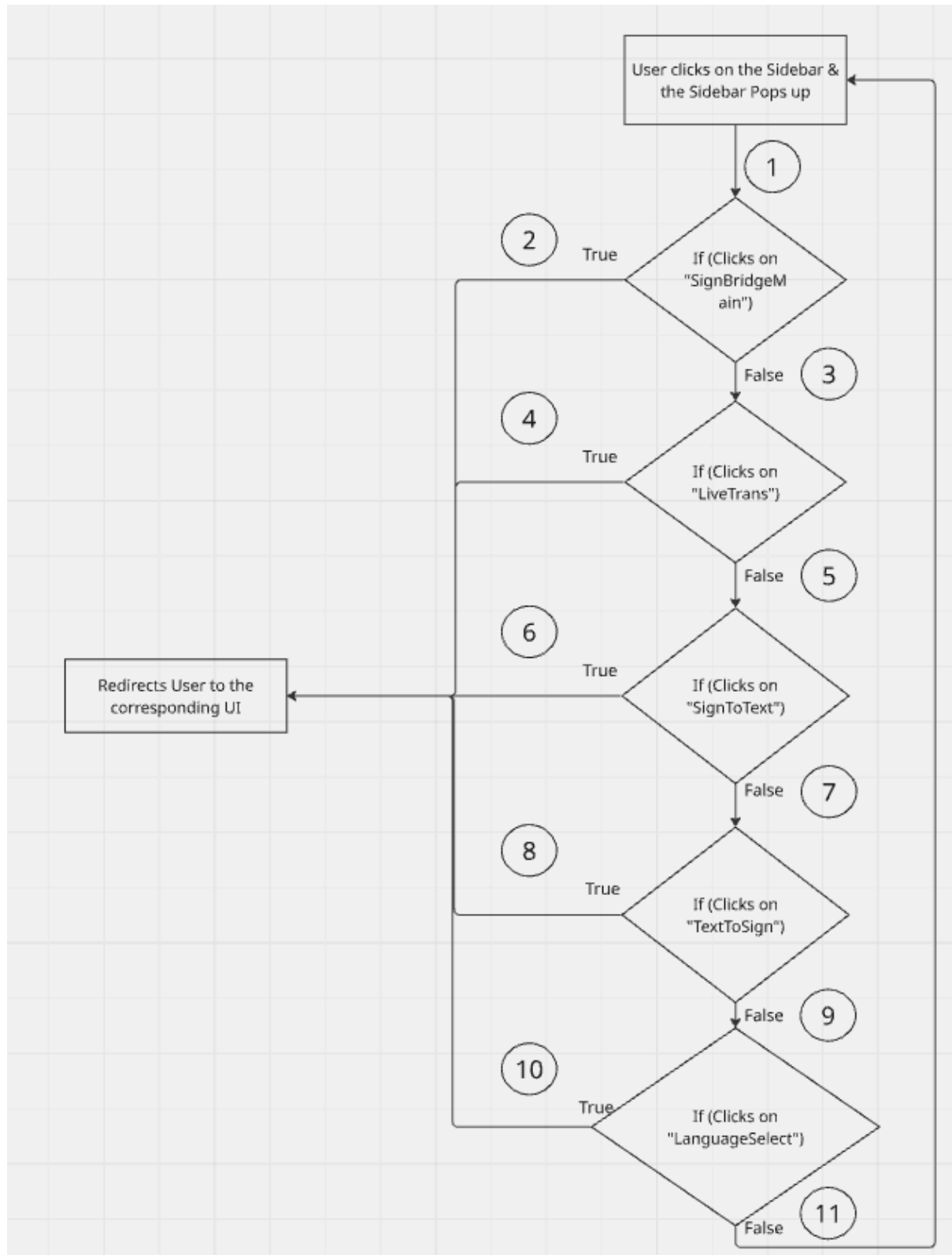
## 6. Language selection



Formula	Cyclomatic Complexity Calculation
Binary decisions  + 1	2 + 1 = 3
edges  -  nodes  + 2	7 - 6 + 2 = 3

Basis Path Testing		
backToHome	LanguageButton	Path Taken
True	-	1→4→6
False	False	1→2→5→7
False	True	1→2→3

## 7. Sidebar



Formula	Cyclomatic Complexity Calculation
$ \text{Binary decisions}  + 1$	$5 + 1 = 6$
$ \text{edges}  -  \text{nodes}  + 2$	$11 - 7 + 2 = 6$

Basis Path Testing	
User Clicks on	Path Taken
"SignBridgeMain"	1→2
"LiveTrans"	1→3→4
"SignToText"	1→3→5→6
"TextToSign"	1→3→3→7->8
"LanguageSelect"	1→3→3→7→9→10
Nothing	1→3→3→7→9→11