

# *Analysis Document*

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## 1. Overview

This document presents the software requirements' specifications of <<TimeLine Manager>> application in a software development project. <<Timeline Manager>> is a stand-alone application, which is implemented in Java.

As instructed, the user starts the application from an executable JAR-file. The source code will be managed by using the online software management platform "GitHub".

## 2. Functionalities and Requirements

This application has two major modes; *create mode* and *display mode*, and some general requirements.

### 2.1 Create Mode Requirements

Requirement ID	Description Priority	Priority
TM-C1	Create one or more timelines with/without separate start and end time.	1
TM-C2	Add any number of events to the timeline.	1
TM-C3	Create, describe and set time of an event without duration.	1
TM-C4	Create, describe and set duration of an event with duration.	1
TM-C5	Modify details of an event in a timeline by the user.	1
TM-C6	Delete a timeline or an event on a timeline.	1
TM-C7	Modify a timeline	1

### 2.2 Display Mode Requirements

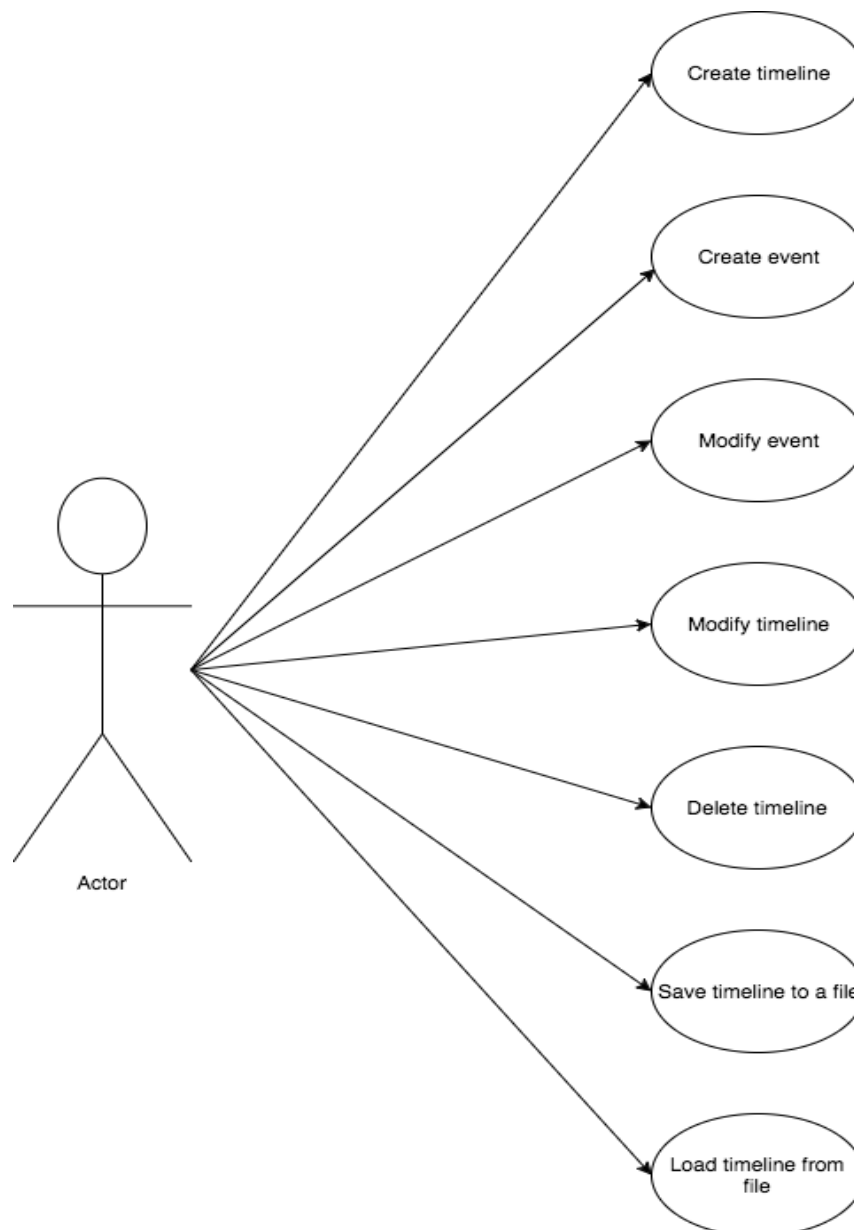
Requirement ID	Description	Priority
TM-D1	Display loaded or created timelines and their events	1
TM-D2	Display timeline events in chronological order	1
TM-D3	Display event title	1
TM-D4	For event with duration, display the time span with a bar	1
TM-D5	Display event details inside a pop-up window	1
TM-D6	Display multiple timelines by allowing scrolling horizontally and/or vertically	1

## 2.3 General Requirements

Requirement ID	Description	Priority
TM-GR1	Save and/or load timelines.	1
TM-GR2	Saving and loading a timeline is done through a file or an SQL database	1

## 3. Use Cases

The following section demonstrates the use cases of the application of the Timeline Manager application.



### 3.1 Create mode

Requirement ID	TM-C1
Use case title	Create a timeline.
Description	Create a timeline when the <<Create timeline>> button is clicked, and specify a starting date, end date, description and title.
Primary Actor	User
Pre-conditions	The application is running and no other action is in play.
Success end condition	System creates the timeline and stores it in the application.
Failure end condition	System does not create the timeline, display window is not updated and/or system reports failure.
Minimal Guarantee	System shows an error message.
Trigger	<<Create Timeline>> button is clicked.
Post-conditions	If successful, the timeline is created, stored, displayed in the project list, and the system awaits for further instructions.
Primary flow	The user clicks <<Create timeline>> button and enters the title of timeline and the timespan (start and endtime). After clicking the <<Save>> button, a timeline object is created and shown.
Alternate flow	The user clicks <<Create timeline>> button and a window is shown where the user enters the title and the timespan of the timeline. After clicking <<Save>>, an error window will be shown if the user enters faulty information, and the timeline object will not be created. User is sent back to the previous window to either edit the information or cancel the creation.

Requirement ID	TM-C2
Use case title	Add an event/events to the timeline.
Description	Add timeline event when the <<Add event>> button is clicked, and the desired event description is entered.
Primary Actor	User
Pre-conditions	The application is running and a timeline is created and selected.
Success end condition	System adds event to the timeline.
Failure end condition	System does not add the event, display window is not updated and/or system reports failure.
Minimal Guarantee	System shows an error message.

<b>Trigger</b>	The <<Add Event>> button is clicked.
<b>Primary flow</b>	The user clicks <<Add Event>> and a window is shown where the user enters the title, an image, the timespan of the event and a descriptive text for the event. When user clicks <<Save>>, an event will be created and shown on the timeline
<b>Alternate flow</b>	The user clicks <<Add Event>> and a window is shown where the user enters the title, an image, the timespan of the event and a descriptive text for the event. An error will be shown if the user selects a timespan that is outside of the timeline's timespan. User will then be sent back to the previous window to either change the timespan or cancel the creation.
<b>Post-conditions</b>	If successful, the event is added to the timeline, displayed in the window and saved. User can see the created event on the timeline.

<b>Requirement ID</b>	<b>TM-C3</b>
<b>Use case title</b>	Create a non-durational event
<b>Description</b>	Add a non-durational event to the timeline when the <<Add event>> button is pressed
<b>Primary Actor</b>	User
<b>Pre-conditions</b>	The application is running and a timeline is created/selected.
<b>Primary flow</b>	The user clicks on the button <<Add event>>. A window is opened where the user enters details about the event including a description and the date when the event takes place. When the user is done, they click <<Save>>. The event is stored and shown in the timeline.
<b>Success-end condition</b>	System creates a non-durational event and adds it to the current timeline.
<b>Failure-end condition</b>	System does not create the non-durational event, display window is not updated and/or system reports failure.
<b>Minimal Guarantee</b>	System shows an error message.
<b>Trigger</b>	Button <<Add Event>> is clicked, and the duration box is not checked.
<b>Alternative flow</b>	The user clicks on the button <<Add event>>. A window is opened where the user leaves all the necessary details empty. The user clicks save, but the app shows an error, indicating that an event could not be created because details are missing. The system does not save the event, until the missing details are entered.
<b>Post-conditions</b>	If successful, the event is added to the timeline, displayed in the window and saved. User can see the created non-durational event on the specific timeline.

Requirement ID	TM-C4
Use case title	Create a durational event
Description	Add timeline event when the <<Add event>> button is clicked, duration box is checked, the event duration is specified, and other description is entered.
Primary Actor	User
Pre-conditions	The application is running and a timeline is created/selected.
Success end condition	System creates durational event and adds it to the specific timeline.
Failure end condition	System does not create the durational event, display window is not updated and/or system reports failure.
Minimal Guarantee	System shows an error message.
Trigger	Button <<Add Event>> is clicked.
Primary flow	The user clicks <<Add Event>> and a windows is shown where the user enters the title, an image, the timespan of the event and a descriptive text for the event. When user clicks <<Create Event>> button, an event will be created and shown on the timeline.
Alternate flow	The user clicks <<Add Event>> and a window pops up where the user enters the title, the duration of the event and a description of the event. -An error will be shown if the user selects a duration that is outside of the timelines' duration. The user will then be sent back to the previous window to either change the duration or cancel the creation.
Post-conditions	If successful, the event is added to the timeline, displayed in the window and saved. User can see the created event with duration on the timeline.

Requirement ID	TM-C5
Use case title	Modify an event description.
Description	Modify the created event when the event is clicked , and then, allow a change to either the title, description or either the duration.
Primary Actor	User
Pre-conditions	The application is running and the event in the timeline is already created.
Success-end condition	Modification to the event description is updated and shown correctly on the timeline.
Failure-end	Event description is unchanged, display window is not updated and/or

<b>condition</b>	system reports failure.
<b>Minimal Guarantee</b>	System failure is stored in a separate log file with details about failure.
<b>Trigger</b>	An already created event is clicked.
<b>Primary flow</b>	User clicks an event. User is then able to change the title, descriptive text and timespan of the event. After user has updated the information and clicked <<Save>> button, the changes will be made to the event, and at that time, the event will show the updated information.
<b>Alternate flow</b>	User clicks an event. User is then able to change the title, descriptive text and timespan of the event. If the event's new timespan is outside of the timeline's timespan, an error will be shown. User is then returned to the previous window where the user either enters a new timespan or cancels the modification action.
<b>Post-conditions</b>	If successful, the timeline is updated with the correct changes, and event description window is updated.

<b>Requirement ID</b>	<b>TM-C6</b>
<b>Use case title</b>	Delete a timeline or a timeline event
<b>Description</b>	Delete a created timeline/event when the <<Delete>> button is clicked and subsequently update display window or return to application's start screen if there no other timelines are displayed.
<b>Primary Actor</b>	User
<b>Pre-conditions</b>	The application is running, the event in the timeline is selected and has already been created (the timeline exists).
<b>Success-end condition</b>	Selected timeline/event is deleted from the storage and the System updates display window.
<b>Failure-end condition</b>	Timeline/event is not deleted from the storage, display window is not updated and/or system reports failure.
<b>Minimal Guarantee</b>	System failure is stored in a separate log file with details about failure.
<b>Trigger</b>	Button <<Delete>> is clicked.
<b>Primary flow</b>	The user presses <<Delete>> button and selects an event or timeline. The user will then get a confirmation window. After the user clicks <<Delete>> button, the timeline/event will be removed and will no longer be shown.
<b>Alternate flow</b>	The user clicks <<Delete>> button and selects a timeline or event. The user will then get a confirmation window. If user presses <<Cancel>> button, the action of deleting will be canceled, and the timeline/event will remain.
<b>Post-conditions</b>	The timeline and its events will be deleted.



<b>Requirement ID</b>	<b>TM-C7</b>
<b>Use case title</b>	Modify a timeline
<b>Description</b>	Modify the created timeline when the <<Edit timeline>> button is clicked , and then, allow a change to either the title, description or the duration.
<b>Primary Actor</b>	User
<b>Pre-conditions</b>	The application is running and a timeline is created/selected.
<b>Success end condition</b>	System updates the timeline with the new information and is shown correctly
<b>Failure end condition</b>	System does not update or change the timeline due to faulty information or the user canceling the action.
<b>Minimal Guarantee</b>	System failure is notified by an error message.
<b>Trigger</b>	Button <<Edit timeline>> is clicked.
<b>Primary flow</b>	User clicks <<Edit timeline>> button. User is then able to change the title and duration of the timeline. After user has updated the information and clicked <<Save>> button, the changes will be made to the timeline, and at that time, the timeline will show the updated information.
<b>Alternate flow</b>	User clicks <<Edit timeline>> button. User is then able to change the title and duration of the event. If user press <<Cancel>>, the information will not be updated, and user will be sent back to the view of the timelines.
<b>Post-conditions</b>	If successful, the timeline will be updated with the new information and shown correctly. The timeline will be scaled appropriately with the new time entered.

#### 4 General Requirements

<b>Requirement ID</b>	<b>TM-GR1</b>
<b>Use case title</b>	Save timeline
<b>Description</b>	Save timeline object with all created event(s) by clicking <<Save Timeline Object>> button on either a text file or an SQL database.
<b>Primary Actor</b>	User

<b>Pre-conditions</b>	User has loaded or created a timeline.
<b>Success end condition</b>	System saves the timeline as a data file or to an SQL database.
<b>Failure end condition</b>	System is not able to save the object on the timeline and reports failure.
<b>Minimal Guarantee</b>	System failure is stored in a separate log file with details about the failure.
<b>Trigger</b>	Button <<Save Timeline>> is clicked.
<b>Primary flow</b>	User clicks <<Save Timeline>> button and enters a window where a save name can be given to the timeline. The user defines where the timeline should be saved and clicks OK.
<b>Alternative flow</b>	User clicks <<Save Timeline>> button and enters a window where a saved name can be given to the timeline. User leaves the saved name empty, and presses OK. The system shows an error indicating that no name has been given. User returns, enters a name, and clicks OK.
<b>Post-conditions</b>	The timeline object is saved to the defined destination.

<b>Requirement ID</b>	<b>TM-GR2</b>
<b>Use case title</b>	Load timeline
<b>Description</b>	Load saved timeline by clicking <<Load Timeline>> button.
<b>Primary Actor</b>	User
<b>Pre-conditions</b>	A timeline save file exists and its location is reachable by the system.
<b>Success end condition</b>	System loads the the timeline from a .xml file
<b>Failure end condition</b>	System is not able to load the saved timeline and reports failure.
<b>Minimal Guarantee</b>	System failure is shown by an error message.
<b>Trigger</b>	<<Load Timeline>> button is clicked.
<b>Alternative/ Primary Flow</b>	User clicks <<Load Timeline>> button and selects the timeline to be loaded. User clicks <<Load>> button to open this timeline.
<b>Alternative flow</b>	User clicks <<Load Timeline>> button and selects a file that is not a timeline. The system shows an error indicating that an unsupported file has been selected. User returns, selects the timeline file and clicks <<Load>> button to open the timeline.
<b>Post-conditions</b>	User will be able to open the saved timeline.