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Text2SpeechEditor

Final Sprint Report

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**Team: 2672-2900-2831**

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## VERSIONS HISTORY

Date	Version	Description	Author
15/04/2020	1.0	First draft of report	Gkatzagiannis Vasileios, Tatsis Spiridwn, Kotanidis Eustathios
19/05/2020	1.1	Final version of report	Gkatzagiannis Vasileios, Tatsis Spiridwn, Kotanidis Eustathios

## 1 Introduction

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This document provides information concerning the one and final sprint of the project.

### 1.1 Purpose

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The purpose of this document is to present which test files correspond to the execution of the user stories and to present what classes were made during this sprint.

### 1.2 Document Structure

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The rest of this document is structured as follows. Section 2 describes our Scrum team and specifies this Sprint's backlog. Section 3 specifies the main design concepts for this release of the project.

## 2 Scrum team and Sprint Backlog

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### 2.1 Scrum team

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<b>Product Owner</b>	Apostolos Zarras
<b>Scrum Master</b>	Gkotzagiannis Vasileios
<b>Development Team</b>	Gkotzagiannis Vasileios, Kontanidis Eustatheios, Tatsis Spiridon

### 2.2 Sprint Backlog

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User Stories	Corresponding Test File (in package tests)
[US-1]	NewDocumentTest.java
[US-2]	EditDocumentTest.java
[US-3]	SaveDocumentTest.java
[US-4]	OpenDocumentTest.java
[US-5]	TransformDocumentTests.java

[US-6]	TransformLineTests.java
[US-7]	TransformDocumentTests.java
[US-8]	TransformLineTests.java
[US-9]	TransformDocumentTests.java
[US-10]	TransformLineTests.java
[US-11]	TuneEncodingStrategyTest.java
[US-12]	TuneAudioTest.java
[US-13]	ReplayCommandTest.java

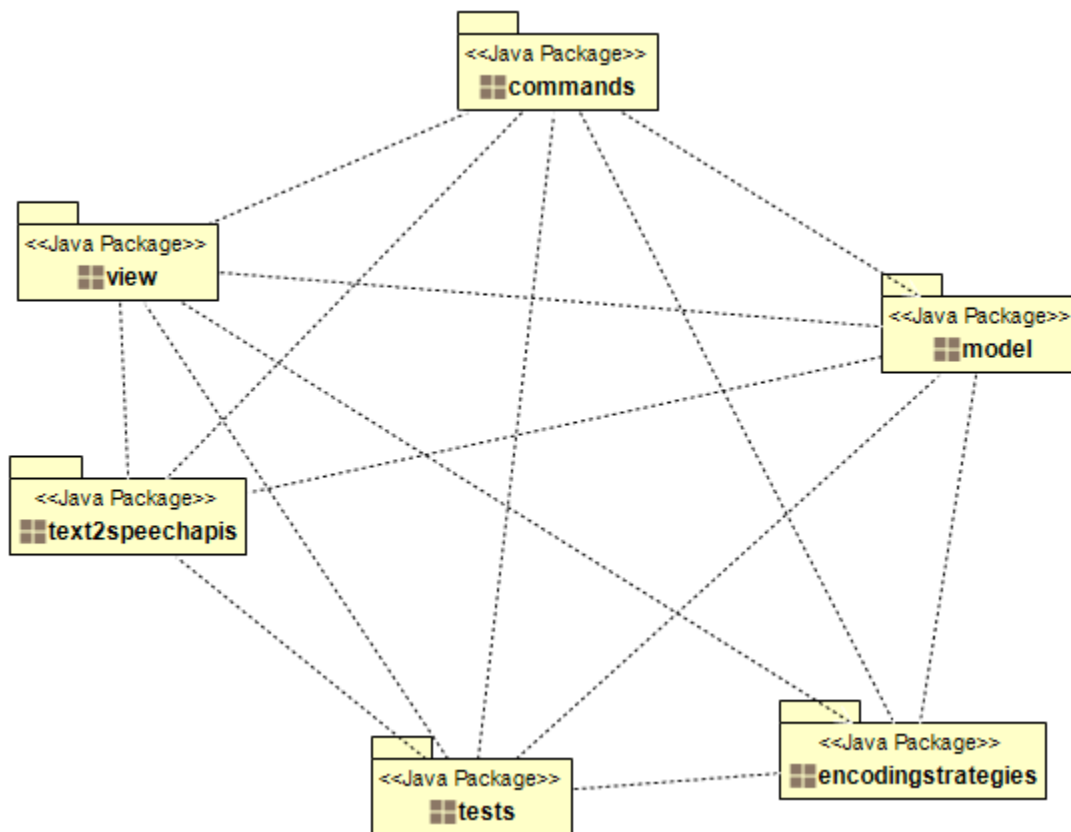
### 3 Design

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#### 3.1 Architecture

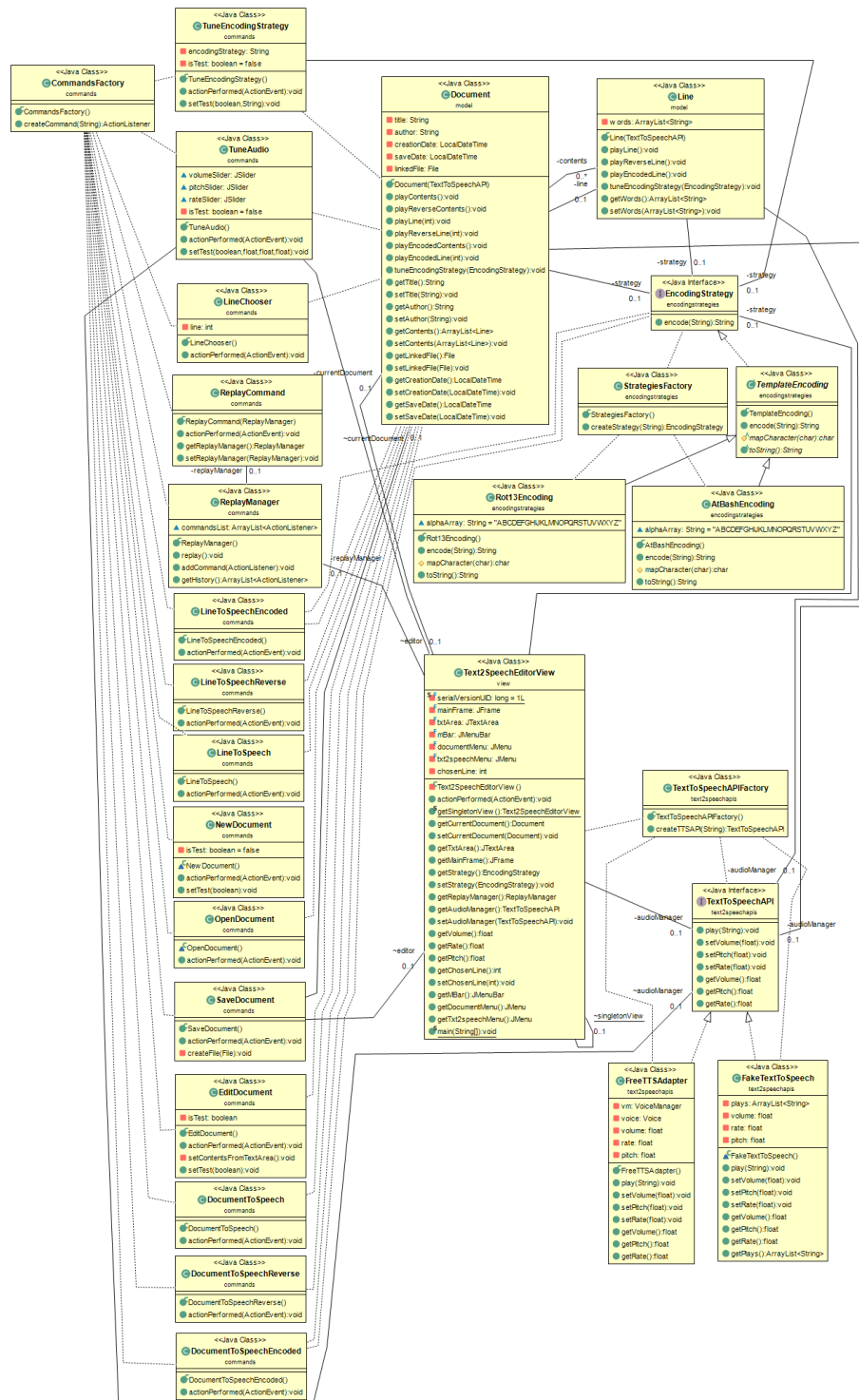
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THE OVERALL ARCHITECTURE OF PROJECT IN TERMS OF PACKAGE DIAGRAM.



## 3.2 Design

### 3.2.1 UML CLASS DIAGRAM



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### 3.2.2 CLASSES:

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#### 3.2.2.1 package: commands

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Class Name: CommandsFactory	
<b>Responsibilities:</b> <ul style="list-style-type: none"><li>▪ Create the command that the menu will trigger (new document, edit ...)</li></ul>	<b>Collaborations:</b> <ul style="list-style-type: none"><li>▪ Has a dependency with all the commands in the commands package</li><li>▪ Collaborates with the editor (Text2SpeechEditorView)</li><li>▪ Is called by the Text2SpeechEditorView in view package to create a command</li></ul>

Class Name: DocumentToSpeech	
<b>Responsibilities:</b> <ul style="list-style-type: none"><li>▪ Calls the method that plays the contents of the current document</li></ul>	<b>Collaborations:</b> <ul style="list-style-type: none"><li>▪ Is triggered by the CommandsFactory when the menu item 'transform document' is pressed</li><li>▪ Collaborates with the editor (Text2SpeechEditorView)</li><li>▪ Has a dependency with the document that is currently active in the editor</li></ul>

Class Name: DocumentToSpeechEncoded	
<b>Responsibilities:</b> <ul style="list-style-type: none"><li>▪ Calls the method that plays the contents of the current document encoded</li></ul>	<b>Collaborations:</b> <ul style="list-style-type: none"><li>▪ Is triggered by the CommandsFactory when the menu item 'transform document encoded' is pressed</li><li>▪ Collaborates with the editor (Text2SpeechEditorView)</li><li>▪ Has a dependency with the document that is currently active in the editor</li><li>▪ Has a dependency with the encoding Strategy that is set to the editor to check if it is null</li></ul>

Class Name: DocumentToSpeechReverse	
<b>Responsibilities:</b> <ul style="list-style-type: none"> <li>▪ Calls the method that plays the contents of the current document in reverse order</li> </ul>	<b>Collaborations:</b> <ul style="list-style-type: none"> <li>▪ Is triggered by the CommandsFactory when the menu item 'transform document in reverse' is pressed</li> <li>▪ Collaborates with the editor (Text2SpeechEditorView)</li> <li>▪ Has a dependency with the document that is currently active in the editor</li> </ul>

Class Name: EditDocument	
<b>Responsibilities:</b> <ul style="list-style-type: none"> <li>▪ Is responsible for setting the text area to being editable and when the editing stops it sets the contents of the document the same as the text area.</li> </ul>	<b>Collaborations:</b> <ul style="list-style-type: none"> <li>▪ Is triggered by the CommandsFactory when the menu item 'Edit' is pressed</li> <li>▪ Collaborates with the editor (Text2SpeechEditorView)</li> <li>▪ Has a dependency with the document that is currently active in the editor</li> </ul>

Class Name: LineChooser	
<b>Responsibilities:</b> <ul style="list-style-type: none"> <li>▪ This is a helper class (not in the user stories) that chooses a line from the current document and saves it in a field in the Text2SpeechEditorView</li> </ul>	<b>Collaborations:</b> <ul style="list-style-type: none"> <li>▪ Is triggered by the CommandsFactory when the menu item 'Choose line' is pressed</li> <li>▪ Collaborates with the editor (Text2SpeechEditorView)</li> <li>▪ Has a dependency with the document that is currently active in the editor</li> </ul>

Class Name: LineToSpeech	
<b>Responsibilities:</b> <ul style="list-style-type: none"> <li>▪ Calls the method that plays the current line of the document (that is set by the LineChooser class)</li> </ul>	<b>Collaborations:</b> <ul style="list-style-type: none"> <li>▪ Is triggered by the CommandsFactory when the menu item 'transform line' is pressed</li> <li>▪ Collaborates with the editor (Text2SpeechEditorView)</li> <li>▪ Has a dependency with the document that is currently active in the editor</li> </ul>

Class Name: LineToSpeechEncoded	
<b>Responsibilities:</b> <ul style="list-style-type: none"> <li>▪ Calls the method that plays the current line of the document (that is set by the LineChooser class) encoded</li> </ul>	<b>Collaborations:</b> <ul style="list-style-type: none"> <li>▪ Is triggered by the CommandsFactory when the menu item 'transform line encoded' is pressed</li> <li>▪ Collaborates with the editor (Text2SpeechEditorView)</li> <li>▪ Has a dependency with the document that is currently active in the editor</li> <li>▪ Has also a dependency with the encoding Strategy that the editor holds, to check if it is null</li> </ul>

Class Name: LineToSpeechReverse	
<b>Responsibilities:</b> <ul style="list-style-type: none"> <li>▪ Calls the method that plays the current line of the document (that is set by the LineChooser class) in reverse order</li> </ul>	<b>Collaborations:</b> <ul style="list-style-type: none"> <li>▪ Is triggered by the CommandsFactory when the menu item 'Transform Line in reverse' is pressed</li> <li>▪ Collaborates with the editor (Text2SpeechEditorView)</li> <li>▪ Has a dependency with the document that is currently active in the editor</li> </ul>



Class Name: NewDocument	
<b>Responsibilities:</b> <ul style="list-style-type: none"> <li>▪ This class is responsible for creating a new document with a title and an author that are given by the user.</li> <li>▪ When the new document is confirmed it sets the creation date, as the current date and time, for this new document.</li> </ul>	<b>Collaborations:</b> <ul style="list-style-type: none"> <li>▪ Is triggered by the CommandsFactory when the menu item 'New Document' is pressed</li> <li>▪ Collaborates with the editor (Text2SpeechEditorView)</li> <li>▪ Collaborates with the Document class in the model package.</li> </ul>

Class Name: OpenDocument	
<b>Responsibilities:</b> <ul style="list-style-type: none"> <li>▪ This class is responsible for opening a document by creating a file chooser so the user can pick a file.</li> <li>▪ After the file is selected, it reads the first four lines of the file to check for title, author, creation date and last save date.</li> <li>▪ When the above is done, it sets the contents of the document as the contents of the file that got opened.</li> </ul>	<b>Collaborations:</b> <ul style="list-style-type: none"> <li>▪ Is triggered by the CommandsFactory when the menu item 'Open document' is pressed</li> <li>▪ Collaborates with the editor (Text2SpeechEditorView)</li> <li>▪ Collaborates with the model package.</li> </ul>

Class Name: SaveDocument	
<b>Responsibilities:</b> <ul style="list-style-type: none"> <li>▪ This class is responsible for saving the current document that is held by the editor on the hard disk as a text file. It prompts a file chooser to the user to choose the path and the name.</li> <li>▪ It creates a file which has in its first four lines the 'metadata' for the document (title, author, creation date, last save date). It sets the last save date as the current time and sets the contents of the file as the contents that the current document has.</li> </ul>	<b>Collaborations:</b> <ul style="list-style-type: none"> <li>▪ Is triggered by the CommandsFactory when the menu item 'Save Document' is pressed</li> <li>▪ Collaborates with the editor (Text2SpeechEditorView)</li> <li>▪ Collaborates with the model package.</li> </ul>

Class Name: TuneAudio	
<b>Responsibilities:</b> <ul style="list-style-type: none"> <li>This class is responsible for tuning the audio of the text to speech adapter. It contains three sliders to change the volume, rate, and pitch for the text to speech that the editor has (freeTTS or fakeTTS).</li> </ul>	<b>Collaborations:</b> <ul style="list-style-type: none"> <li>Is triggered by the CommandsFactory when the menu item 'Tune Audio' is pressed</li> <li>Collaborates with the editor (Text2SpeechEditorView)</li> <li>Collaborates with the API of the text2speechapis that has the methods to tune the audio of the freeTTS or fakeTTS.</li> </ul>

Class Name: TuneEncodingStrategy	
<b>Responsibilities:</b> <ul style="list-style-type: none"> <li>This class is responsible for tuning the encoding strategy. It prompts the user to choose the encoding that they prefer and then sets the strategy of the document, editor as the one they choose.</li> </ul>	<b>Collaborations:</b> <ul style="list-style-type: none"> <li>Is triggered by the CommandsFactory when the menu item 'Tune Encoding Strategy' is pressed</li> <li>Collaborates with the editor (Text2SpeechEditorView)</li> <li>Collaborates with the Strategies Factory which creates the strategy that is after set to the document, editor.</li> </ul>

Class Name: ReplayCommand	
<b>Responsibilities:</b> <ul style="list-style-type: none"> <li>This class is responsible for managing the Replay command. It replays the actions that the user has made until now.</li> </ul>	<b>Collaborations:</b> <ul style="list-style-type: none"> <li>Is triggered by the CommandsFactory when the menu item 'Tune Encoding Strategy' is pressed</li> <li>Collaborates with the ReplayManager class.</li> </ul>

Class Name: ReplayManager	
<b>Responsibilities:</b> <ul style="list-style-type: none"> <li>This class is responsible for managing the replay functionality of the editor. It</li> </ul>	<b>Collaborations:</b> <ul style="list-style-type: none"> <li>Is called by the ReplayCommand to replay the commands.</li> </ul>

has a list of all the latest commands that were pressed and implements the replay method that the ReplayCommand executes.	<ul style="list-style-type: none"> <li>The object is created inside the TextToSpeechEditorView class.</li> </ul>
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### 3.2.2.2 package: encodingstrategies

Class Name: StrategiesFactory	
<b>Responsibilities:</b> <ul style="list-style-type: none"> <li>This class is responsible for creating a new encoding strategy.</li> </ul>	<b>Collaborations:</b> <ul style="list-style-type: none"> <li>Collaborates with the TuneEncodingStrategy class which calls it to create the strategy that the user selected.</li> <li>It returns an EncodingStrategy object so it has a dependency with the EncodingStrategy class</li> </ul>

Class Name: EncodingStrategy	
<b>Responsibilities:</b> <ul style="list-style-type: none"> <li>This class is just the interface that the encoding strategies that we provide implement.</li> </ul>	<b>Collaborations:</b> <ul style="list-style-type: none"> <li>Is implemented by the TemplateEncoding class</li> </ul>

Class Name: TemplateEncoding	
<b>Responsibilities:</b> <ul style="list-style-type: none"> <li>This class implements the Encoding Strategy class. Is the default abstract class for the encoding strategies that implements the code that is default for all them.</li> </ul>	<b>Collaborations:</b> <ul style="list-style-type: none"> <li>Is extended by the Rot13Encoding and the AtBashEncoding classes.</li> <li>Implements the EncodingStrategy class.</li> </ul>

Class Name: Rot13Encoding	
<b>Responsibilities:</b> <ul style="list-style-type: none"> <li>This class extends the Template Encoding class. It overrides the protected method mapCharacter that</li> </ul>	<b>Collaborations:</b> <ul style="list-style-type: none"> <li>Extends the TemplateEncoding class.</li> <li>Is returned as an object by the</li> </ul>

the abstract class has set to create the algorithm for the rot 13 encoding.	StrategiesFactory when the user chooses rot13 encoding.
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Class Name: AtBashEncoding	
<b>Responsibilities:</b> <ul style="list-style-type: none"> <li>This class extends the Template Encoding class. It overrides the protected method mapCharacter that the abstract class has set to create the algorithm for the atbash encoding.</li> </ul>	<b>Collaborations:</b> <ul style="list-style-type: none"> <li>Extends the TemplateEncoding class.</li> <li>Is returned as an object by the StrategiesFactory when the user chooses atbash encoding.</li> </ul>

### 3.2.2.3 package: model

Class Name: Document	
<b>Responsibilities:</b> <ul style="list-style-type: none"> <li>This class is responsible for the management of the documents. It has all the necessary fields to represent a document and the methods that play its contents.</li> </ul>	<b>Collaborations:</b> <ul style="list-style-type: none"> <li>Collaborates with the TextToSpeechAPI that plays its contents through the TTS Adapter.</li> <li>Collaborates with the EncodindStrategy class to set the encoding strategy for the contents.</li> </ul>

Class Name: Line	
<b>Responsibilities:</b> <ul style="list-style-type: none"> <li>This class is responsible for the management of a line of the document. It has all the necessary fields to represent a line of the document and the methods that play the contents of a line.</li> </ul>	<b>Collaborations:</b> <ul style="list-style-type: none"> <li>Collaborates with the TextToSpeechAPI that plays its contents through the TTS Adapter.</li> <li>Collaborates with the EncodindStrategy class to set the encoding strategy for the contents.</li> </ul>

### 3.2.2.4 package: text2speechapis

Class Name: TextToSpeechAPIFactory	
<b>Responsibilities:</b> <ul style="list-style-type: none"> <li>▪ This class is responsible for the creation of the right text to speech API.</li> </ul>	<b>Collaborations:</b> <ul style="list-style-type: none"> <li>▪ Collaborates with all the text to speech APIs that the editor provides to create the right one.</li> <li>▪ The Text2SpeechEditorView calls its method to create a new text to speech API with the right argument.</li> </ul>

Class Name: TextToSpeechAPI	
<b>Responsibilities:</b> <ul style="list-style-type: none"> <li>▪ This class is the API that all the text to speech adapters implement. It is responsible for holding the right methods that a tts adapter needs.</li> </ul>	<b>Collaborations:</b> <ul style="list-style-type: none"> <li>▪ Collaborates with all the text to speech adapters which implement it.</li> <li>▪ The Text2SpeechEditorView creates an object of TextToSpeechAPI which is the one that the TextToSpeechAPI Factory returns .</li> </ul>

Class Name: FreeTTSAdapter	
<b>Responsibilities:</b> <ul style="list-style-type: none"> <li>▪ This class is responsible for the creation of the FreeTTS text to speech api. <a href="https://freetts.sourceforge.io/">[https://freetts.sourceforge.io/]</a></li> </ul>	<b>Collaborations:</b> <ul style="list-style-type: none"> <li>▪ Collaborates with the TextToSpeechAPIFactory that creates an object of FreeTTSAdapter every time the choice of freeTTS is made.</li> <li>▪ Implements the methods that the interface TextToSpeechAPI has set.</li> </ul>

Class Name: FakeTextToSpeech	
<b>Responsibilities:</b> <ul style="list-style-type: none"> <li>▪ This class is responsible for the creation of a fakeTTS text to speech api. Mostly for testing purposes.</li> </ul>	<b>Collaborations:</b> <ul style="list-style-type: none"> <li>▪ Collaborates with the TextToSpeechAPIFactory that creates an object of FakeTextToSpeech every time the choice of fakeTTS is made.</li> <li>▪ Implements the methods that the interface TextToSpeechAPI has set.</li> </ul>

### 3.2.2.5 package: view

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Class Name: Text2SpeechEditorView	
<b>Responsibilities:</b> <ul style="list-style-type: none"><li>▪ This class is responsible for the visualization of the documents and how the user interacts with the commands. It implements the gui of the editor.</li></ul>	<b>Collaborations:</b> <ul style="list-style-type: none"><li>▪ Collaborates with all the commands in the commands package to trigger the right command when a menu item is pressed.</li><li>▪ It collaborates with the TextToSpeechAPI and TextToSpeech APIFactory because this class creates the Text to speech adapter that is needed.</li></ul>