

Analysis Document

1DV507 - Project Course in Computer Science

Group 1:

Jesper Bergström

Daniel Alm Grundström

Oscar Eklund Berggren

Mustafa Alsaïd

Zacky Kharboutli

Vikrant Mainali

Tomás Vieira Quental Mendes

Non-functional requirements

Documentation

In addition to the program, a comprehensive manual shall be written that explains how a user can do the tasks available in the program. This manual will be written at the end of the development cycle, when most of the implementation is finished.

Usability

To make sure that the final product is easy and intuitive to use, the usability of the user interface will be taken into extra consideration during the design phase.

Functional requirements

Base requirements

These are the requirements that must be fulfilled in order for the project to be considered complete.

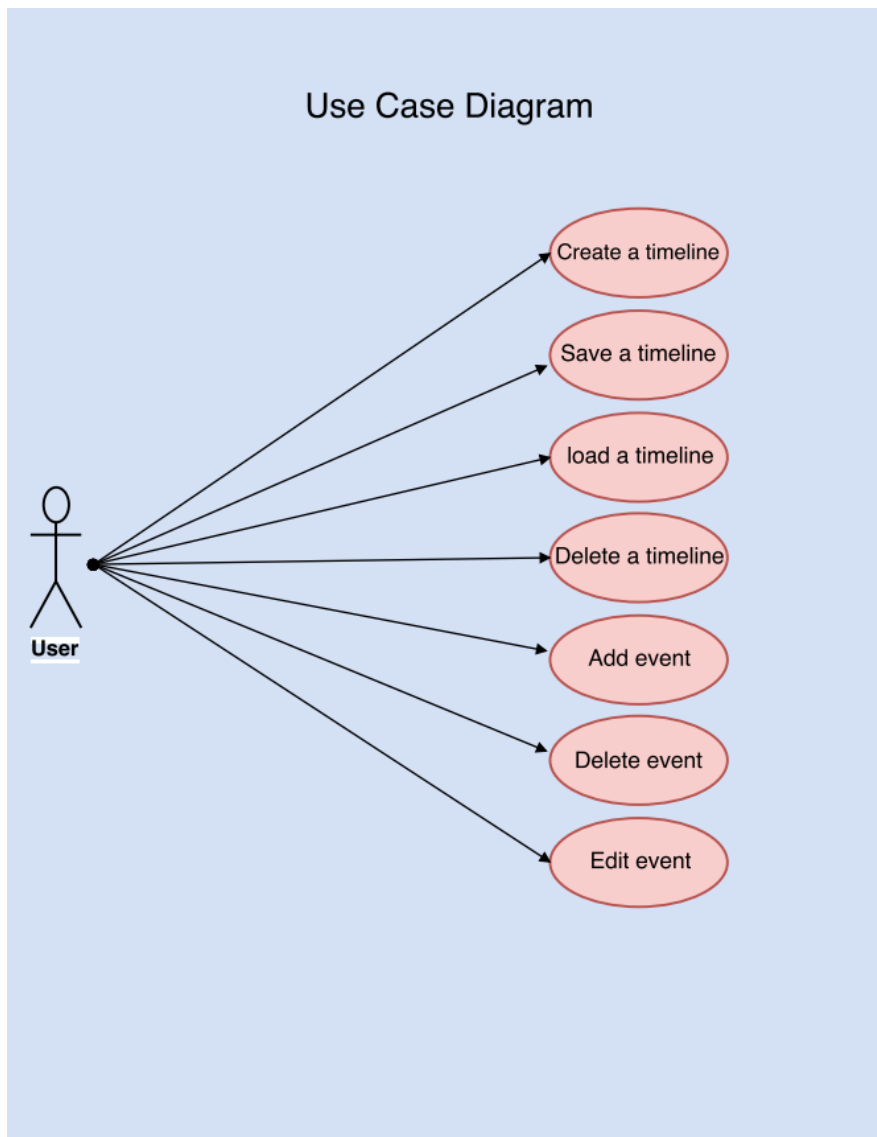
ID	Requirement
R1	The user shall be able to create any number of new timelines.
R1.1	When adding a timeline, the user shall be able to specify a name for the timeline.
R1.2	When adding a timeline, the user shall be able to specify a start and end time for the timeline.
R2	The user shall be able to delete an entire timeline.
R2.1	Before a timeline is deleted, the user shall be prompted to confirm the deletion.
R3	The user shall be able to save a timeline to a text file.
R4	The user shall be able to open a timeline from a text file.
R5	The user shall be able to add any number of events to a timeline.
R5.1	When adding an event, the user shall be able to specify whether it is an event with duration or without duration.
R5.2	When adding a duration event, the user shall be able to specify a title, description as well as a start date and end date.
R5.3	When adding an event without duration, the user shall be able to specify a title, description and the date on which the event occurs.
R6	The user shall be able to delete an event on a timeline.
R7	The user shall be able to edit an event's title, description or date(s).
R8	The user shall be able to switch between create mode and display mode with a toggle button.
R9	When a timeline is displayed, all its events shall be shown.
R9.1	The events shall be placed at the correct time in the timeline.
R9.2	The title shall be shown for all events.
R9.3	For events with duration, the time span shall be shown with a bar.
R9.4	For events without duration, the events shall be shown as points on the timeline.
R9.5	If all events on the timeline cannot be shown on the screen, the user shall be able to scroll horizontally and/or vertically.
R10	The user shall be able to switch between open timelines via a dropdown menu.
R11	When hovering the mouse over an event, a popup shall appear showing title, description and date(s) for the event.

Extra requirements

These lower priority requirements are not strictly necessary for the final product but are requirements that we feel will improve the usability and the overall quality of the program.

ID	Requirement
E1	The user shall be able to change start and end date for a duration event visually by clicking and dragging its edges.
E2	The user shall be able to specify a color for an event when creating it. When editing an event, the user shall also be able to change the color.
E3	The user shall be able to change the background color of a timeline.
E4	The user shall be able to mark one or more events on a timeline as important.

Use Case Diagram



Timeline and Event Use Cases

Use Case	TUC-01: Create a timeline
Description	For the user to use the application, a timeline needs to be created with a name and a duration.
Preconditions	<ol style="list-style-type: none">1) Users can create timelines2) Users can enter names for their timeline3) Users can enter duration for their timeline
Actor(s)	User
Normal Sequence	<ol style="list-style-type: none">1) The user requests to create a new timeline2) User is prompted to a new window where they can enter the details of their timeline (name and duration)3) Timeline is created
Postconditions	A new timeline should be created and visible
Exceptions	<ol style="list-style-type: none">1) If the user does not input a name or date, they are prompted to update those correctly
Comments	For now, we have only considered adding a timeline with parameters name and duration, there are many other implementations that can be added to it such categories, priority, etc.

Use Case	EUC-01: Add an event
Description	An event will be added by the user to the timeline. The Event should hold a few properties: Start time, End time, Description, Title, etc.
Preconditions	<ol style="list-style-type: none"> 4) An event object for this type of event exists. 5) An event can be added to a timeline.
Actor(s)	User
Normal Sequence	<ol style="list-style-type: none"> 1) The user clicks a button to add a new event. 2) A new window will pop up, where the user will enter information for the event. This information consists of: Title, description, start time, end time, etc. 3) Event will be added to timeline.
Postconditions	The event is added to the timeline.
Exceptions	The start time cannot be bigger than the end time.
Comments	-

Use Case	EUC-02: Edit an event
Description	The information of an event already added to the timeline will be edited. You will change the values for the different types of information of the event such as: start time, end time, description, title, etc.
Preconditions	<ol style="list-style-type: none"> 1) An event can be added to the timeline. 2) The information of the event can be accessed.
Actor(s)	User
Normal Sequence	<ol style="list-style-type: none"> 1) The user selects an event in the timeline and a window or box with the event information pops up. 2) In the window, there will be a button for editing the event. When the button is pressed, the information will be editable. 3) When the user is done editing the information, a “save” button will be pressed and the new information will be saved.
Postconditions	The edited information of the object should match the information that was entered.
Exceptions	The start time cannot be bigger than the end time.
Comments	-

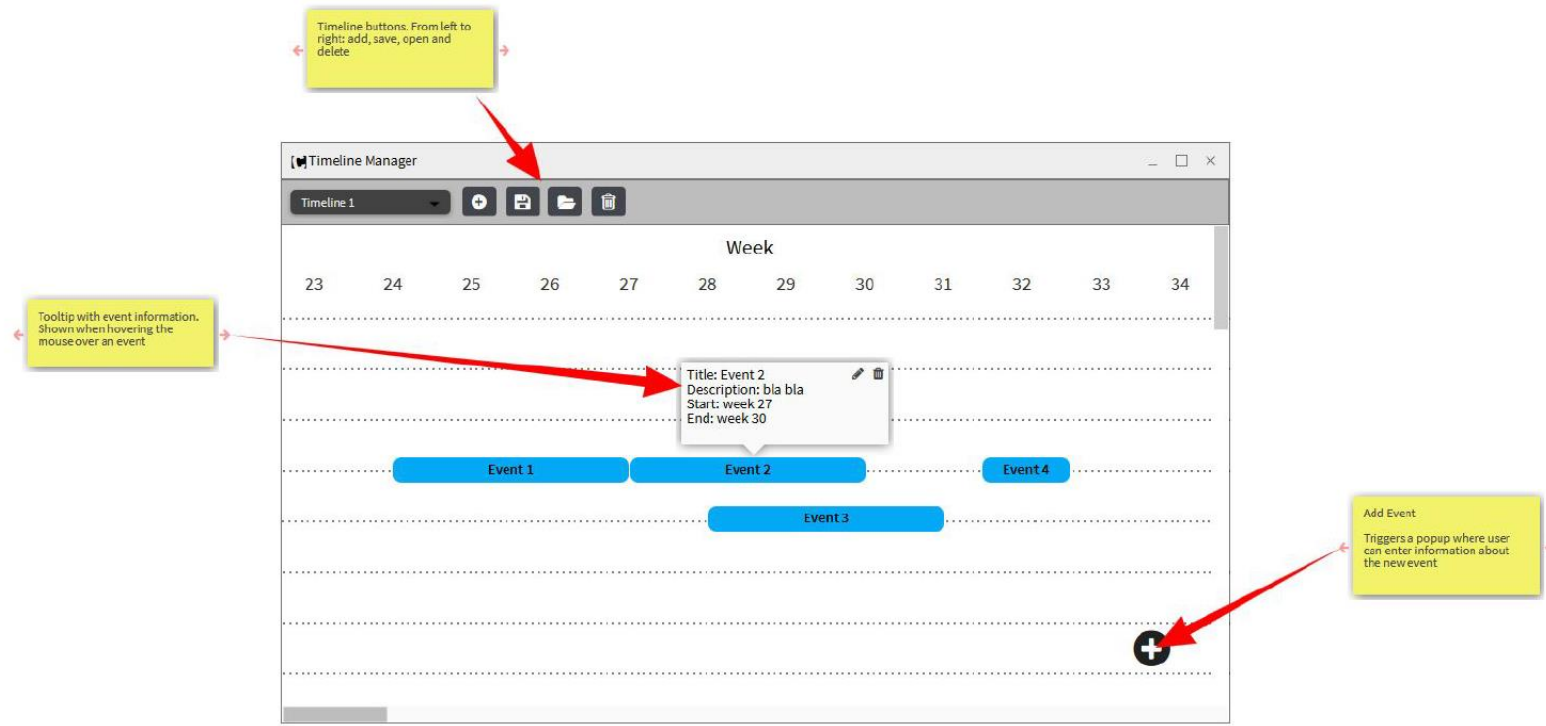
Use Case	EUC-03: Delete an event
Description	An event already added to the timeline will be deleted by the user. When an event is deleted, it means that it is removed from the timeline.
Preconditions	<ol style="list-style-type: none"> 1) An event can be added to a timeline. 2) An event in the timeline can be selected and viewed.
Actor(s)	User
Normal Sequence	<ol style="list-style-type: none"> 1) The user selects an event in the timeline and a window or box with the event information pops up. 2) In the window, there will be a button for deleting the event. When the button is pressed, the event will be deleted from the timeline.
Postconditions	The event should be deleted from the timeline.
Exceptions	-
Comments	-

Use Case	TUC-02: Save timeline
Description	After the creation of a timeline, the users should be able to save it to load it in the future so they can view it.
Preconditions	1) Users have created a timeline
Actor(s)	User
Normal Sequence	<ol style="list-style-type: none"> 1) User clicks on the save button 2) User is prompted to choose a location to store the timeline (using JavaFX File Chooser) 3) The timeline is then stored as a unique file (since we can have multiple timelines and do not want all information to be saved on one file)
Postconditions	Timeline should be saved in the target location
Exceptions	-
Comments	This should be a basic save function allowing the user to save their timeline to a location of their choice.

Use Case	TUC-03: Load timeline
Description	The users should be allowed to load the timeline they saved using the save key so that they can view their timeline.
Preconditions	<ol style="list-style-type: none"> 1) Timeline has been created 2) Timeline has also been saved
Actor(s)	User
Normal Sequence	<ol style="list-style-type: none"> 1) User clicks on the load file button 2) User is then prompted to a window where they locate and choose the file to open (again, using File Chooser) 3) The timeline file that user chooses is opened
Postconditions	Timeline is loaded onto the client
Exceptions	<ol style="list-style-type: none"> 1) User chooses a non-timeline file 2) User is prompted with an error
Comments	Again, another simple file loader where the user can load the saved timelines, if the user tries to load another type of file then they should be prompted with an error.

Use Case	TUC-04: Delete timeline
Description	The user should be able to create a timeline they have created (for example after the events in the timeline are complete).
Preconditions	<ol style="list-style-type: none"> 1) Timeline has been created
Actor(s)	User
Normal Sequence	<ol style="list-style-type: none"> 1) User picks the timeline to be deleted 2) User deletes the timeline using the delete function 3) Timeline is then deleted
Postconditions	Deleted timeline should not exist
Exceptions	-
Comments	This function should allow the user to manage their client by clearing up unused and/or outdated timelines.

User Interface design mock-up



Github repository: <https://github.com/Kramg0/Timeline-Manager>