Software Design Document
for
TalkBox
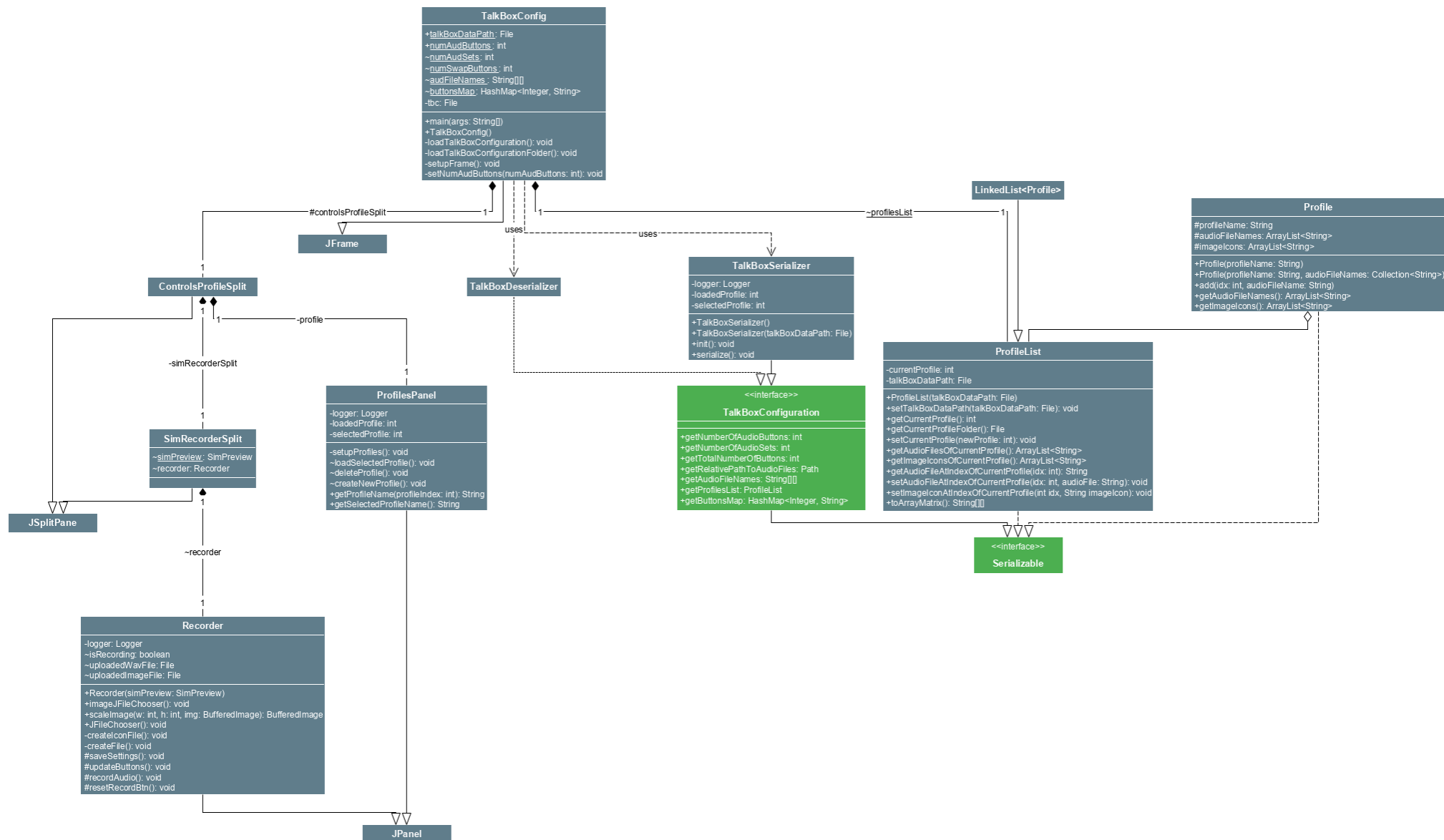
Group 15
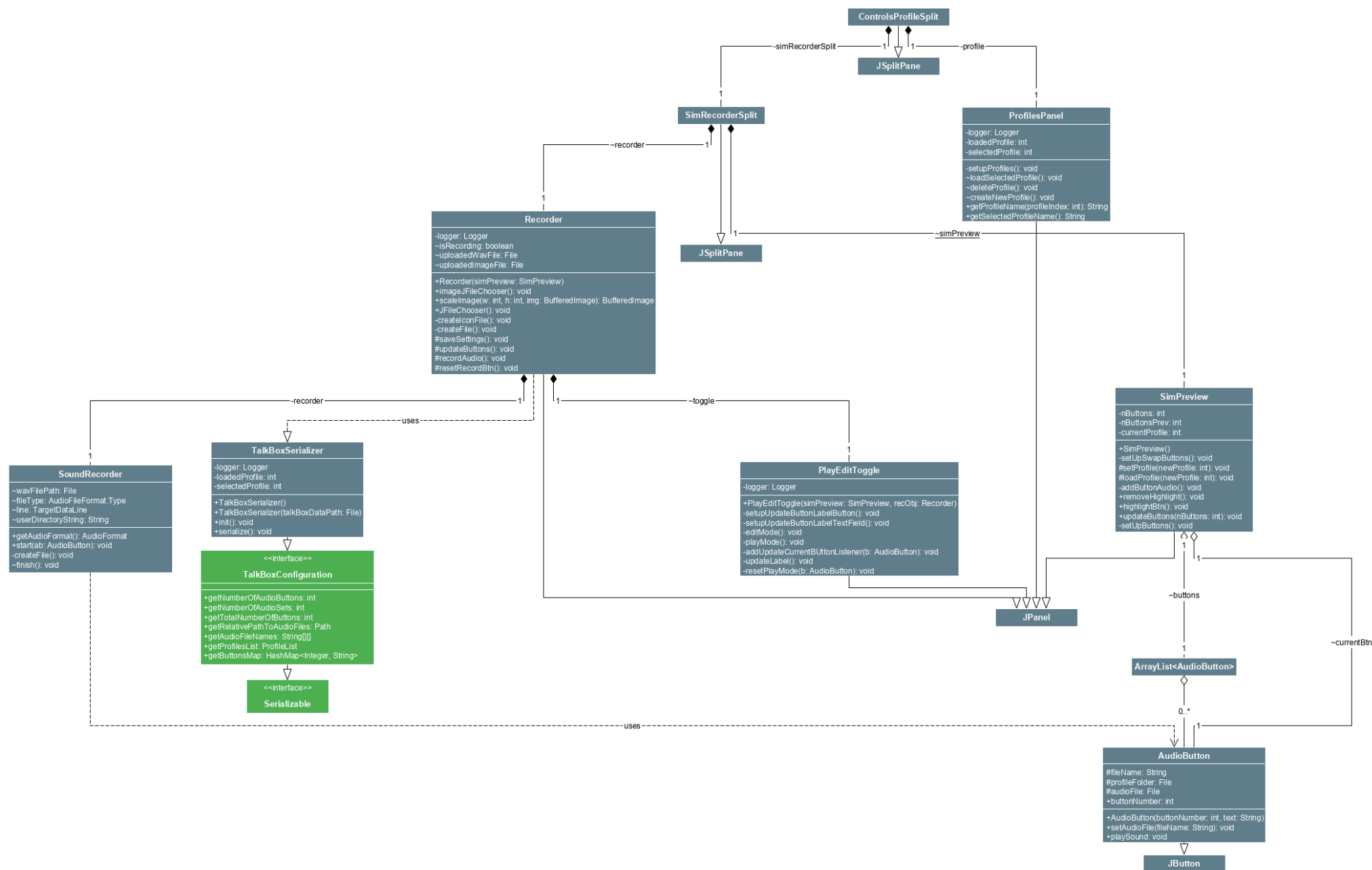
York University
EECS2311 Software Development Project

24. March 2019
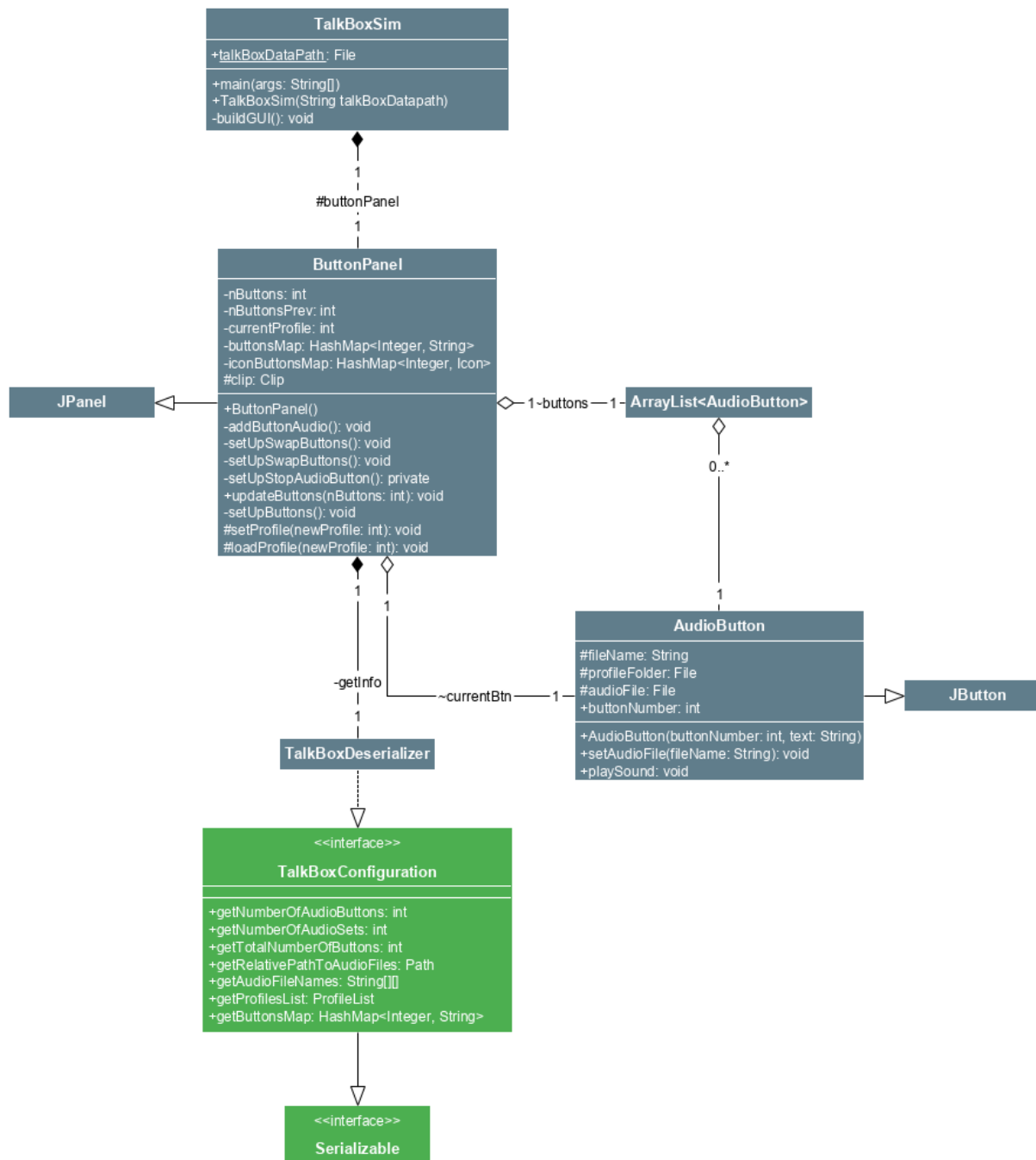
Contents

Class Diagrams
TalkBoxConfig High Level

TalkBoxConfig

+talkBoxDataPath: File
+numAudButtons : int
~numAudSets : int
~numSwapButtons : int
~audFileNames : String[][]
~buttonsMap: HashMap<Integer, String>
-tbc: File

+main(args: String[])
+TalkBoxConfig()
-loadTalkBoxConfiguration(): void
-loadTalkBoxConfigurationFolder(): void
-setupFrame(): void
-setNumAudButtons(numAudButtons: int): void

LinkedList<Profile>

Profile

#profileName: String
#audioFileNames: ArrayList<String>
#imageIcons: ArrayList<String>

+Profile(profileName: String)
+Profile(profileName: String, audioFileNames: Collection<String>)
+add(idx: int, audioFileName: String)
+getAudioFileNames(): ArrayList<String>
+getImageIcons(): ArrayList<String>

#controlsProfileSplit

JFrame

uses

uses

~profilesList

ControlsProfileSplit

-profile

TalkBoxDeserializer

TalkBoxSerializer

-logger: Logger
-loadedProfile: int
-selectedProfile: int

+TalkBoxSerializer()
+TalkBoxSerializer(talkBoxDataPath: File)
+init(): void
+serialize(): void

-simRecorderSplit

SimRecorderSplit

~simPreview : SimPreview
~recorder: Recorder

ProfilesPanel

-logger: Logger
-loadedProfile: int
-selectedProfile: int

-setupProfiles(): void
-loadSelectedProfile(): void
~deleteProfile(): void
~createNewProfile(): void
+getProfileName(profileIndex: int): String
+getSelectedProfileName(): String

**<<interface>>
TalkBoxConfiguration**

+getNumberOfAudioButtons: int
+getNumberOfAudioSets: int
+getTotalNumberOfButtons: int
+getRelativePathToAudioFiles: Path
+getAudioFileNames: String[][]
+getProfilesList: ProfileList
+getButtonsMap: HashMap<Integer, String>

ProfileList

-currentProfile: int
-talkBoxDataPath: File

+ProfileList(talkBoxDataPath: File)
+setTalkBoxDataPath(talkBoxDataPath: File): void
+getCurrentProfile(): int
+getCurrentProfileFolder(): File
+setCurrentProfile(newProfile: int): void
+getAudioFilesOfCurrentProfile(): ArrayList<String>
+getImageIconsOfCurrentProfile(): ArrayList<String>
+getAudioFileAtIndexOfCurrentProfile(idx: int): String
+setAudioFileAtIndexOfCurrentProfile(idx: int, audioFile: String): void
+setImageIconAtIndexOfCurrentProfile(int idx, String imageIcon): void
+toArrayMatrix(): String[][]

**<<interface>>
Serializable**

JSplitPane

~recorder

Recorder

-logger: Logger
~isRecording: boolean
~uploadedWavFile: File
~uploadedImageFile: File

+Recorder(simPreview: SimPreview)
+imageJFileChooser(): void
+scaleImage(w: int, h: int, img: BufferedImage): BufferedImage
+JFileChooser(): void
-createIconFile(): void
-createFile(): void
#saveSettings(): void
#updateButtons(): void
#recordAudio(): void
#resetRecordBtn(): void

JPanel

TalkBoxConfig Low Level

ControlsProfileSplit

JSplitPane

-simRecorderSplit — 1 1 1 -profile

SimRecorderSplit

~recorder — 1

ProfilesPanel
-logger: Logger
-loadedProfile: int
-selectedProfile: int

-setupProfiles(): void
~loadSelectedProfile(): void
~deleteProfile(): void
~createNewProfile(): void
+getProfileName(profileIndex: int): String
+getSelectedProfileName(): String

JSplitPane

Recorder
-logger: Logger
~isRecording: boolean
~uploadedWavFile: File
~uploadedImageFile: File

+Recorder(simPreview: SimPreview)
+imageJFileChooser(): void
+scaleImage(w: int, h: int, img: BufferedImage): BufferedImage
+JFileChooser(): void
-createIconFile(): void
-createFile(): void
#saveSettings(): void
#updateButtons(): void
#recordAudio(): void
#resetRecordBtn(): void

~simPreview

SimPreview
-nButtons: int
-nButtonsPrev: int
-currentProfile: int

+SimPreview()
-setUpSwapButtons(): void
#setProfile(newProfile: int): void
#loadProfile(newProfile: int): void
-addButtonAudio(): void
+removeHighlight(): void
+highlightBtn(): void
+updateButtons(nButtons: int): void
-setUpButtons(): void

-recorder — 1 1 ~toggle
uses

SoundRecorder
~wavFilePath: File
~fileType: AudioFileFormat.Type
~line: TargetDataLine
~userDirectoryString: String

+getAudioFormat(): AudioFormat
+start(ab: AudioButton): void
-createFile(): void
~finish(): void

TalkBoxSerializer
-logger: Logger
-loadedProfile: int
-selectedProfile: int

+TalkBoxSerializer()
+TalkBoxSerializer(talkBoxDataPath: File)
+init(): void
+serialize(): void

PlayEditToggle
-logger: Logger

+PlayEditToggle(simPreview: SimPreview, recObj: Recorder)
-setupUpdateButtonLabelButton(): void
-setupUpdateButtonLabelTextField(): void
-editMode(): void
-playMode(): void
-addUpdateCurrentButtonListener(b: AudioButton): void
-updateLabel(): void
-resetPlayMode(b: AudioButton): void

<<interface>>
TalkBoxConfiguration
+getNumberOfAudioButtons: int
+getNumberOfAudioSets: int
+getTotalNumberOfButtons: int
+getRelativePathToAudioFiles: Path
+getAudioFileNames: String[][]
+getProfilesList: ProfileList
+getButtonsMap: HashMap<Integer, String>

<<interface>>
Serializable

JPanel

~buttons

ArrayList<AudioButton>

~currentBtn

uses

0..*

AudioButton
#fileName: String
#profileFolder: File
#audioFile: File
+buttonNumber: int

+AudioButton(buttonNumber: int, text: String)
+setAudioFile(fileName: String): void
+playSound: void

JButton

TalkBoxSim

TalkBoxSim

+*talkBoxDataPath*: File

+main(args: String[])
+TalkBoxSim(String talkBoxDatapath)
-buildGUI(): void

1

#buttonPanel

1

ButtonPanel

-nButtons: int
-nButtonsPrev: int
-currentProfile: int
-buttonsMap: HashMap<Integer, String>
-iconButtonsMap: HashMap<Integer, Icon>
#clip: Clip

+ButtonPanel()
-addButtonAudio(): void
-setUpSwapButtons(): void
-setUpSwapButtons(): void
-setUpStopAudioButton(): private
+updateButtons(nButtons: int): void
-setUpButtons(): void
#setProfile(newProfile: int): void
#loadProfile(newProfile: int): void

JPanel

ArrayList<AudioButton>

1~buttons   1

0..*

1

-getInfo

1

~currentBtn   1

AudioButton

#fileName: String
#profileFolder: File
#audioFile: File
+buttonNumber: int

+AudioButton(buttonNumber: int, text: String)
+setAudioFile(fileName: String): void
+playSound: void

JButton

1

TalkBoxDeserializer

<<interface>>
TalkBoxConfiguration

+getNumberOfAudioButtons: int
+getNumberOfAudioSets: int
+getTotalNumberOfButtons: int
+getRelativePathToAudioFiles: Path
+getAudioFileNames: String[][]
+getProfilesList: ProfileList
+getButtonsMap: HashMap<Integer, String>

<<interface>>
Serializable

TBCLog

TBCLog
#logFiles: File[] #currentLogFile: int #talkBoxDatapath: String #fileChooser : JFileChooser
+main(args: String[]): void TBCLog(talkBoxDataPath: String) ~loadLogFile(loadedLog: File): void ~readCurrentLoge(target: String): void ~readLogs(): void -filterLog(e: DocumentEvent): void ~searchLog(regex: String): void

Sequence Diagrams

TalkBox Configuration

Record Audio:
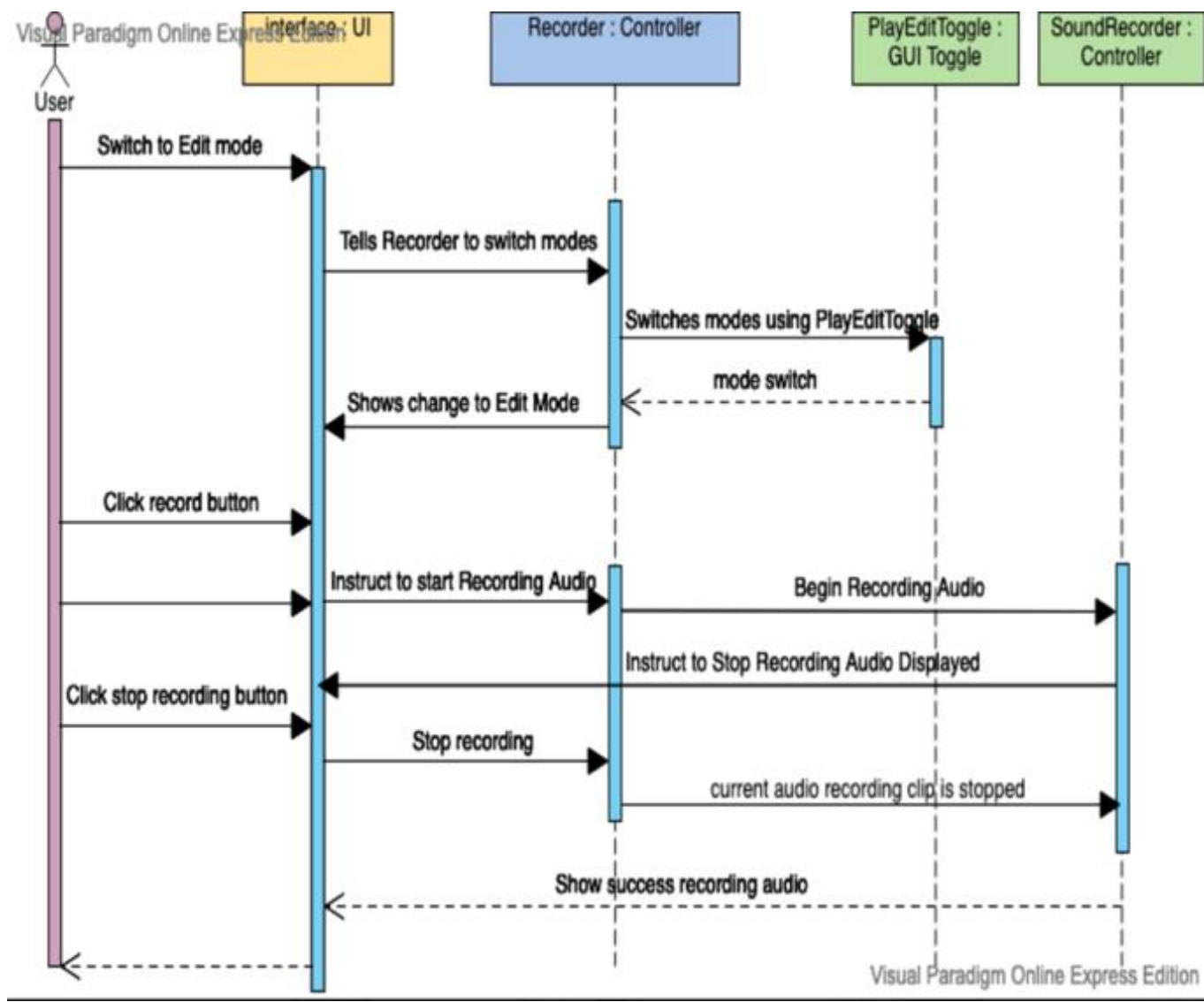
Playback Audio from a Button:
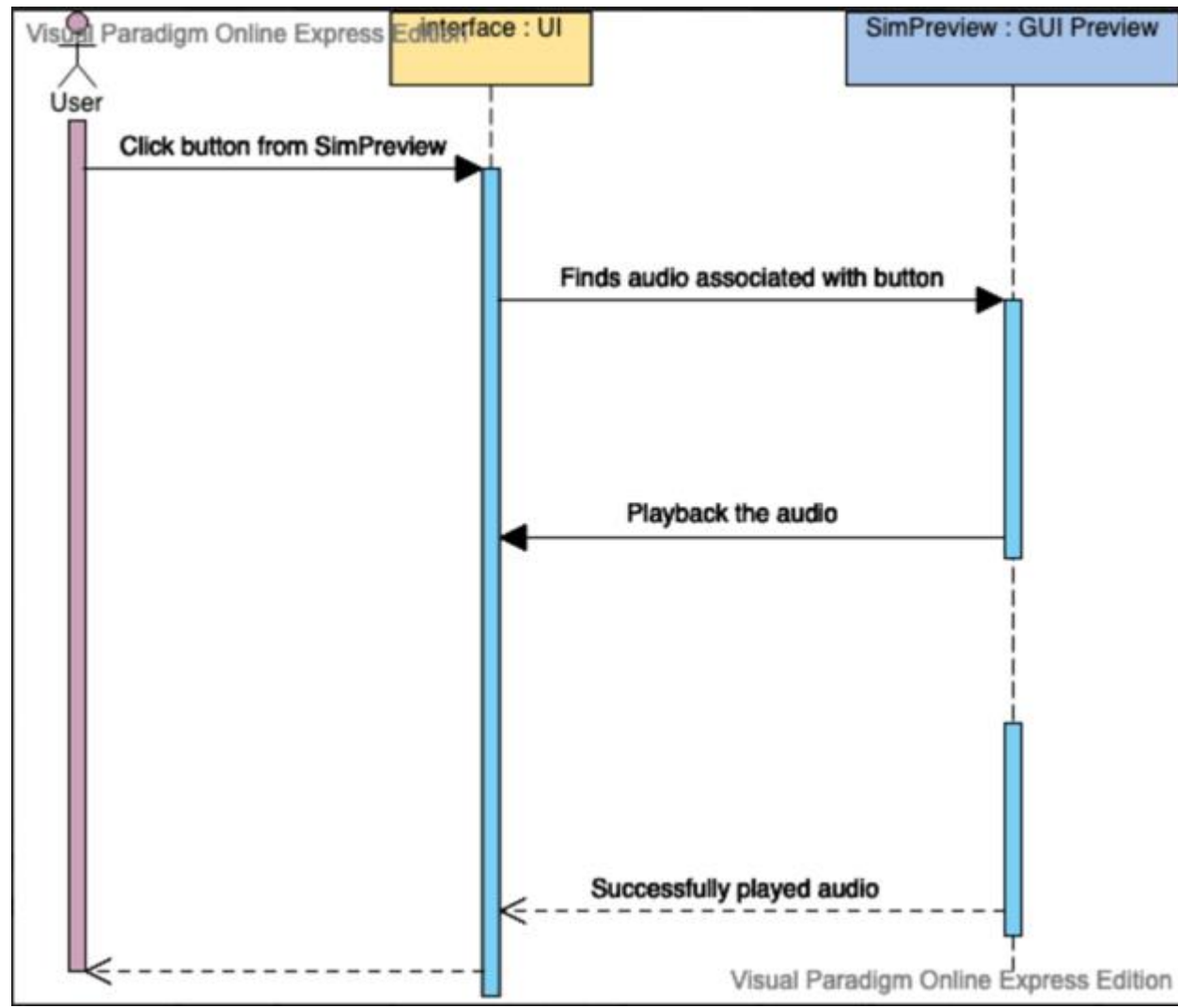
Update Number of Buttons:
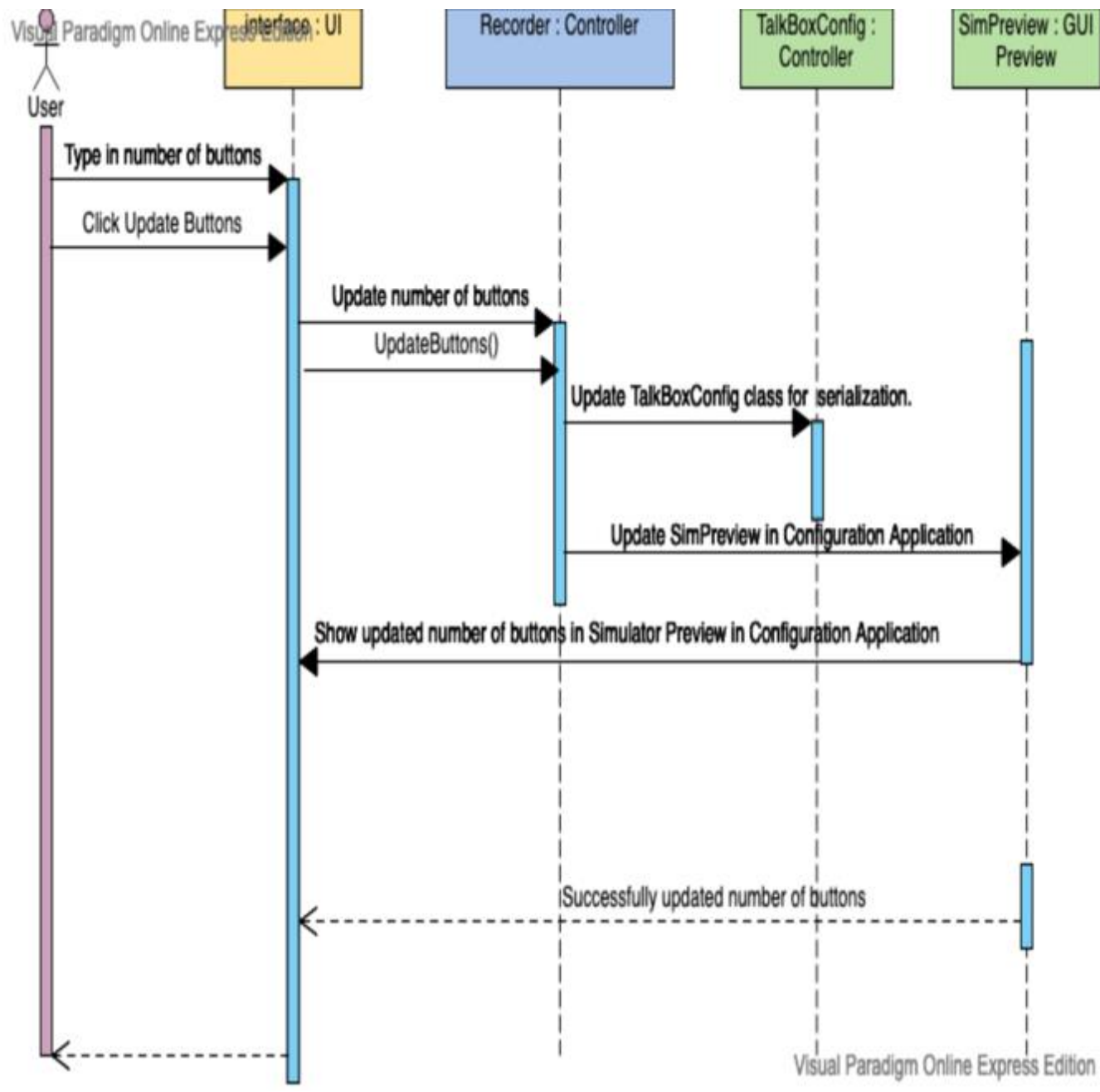
Update Button Label:
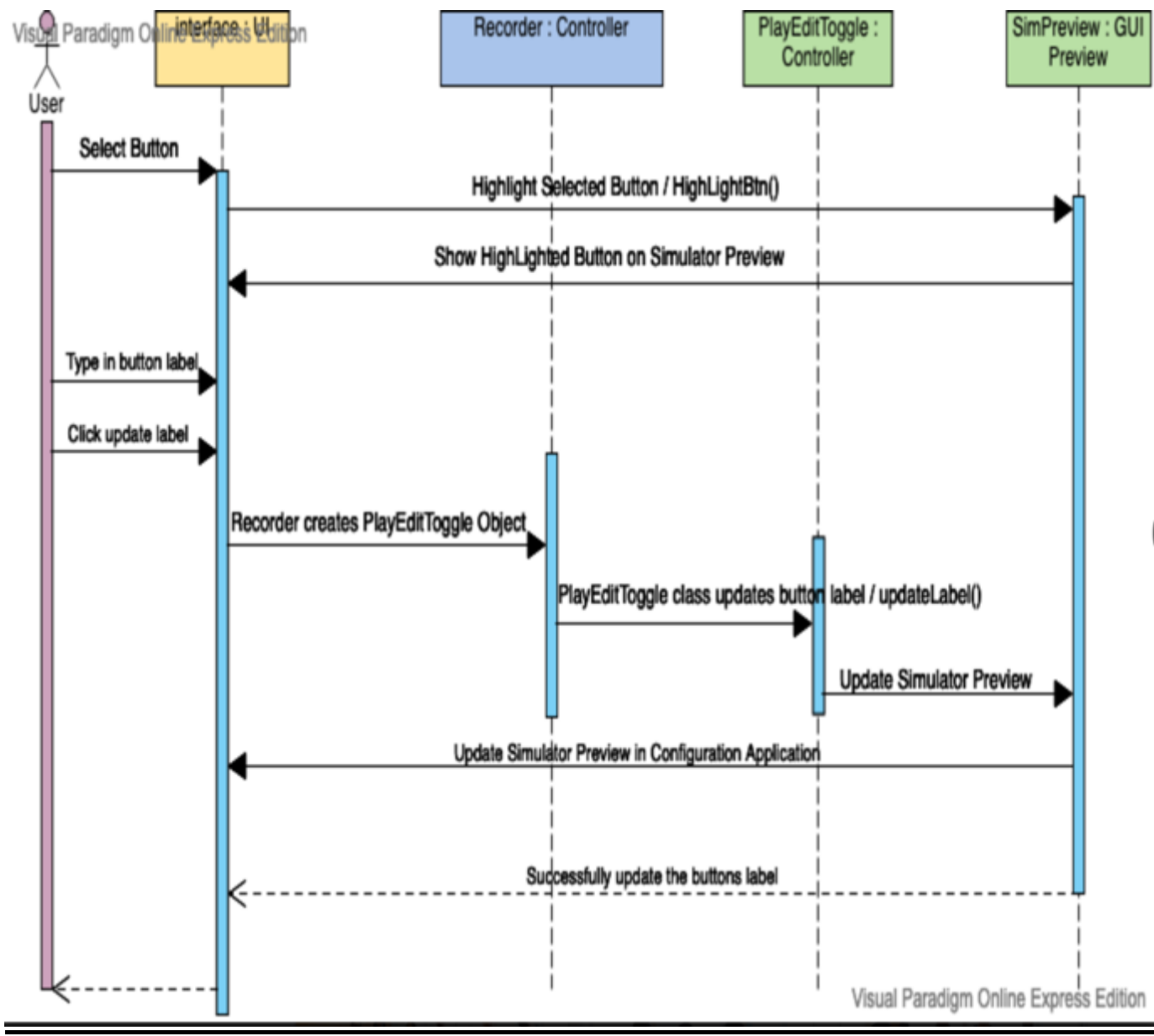
Upload Audio to Buttons:
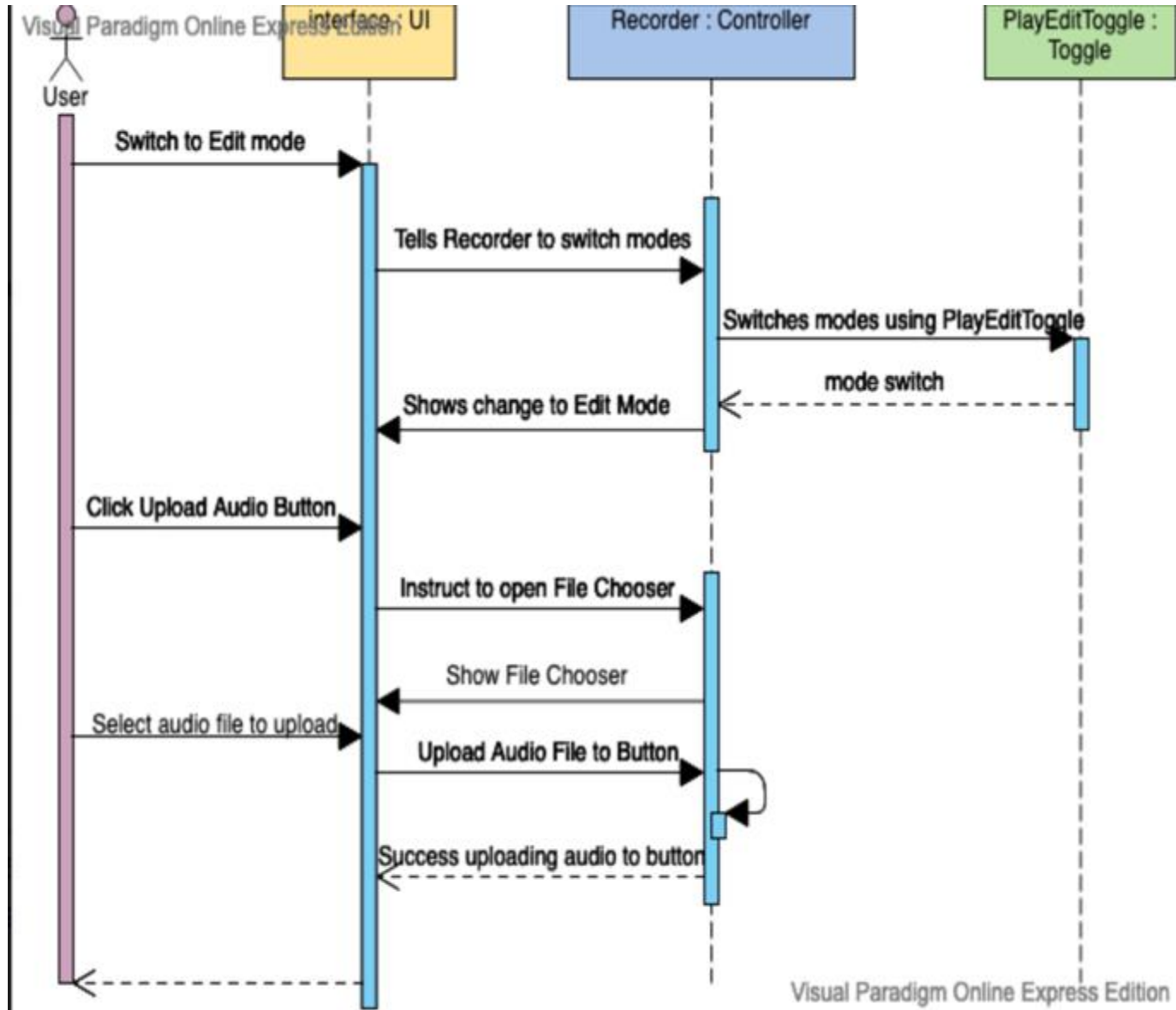
Upload Images to Buttons:
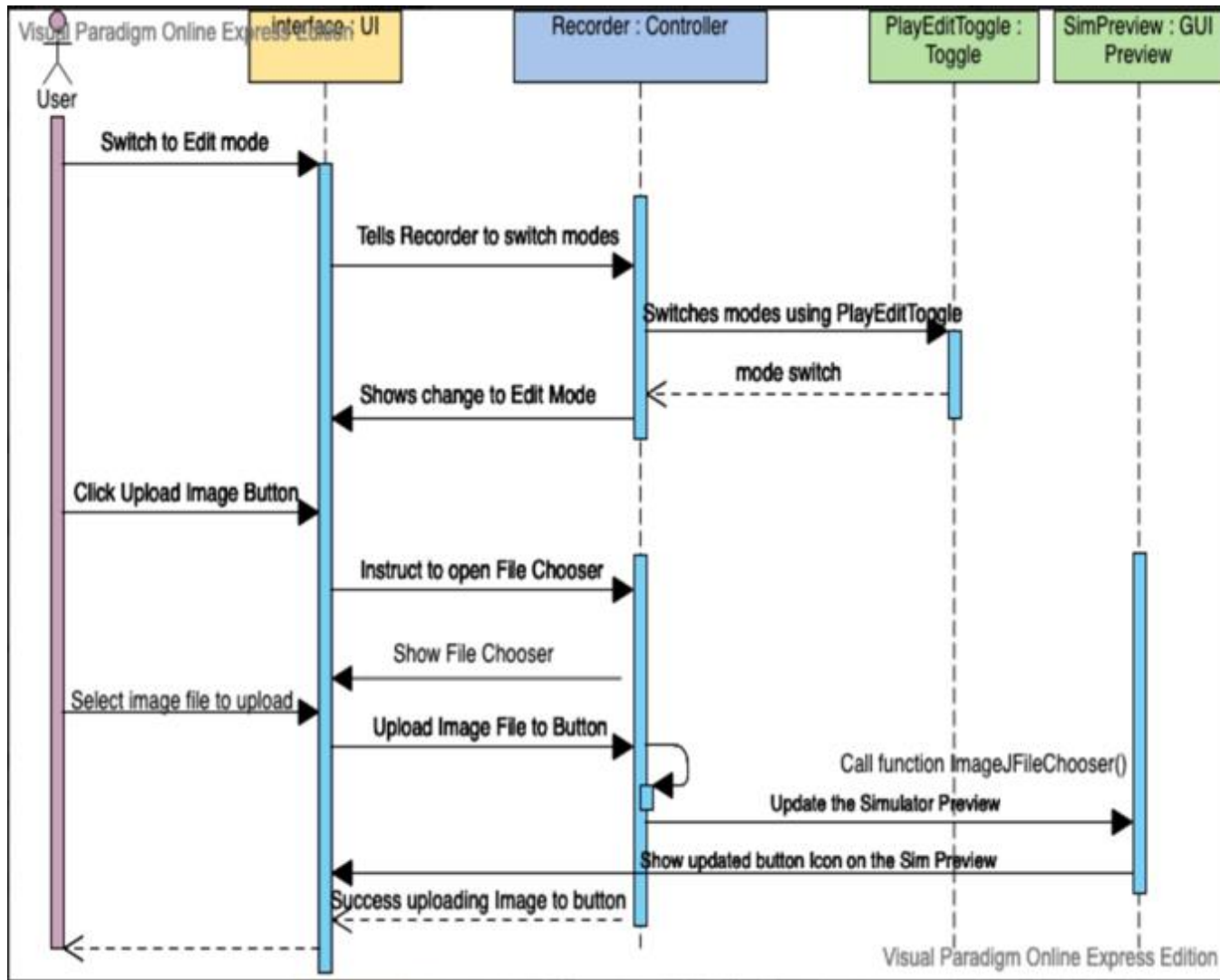
Swap Profiles:
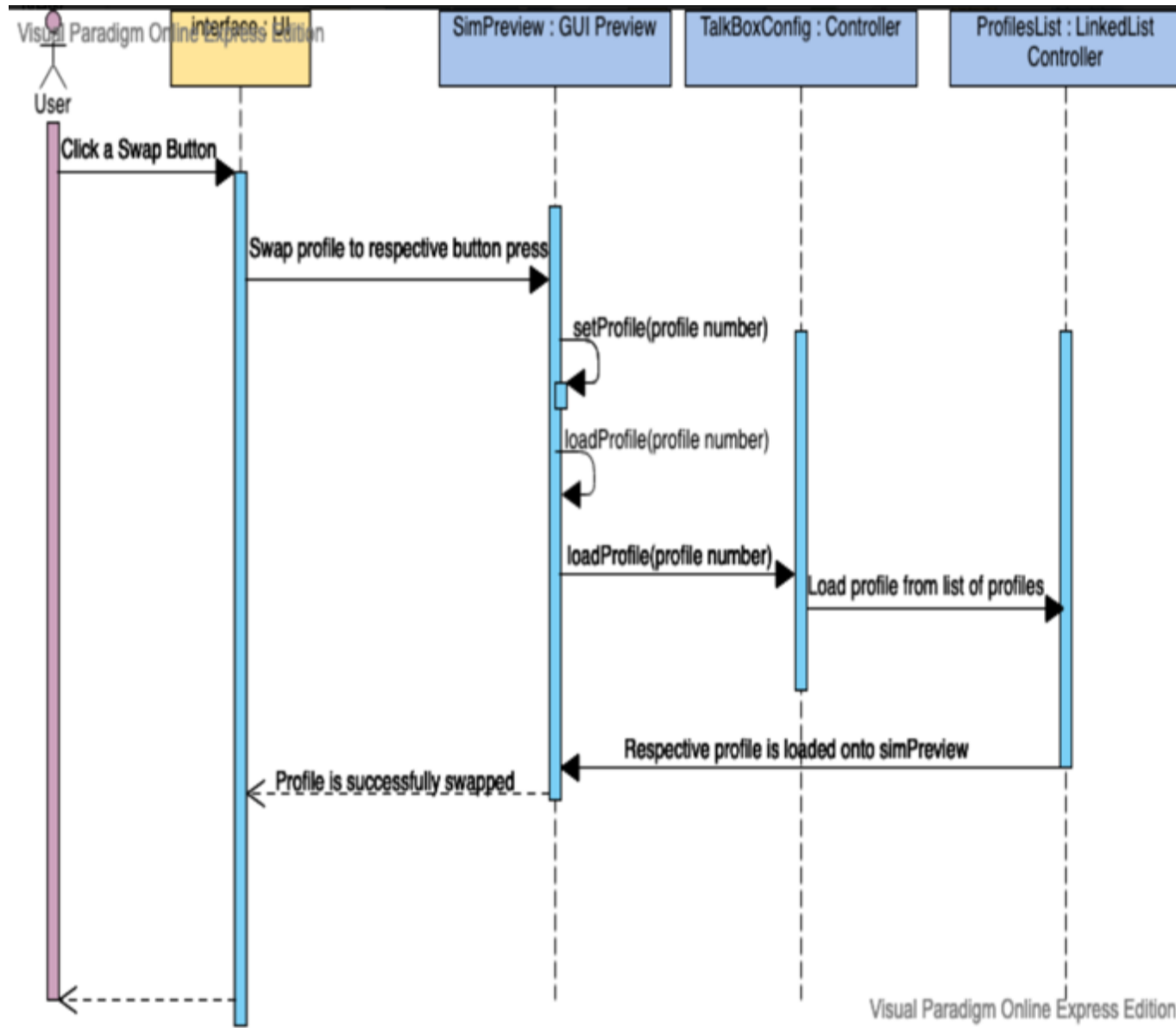
Save Settings / Serialize Changes:
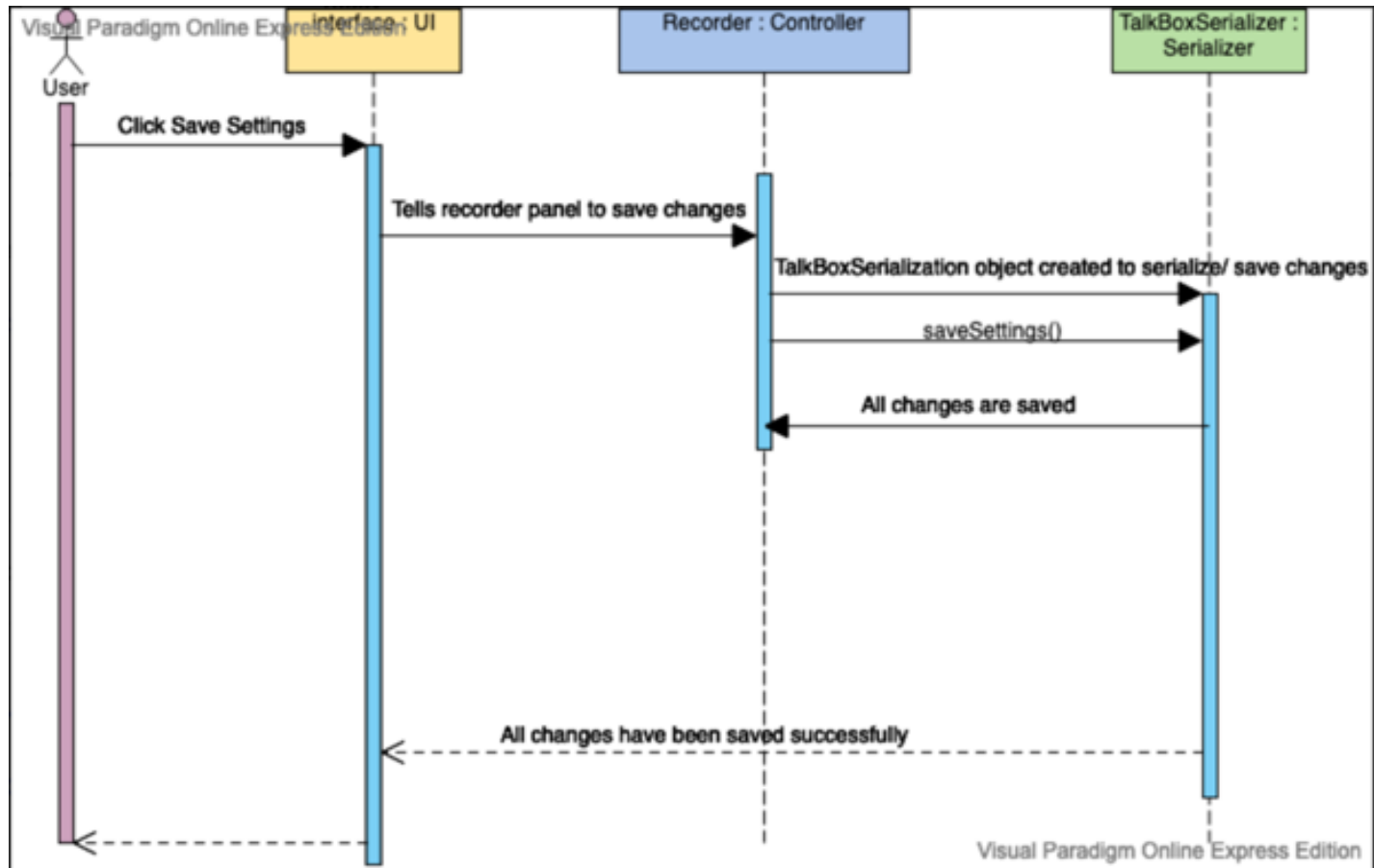
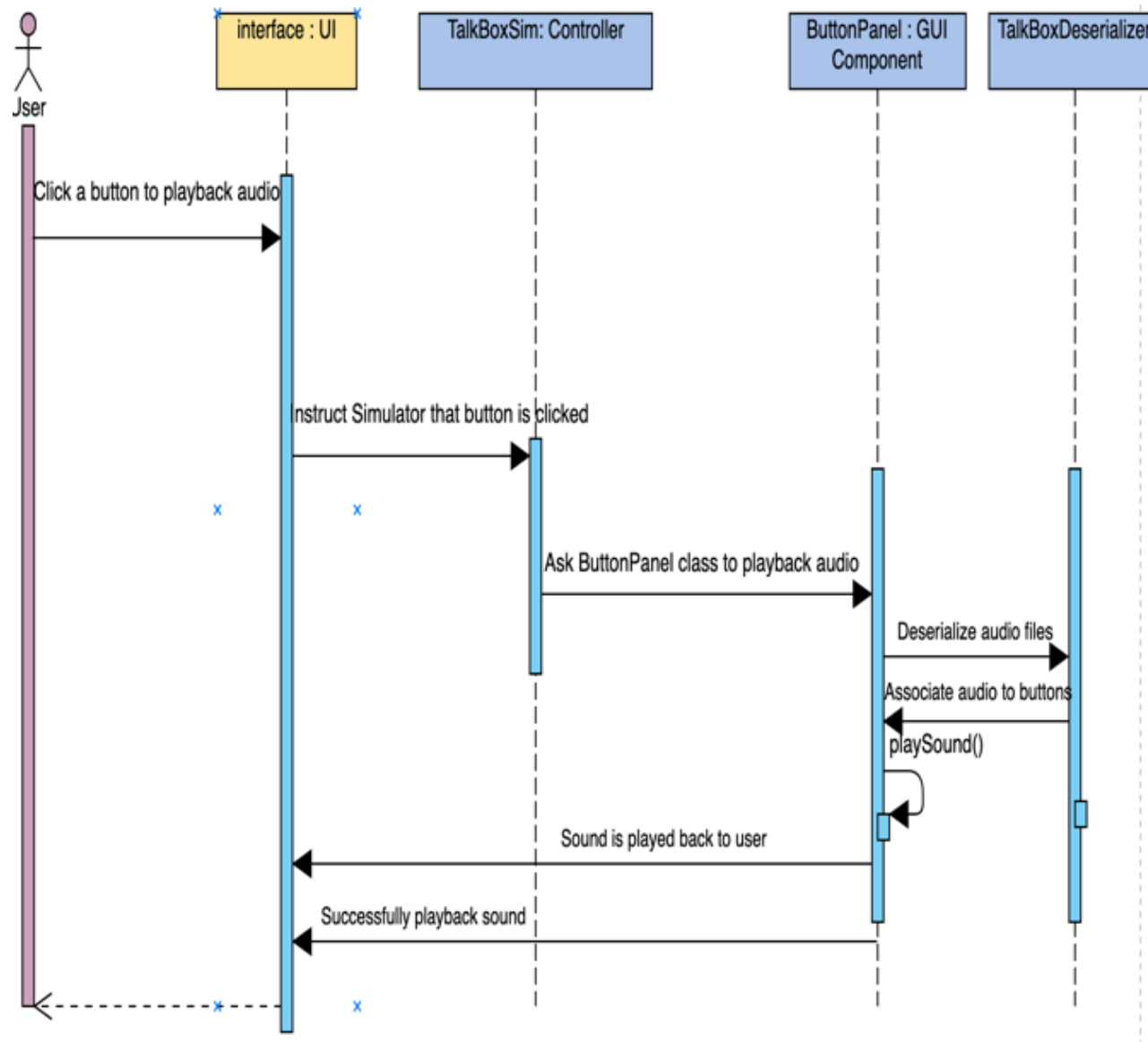Launch TalkBox Simulator Application:
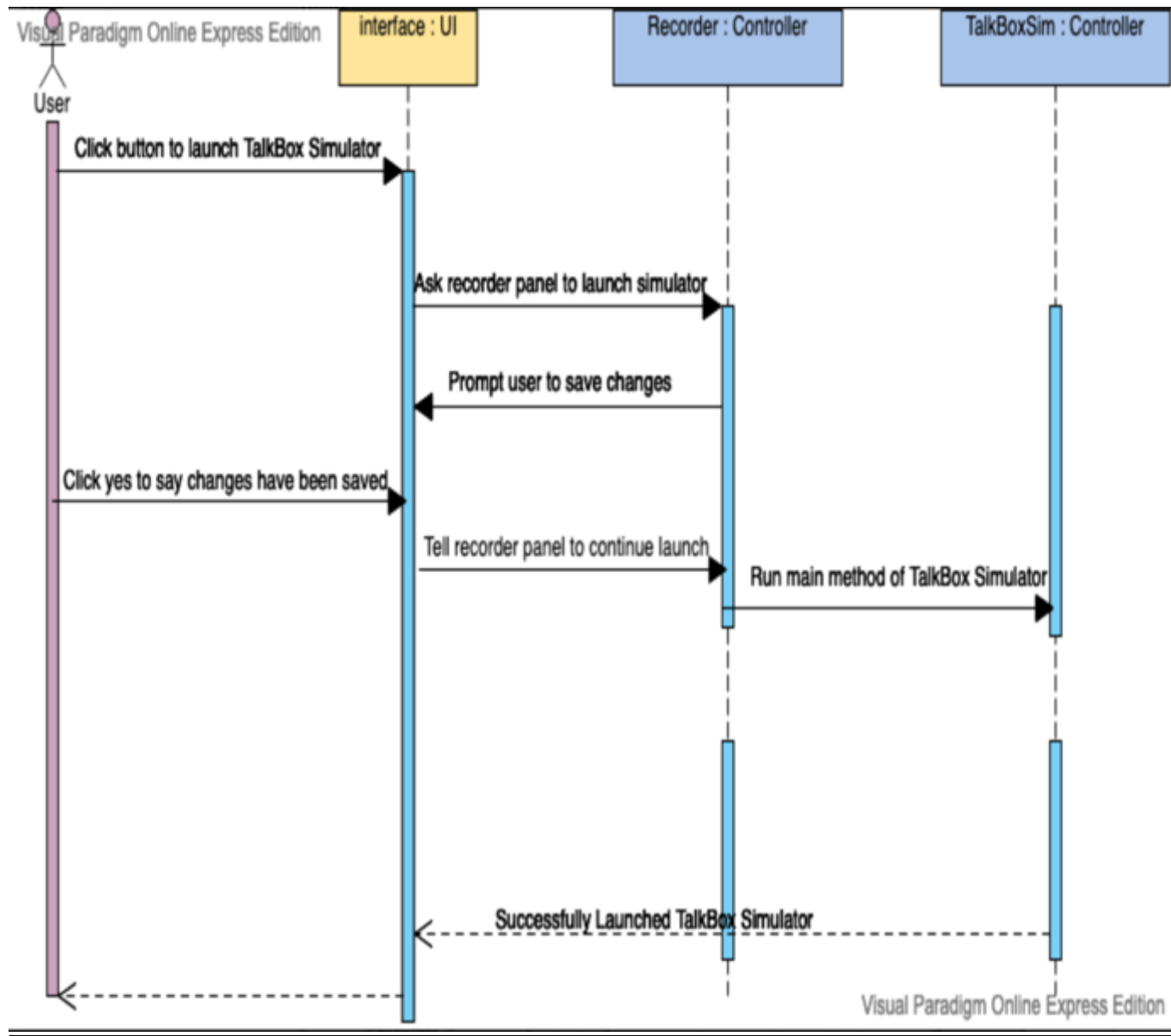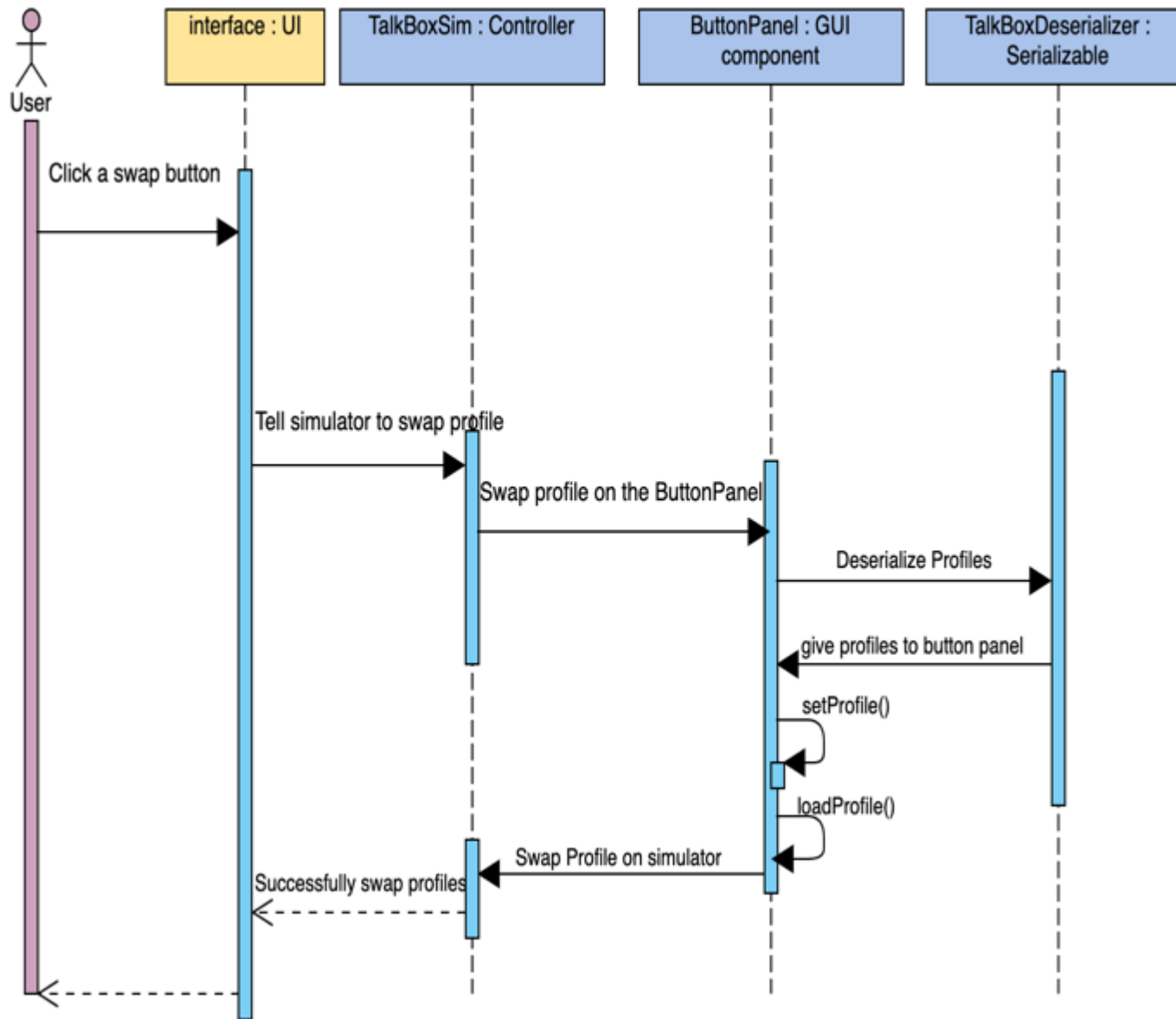
Load/Delete/New Profile:
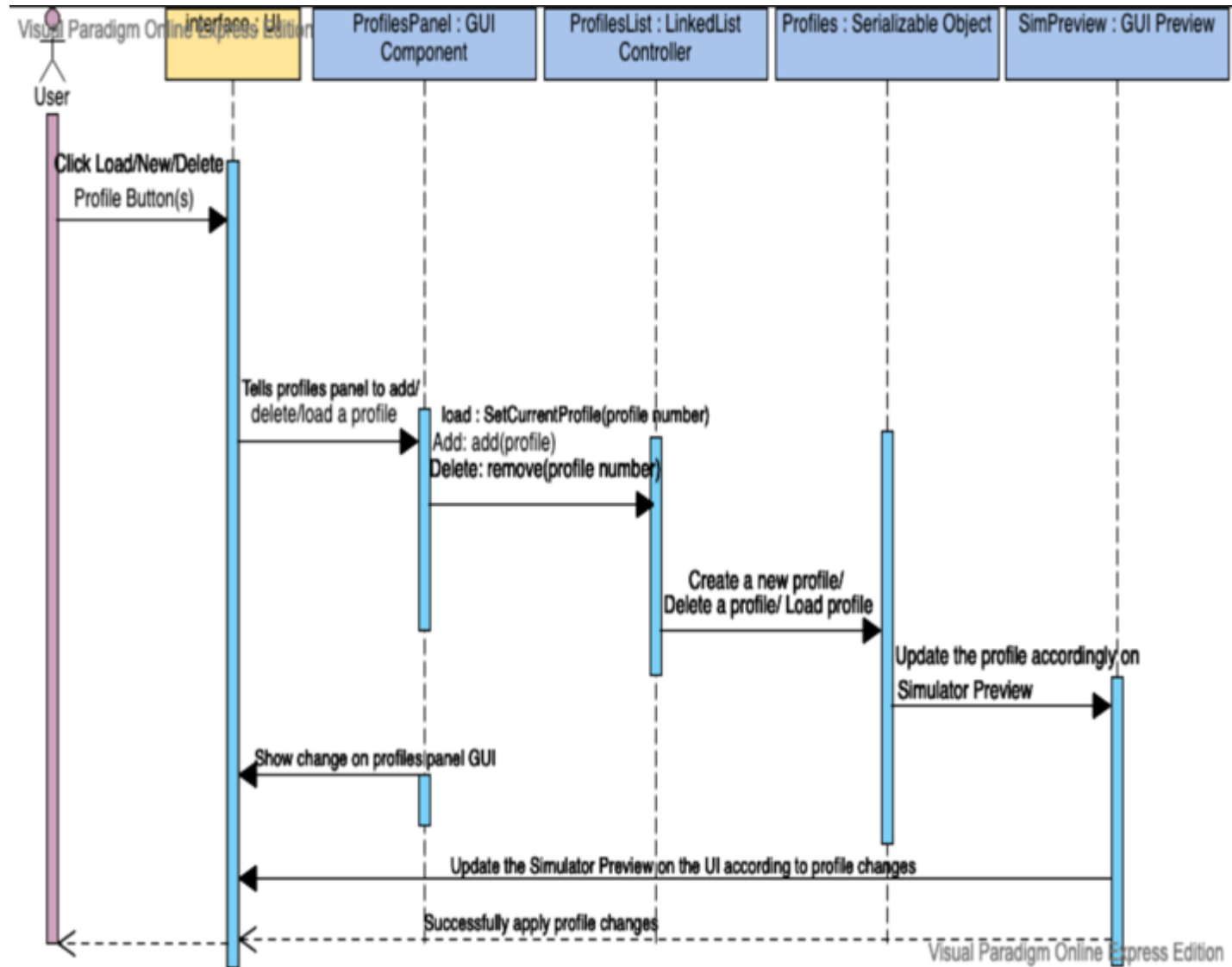
Next/Previous Log:
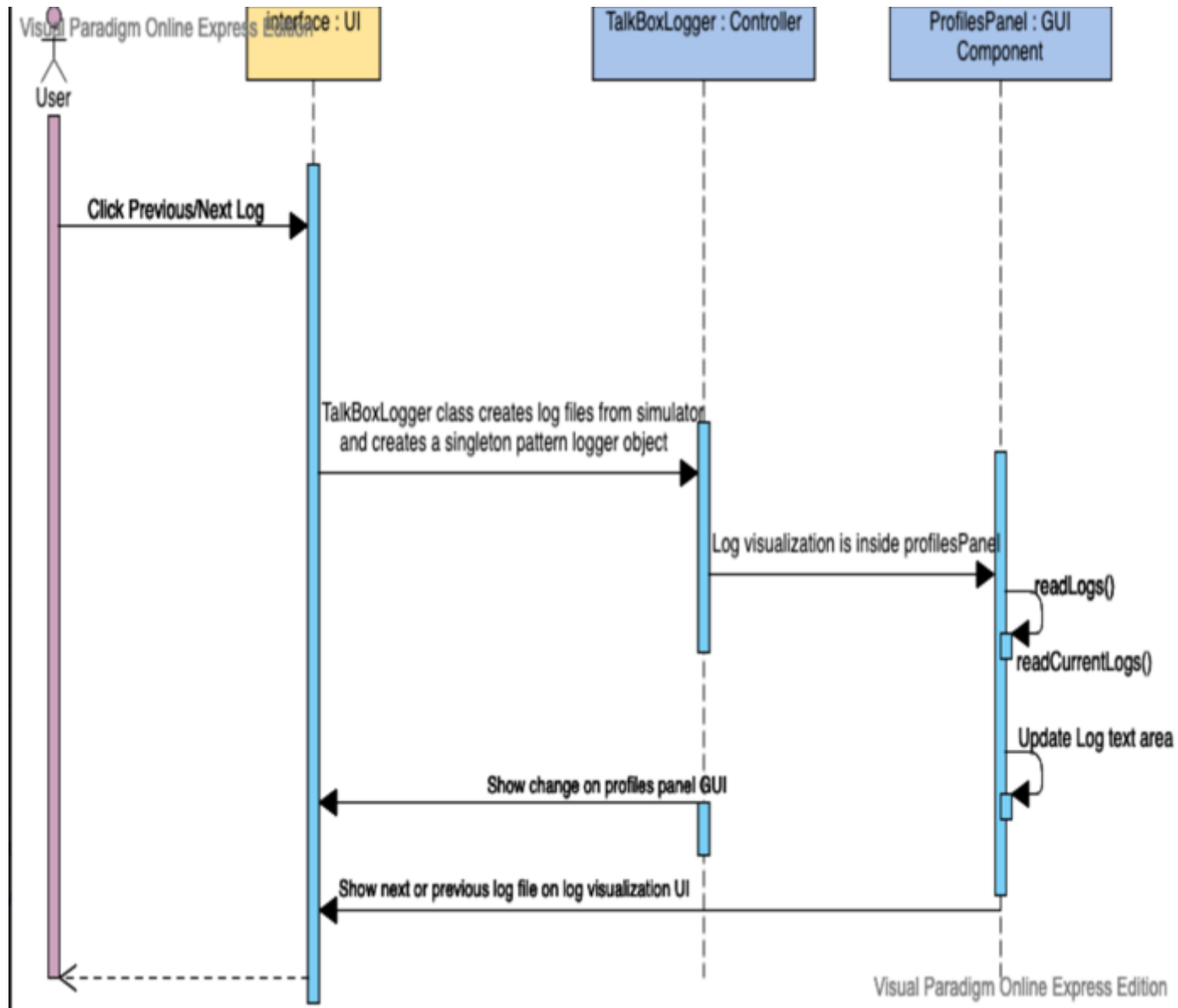
TalkBox Simulator

Playback Audio from a Button:

Swap Profiles:

TalkBox Configuration Log (TBCLog)

Next/Previous/Load Log: