Text2SpeechEditor

Sprint Report

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VERSIONS HISTORY

Date	Version	Description	Author
25/5/2020	1.0	Final Version	AM: 3313, 3342, 3358

1 Introduction

A text to speech application can be really helpful for people with vision problems and people that are in need of assistance with checking what they have typed in an editor in general. It is also a very Through our desktop application that is developed in Java, the user is given the choice to transform the whole document or a specific line to speech. The application can open and save documents in .txt form and optionally add an author and a title during the document creation process. In addition, it is possible for the user to play a document or a line in reverse speech. The document can be encoded with different encoding methods (Rot13 and AtBash at the moment) which the user can use to encode the document and then transform it or a specific line to speech. Finally, through the application GUI, the user can easily change sound parameters (volume, rate, pitch) according to their liking.

1.1 Purpose

- The purpose of this application is to transform text, that is provided as an input by the user, to speech.
- The application also serves the purpose of being able to encode text before turning it into speech.
- The interface of the application also serves the purpose of a text editor.

1.2 Document Structure

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

2 Scrum team and Sprint Backlog

We have implemented all the tests required for the user stories provided by the guidelines document. Below we have attached the tests in tabular form.

Test Case ID:	TC_1
Test Priority:	High
Module Name:	File option in menu
Test Title:	New Document Test
Description:	Verify that a document is created properly

Step	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)
1	Create new document		Document's contents are empty	Contents are empty	Pass
2	Fill a "dummy" document with contents	Word "test"			
3	Create new document		New document's contents are empty and do not contain any words from previous document's	Contents are empty	Pass

Test Case ID:	TC_2
Test Priority:	High
Module Name:	File option in menu
Test Title:	Open Document Test
Description:	Verify that a document is opened properly

Step	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)
1	Create dummy .txt file and fill it with data	Author, Title, Creation Date, Saved Date, Text			
2	Open dummy document		Opened document has the same contents with dummy .txt file	Opened document has the same contents with dummy .txt file	Pass

Test Case ID:	TC_3
Test Priority:	High
Module Name:	File option in menu
Test Title:	Save Document Test
Description:	Verify that a document is saved properly

Step	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)
1	Create a dummy document and fill it with data	Author, Title, Creation Date, Saved Date, Text			
2	Save dummy document		The .txt file that is created after saving has the same contents with dummy document	The .txt file has the same contents with dummy document	Pass

Test Case ID:	TC_4
Test Priority:	High
Module Name:	File option in menu
Test Title:	Edit Document Test
Description:	Verify that a document is edited properly

Step	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)
1	Create test text	"This is a test text in a test file"			
2	Create dummy document				
3	Edit dummy document		The test text is the same with the dummy document's contents	The test text is the same with the dummy document's contents	Pass

Test Case ID:	TC_5
Test Priority:	High
Module Name:	Play and Encode option in menu
Test Title:	Speech and Encoding Test
Description:	Verify that a document is properly transformed into speech and is encoded correctly

Step	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)
1	Create a dummy document that uses FakeTTS	Author, Title, Creation Date, Saved Date, Text			
2	Set text area with document's contents				
3	Initialize LineToSpeech command				
4	Tune document's encoding				
5	Play document		Plays document's contents	Plays document's contents	Pass
6	Play document in reverse		Plays document's contents in reverse	Plays document's contents in reverse	Pass
7	Play a line in document		Plays a line in document	Plays a line in document	Pass
8	Play a line in document in reverse		Plays a line in document in reverse	Plays a line in document	Pass
9	Play encoded contents of document		Plays encoded contents of document	Plays encoded contents of document	Pass
10	Play an encoded line in document		Plays an encoded line in document	Plays an encoded line in document	Pass

Test Case ID:	TC_6
Test Priority:	Medium
Module Name:	Sound settings in menu
Test Title:	Tune Audio Test
Description:	Verify that tuning audio settings works properly

Step	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)
1	Initialize random pitch, rate and volume	Pitch, rate, volume			
2	Set new pitch, rate and volume in audio settings		Audio settings are the same as random ones	Audio settings are the same as random one	Pass

Test Case ID:	TC_7
Test Priority:	Medium
Module Name:	Encoding option in menu
Test Title:	Tune Encoding Test
Description:	Verify that tuning the encoding strategy works properly

Step	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)
1	Create encoding strategies	AtBash, Rot13			
2	Tune document's encoding strategy		Document's encoding strategy is the same as the one we tuned	Document's encoding strategy is the same as the one we tuned	Pass

2.1 Scrum team

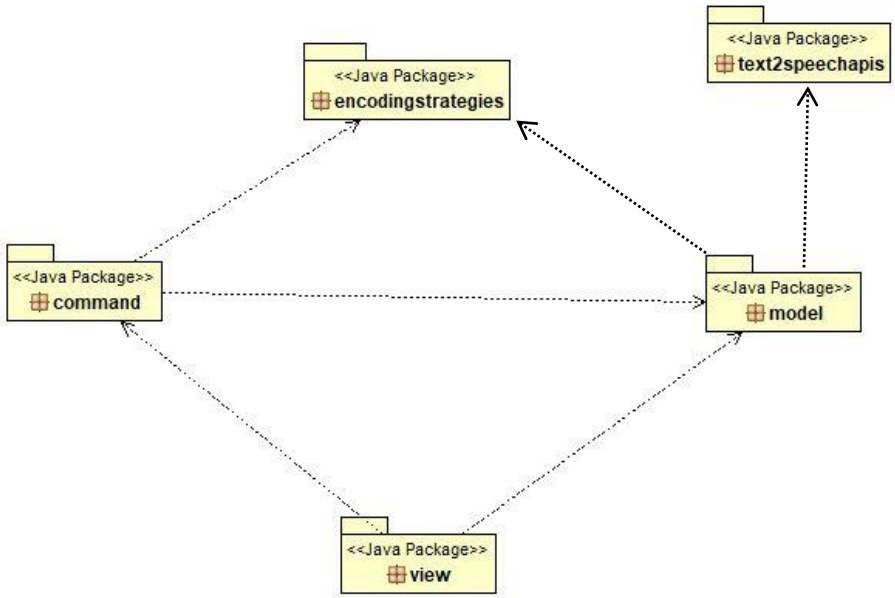
Product Owner	Apostolos Zarras
Scrum Master	Tsopouridis Grigorios
Development Team	Papachristou Filippos-Apostolos, Tarasidis Ioannis, Tsopouridis Grigorios

2.2 Sprint Backlog

All of the user stories described in the provided guidelines document (US-1 to US-13) have been realized in this Sprint.

3 Design

3.1 Architecture



3.2 Design – UML Diagrams

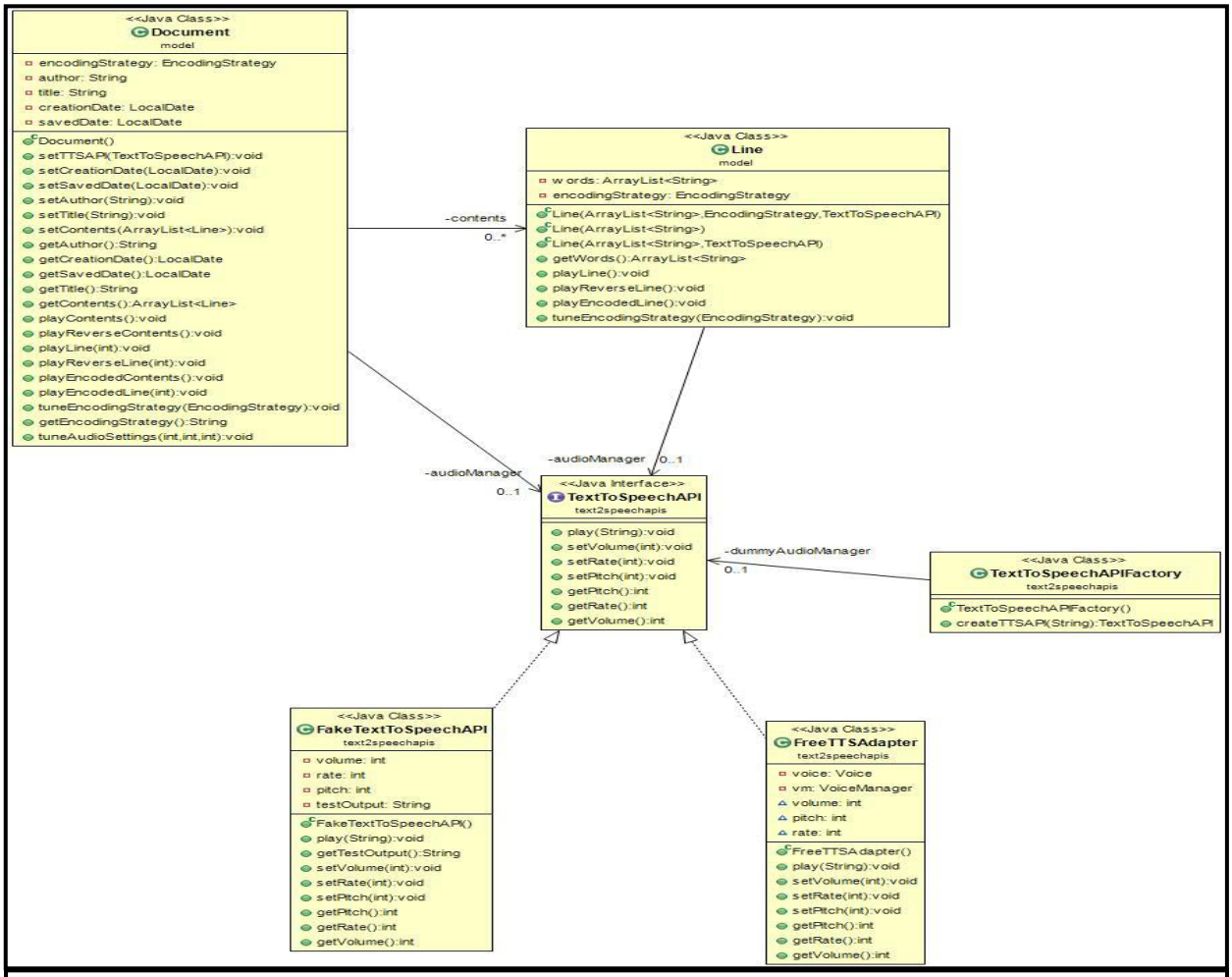


FIGURE 1: MODEL PACKAGE WITH TEXT TO SPEECH APIS PACKAGE

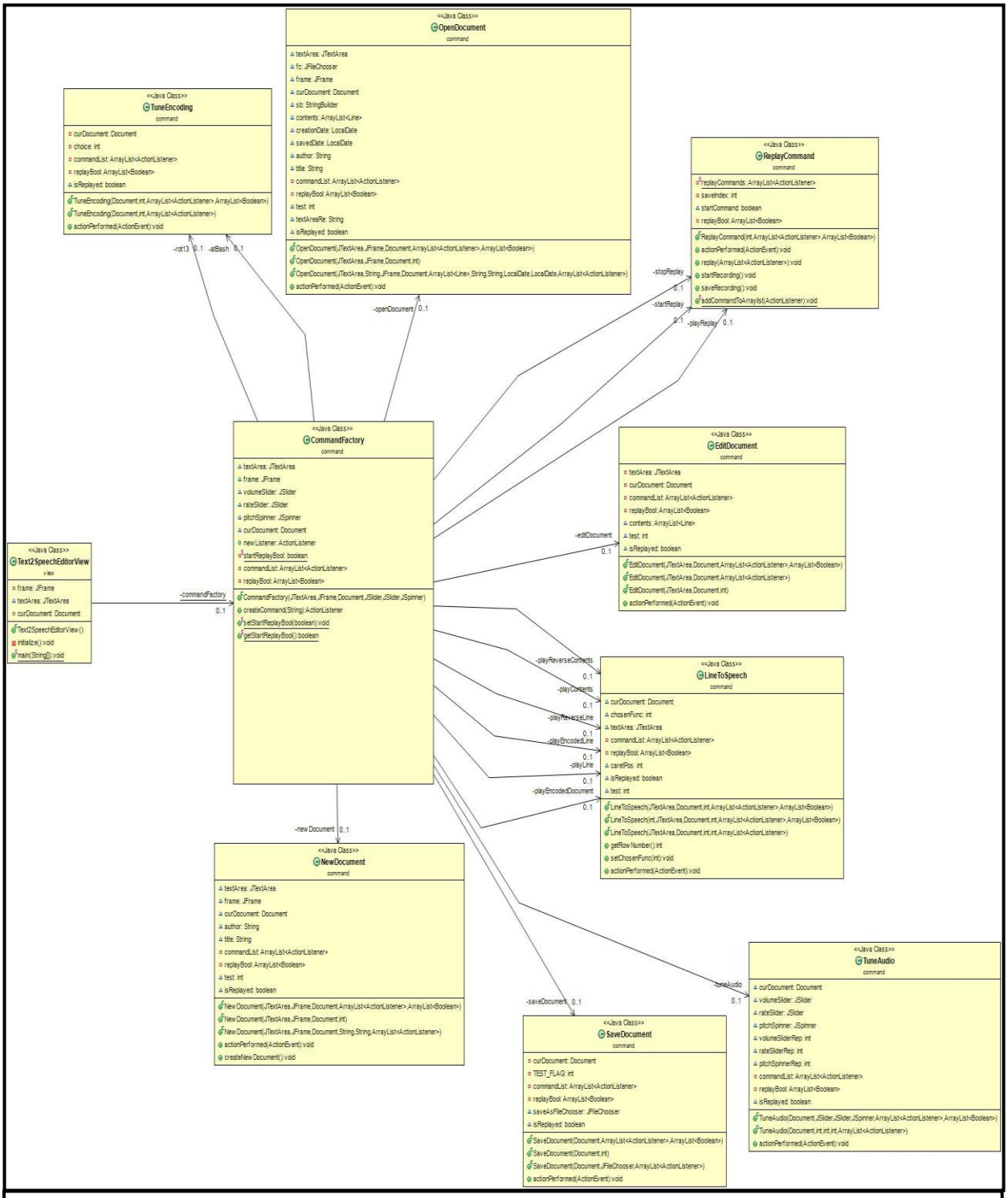


FIGURE 2: COMMAND PACKAGE WITH VIEW PACKAGE

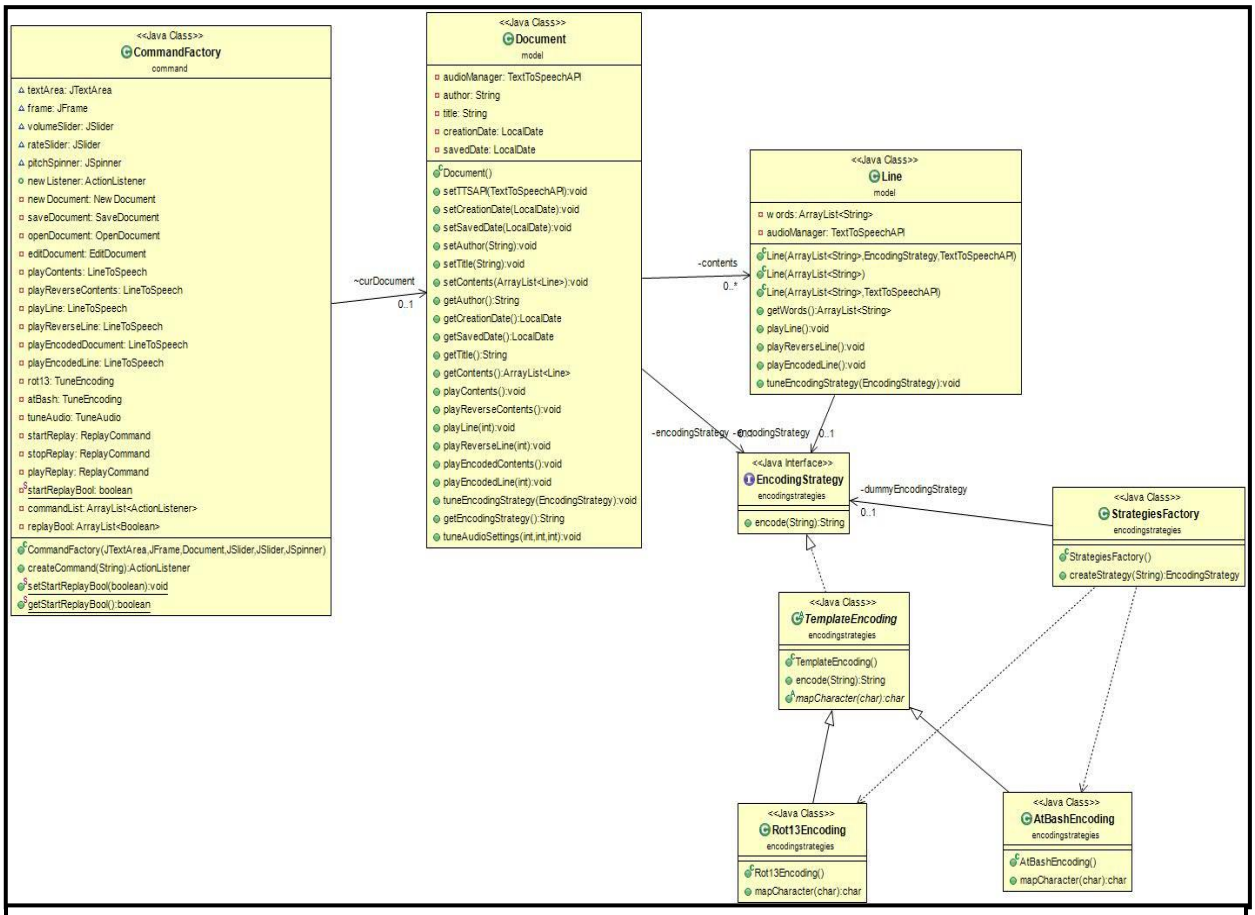


FIGURE 3: MODEL PACKAGE WITH ENCODING STRATEGIES PACKAGE

3.3 Design – CRC Cards

Class Name: CommandFactory	
Responsibilities: ▪ Creates commands	**Collaborations:** ▪ All command classes in command package (Edit, Save, Open etc.)

Class Name: EditDocument	
Responsibilities: ▪ Saves text area to current document's contents	**Collaborations:** ▪ Document ▪ Line

Class Name: LineToSpeech	
Responsibilities: ▪ Transforms document's contents or a certain to speech or reverse speech	**Collaborations:** ▪ Document ▪ Line

Class Name: NewDocument	
Responsibilities: ▪ Creates new document and optionally adds author and title to document	**Collaborations:** ▪ Document

Class Name: OpenDocument	
Responsibilities: ▪ Opens a document that is an .txt file	**Collaborations:** ▪ Document ▪ Line

Class Name: ReplayCommand	
Responsibilities: ▪ Replays a set of commands that the user has chosen	**Collaborations:** ▪ All command classes in command package

Class Name: SaveDocument	
Responsibilities: ▪ Saves a document in .txt form	**Collaborations:** ▪ Document ▪ Line

Class Name: TuneAudio	
Responsibilities: ▪ Tunes audio settings	**Collaborations:** ▪ Document ▪ TextToSpeechAPI

Class Name: TuneEncoding	
Responsibilities: ▪ Tunes encoding method	**Collaborations:** ▪ Document ▪ EncodingStrategy

Class Name: AtBash	
Responsibilities: ▪ Implements AtBash encoding method	**Collaborations:** ▪ TemplateEncoding

Class Name: Rot13	
Responsibilities: ▪ Implements Rot13 encoding method	**Collaborations:** ▪ TemplateEncoding

Class Name: StrategiesFactory	
Responsibilities: ▪ Creates encoding strategy	**Collaborations:** ▪ Rot13 ▪ AtBash ▪ EncodingStrategy

Class Name: TemplateEncoding	
Responsibilities: ▪ Implements general encoding method	**Collaborations:** ▪ Rot13 ▪ AtBash

Class Name: Document	
Responsibilities: ▪ Implements Play methods for contents	**Collaborations:** ▪ TextToSpeechAPI ▪ EncodingStrategy ▪ Line

Class Name: Line	
Responsibilities: ▪ Implements Play methods for lines	**Collaborations:** ▪ TextToSpeechAPI ▪ EncodingStrategy

Class Name: FakeTextToSpeechAPI	
Responsibilities: ▪ Returns input data (used for testing)	**Collaborations:** ▪ TextToSpeechAPI

Class Name: FreeTTSAdapter	
Responsibilities: ▪ Implements the speech part based on freetts library	**Collaborations:** ▪ TextToSpeechAPI

Class Name: TextToSpeechAPIFactory	
Responsibilities: ▪ Creates TextToSpeechAPIs	**Collaborations:** ▪ FakeTextToSpeechAPI ▪ FreeTTSAdapter ▪ TextToSpeechAPI

Class Name: Text2SpeechEditorView	
Responsibilities: ▪ Implements the GUI of program	**Collaborations:** ▪ CommandFactory ▪ Document