

Cairo University

Faculty of Computers and Information



SCS351

Software Modeling

FCI image Toolbox

Software Requirements

Specifications

Team Names

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Month & Year

March 2020



SCS351: Phase 2-Corona Team

Project: FCI image Toolbox

Software Design Specification

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Document Purpose and Audience

The purpose of this document is to give an in-depth insight description of FCI image Toolbox. It will provide an overview of our software product by collecting and analyzing all assorted ideas that have come up to define such product, and its detailed requirements with respect to customers. It defines how our client, team and audience see the product and its functionality.

This document is intended for the stakeholders, mainly for the **customers, designers and developers** of the software.

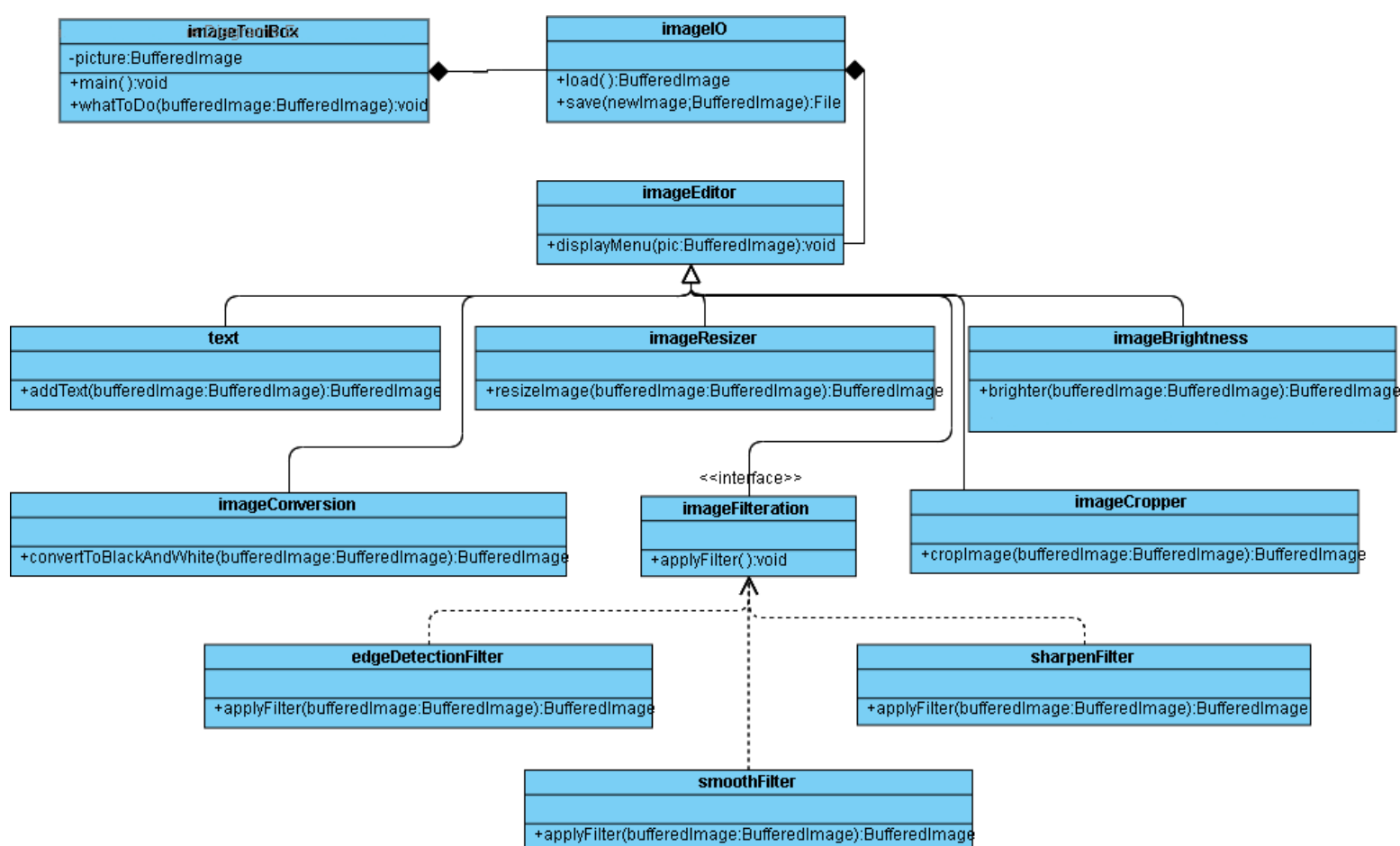
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System Models

I. Class diagram:





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II. Class diagram table:

| Class Name | Description & Responsibility |
|-----------------|--|
| imageToolBox | This is the main class (UI). |
| imageIO | This is a controller class of image class that controls the main operations of this class. This class is also responsible for saving or loading PNG images from the user . |
| imageEditor | This class is responsible for displaying the menu to the user. Also, there is a composition relationship with imageIO class. |
| imageBrightness | This class inherits from imageEditor class. This class is responsible for brightening images . |
| imageCropper | This class inherits from imageEditor class. This class is responsible for cropping images to certain size entered by the user. |
| text | This class inherits from imageEditor class. This class is responsible for adding text to images. |
| imageResizer | This class inherits from imageEditor class. This class is responsible for resizing images to certain length and width. |
| imageConversion | This class inherits from imageEditor class. This class is responsible for converting colored images into black and white one . |
| imageFiltration | This class is interface class. |
| sharpenFilter | This class implements from imageFiltration class and responsible for one function "applyFilter(bufferedImage:BufferedImage):BufferedImage" |



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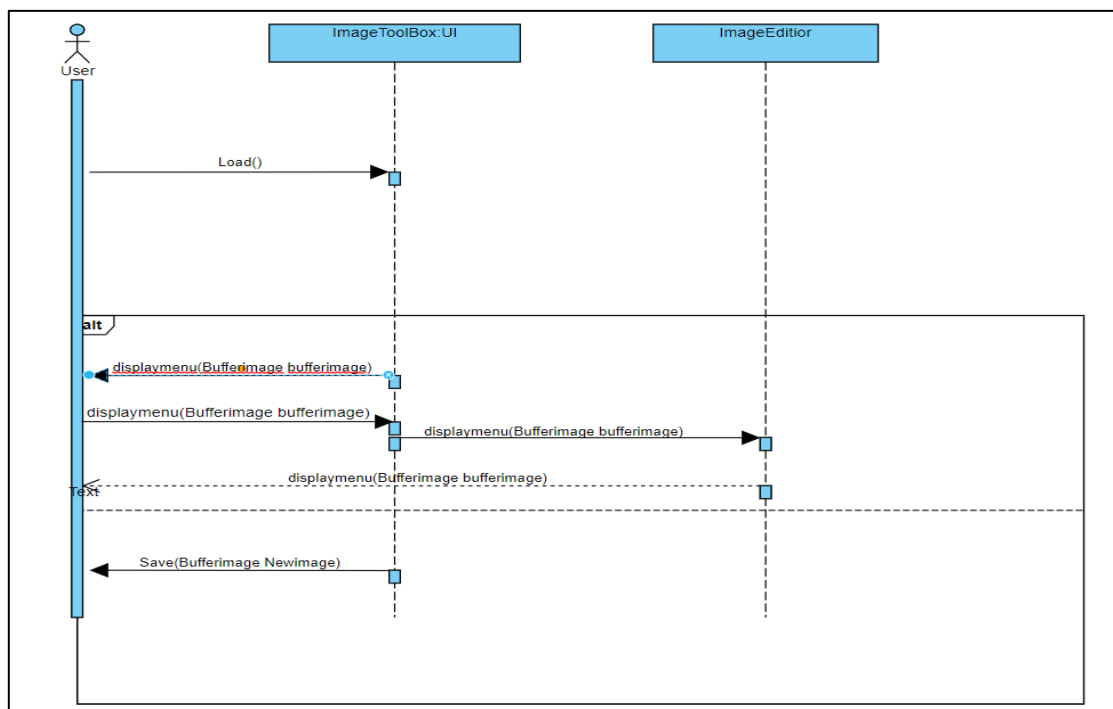
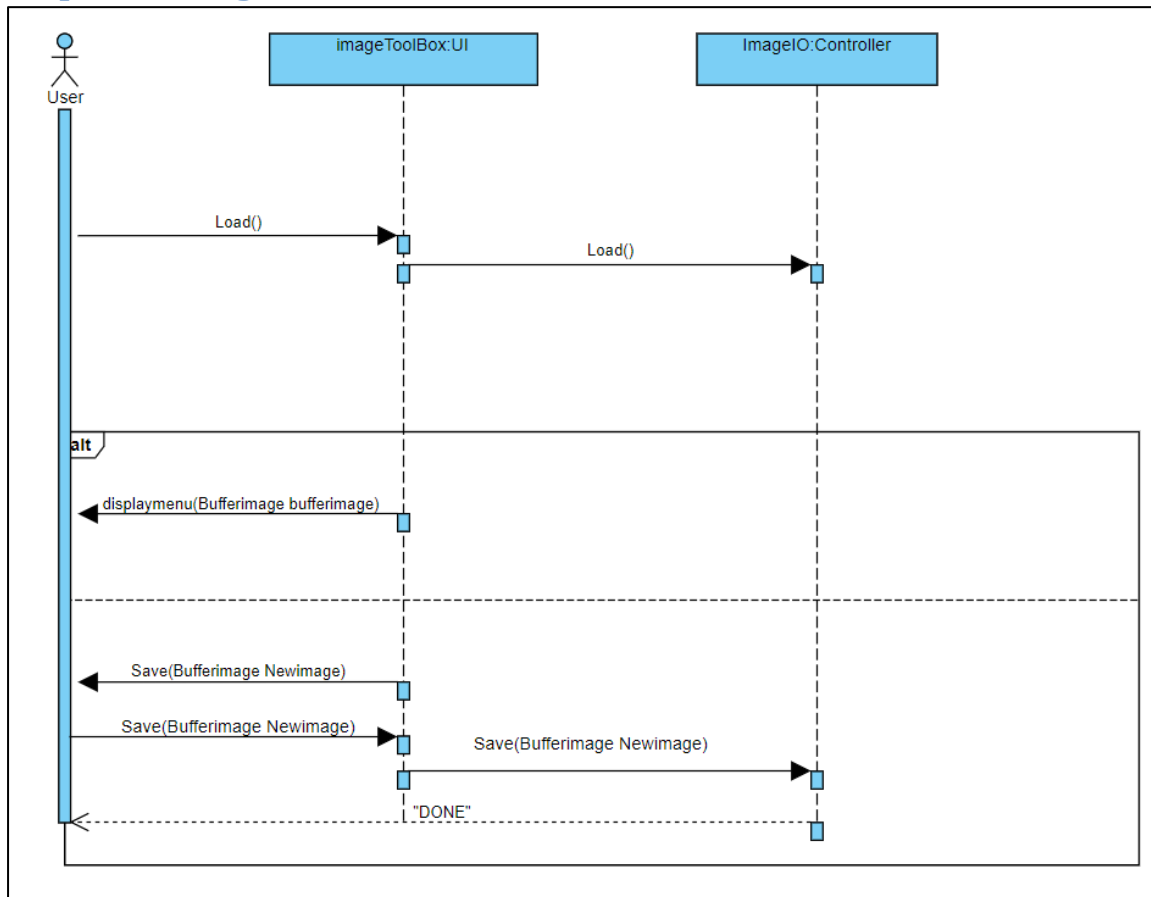
| Class Name | Description & Responsibility |
|------------------|--|
| smoothFilter | This class implements from imageFiltration class and responsible for one function “applyFilter(bufferedImage:BufferedImage):BufferedImage” |
| edgeDetectFilter | This class implements from imageFiltration class and responsible for one function “applyFilter(bufferedImage:BufferedImage):BufferedImage” |

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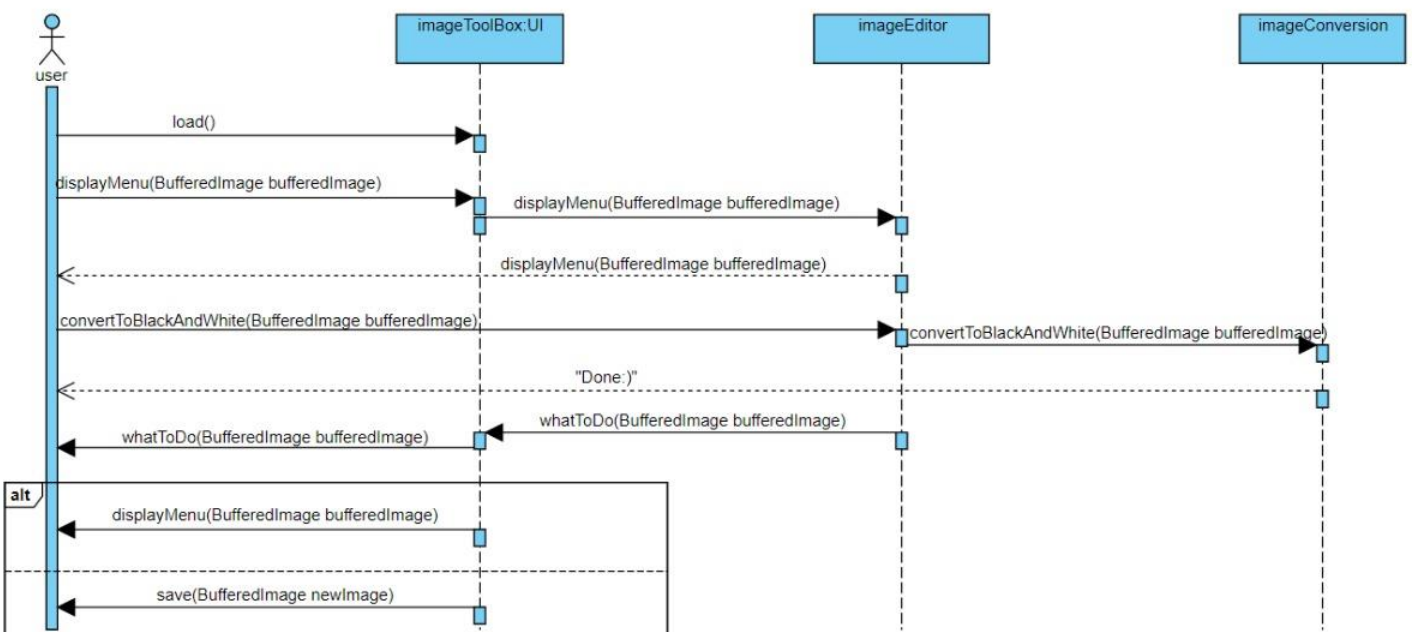
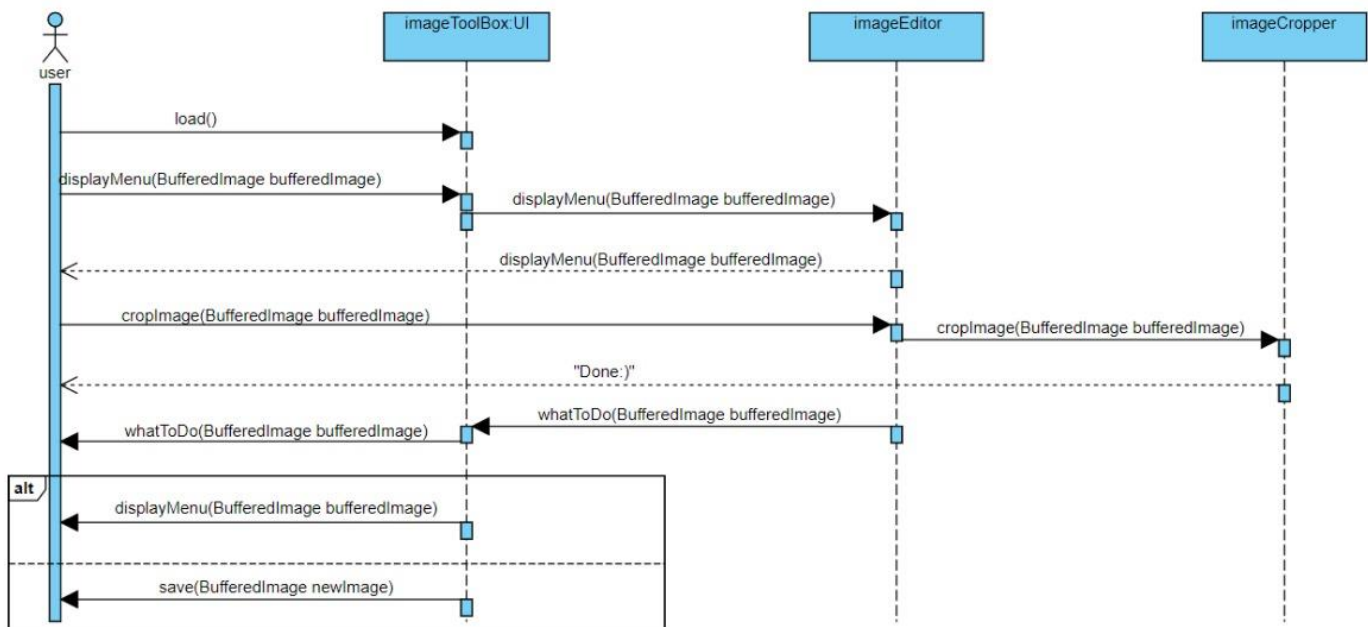
II. Sequence diagrams:



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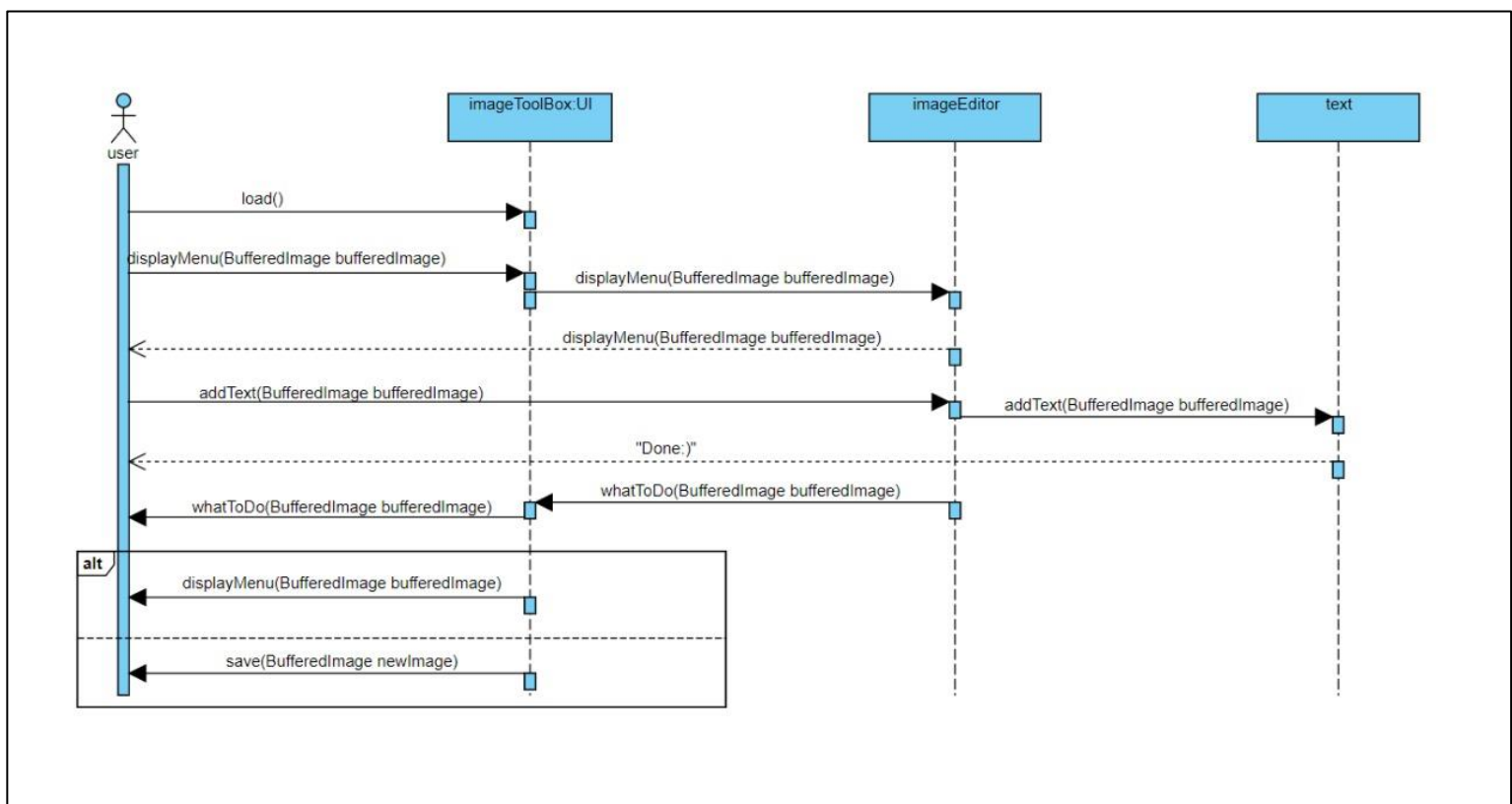
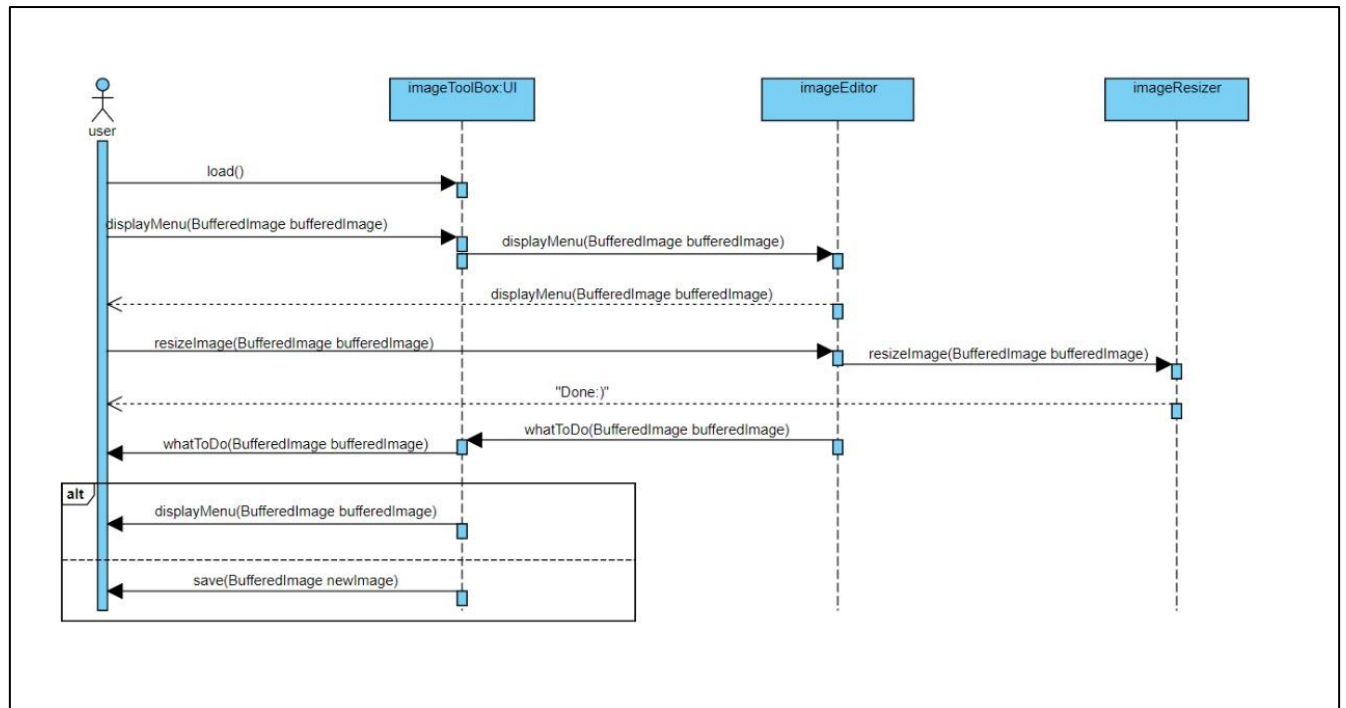
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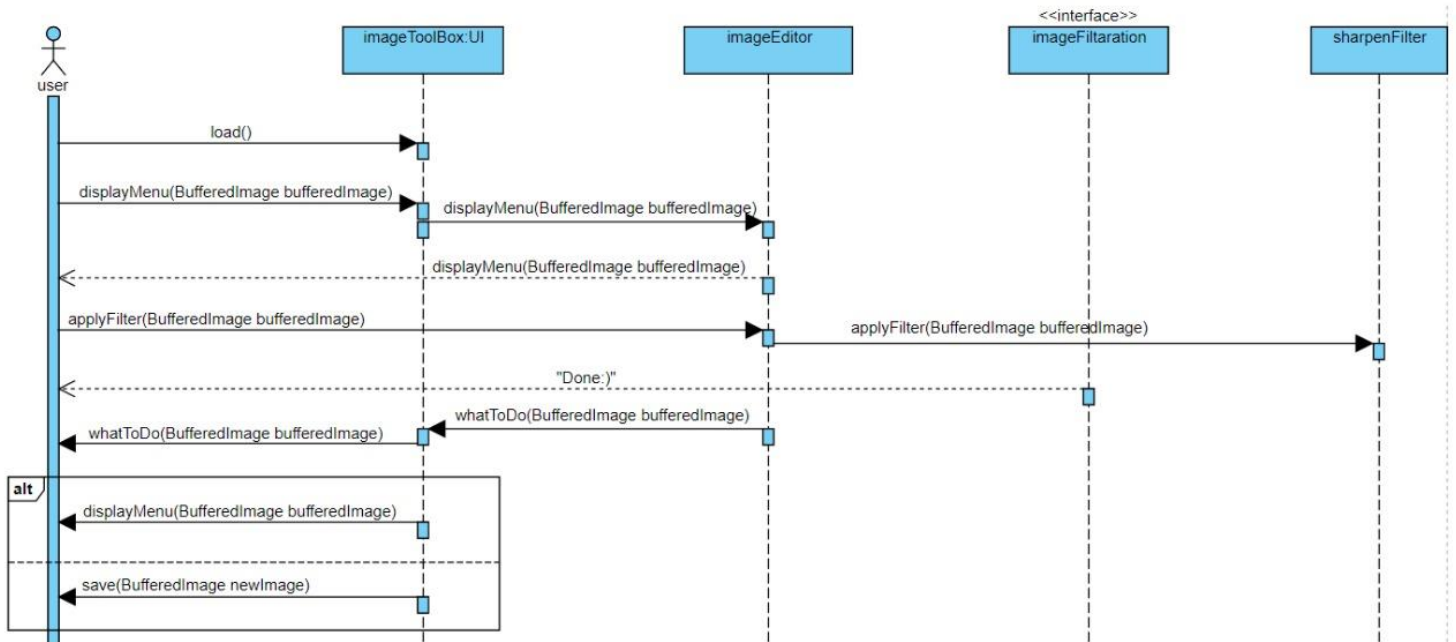
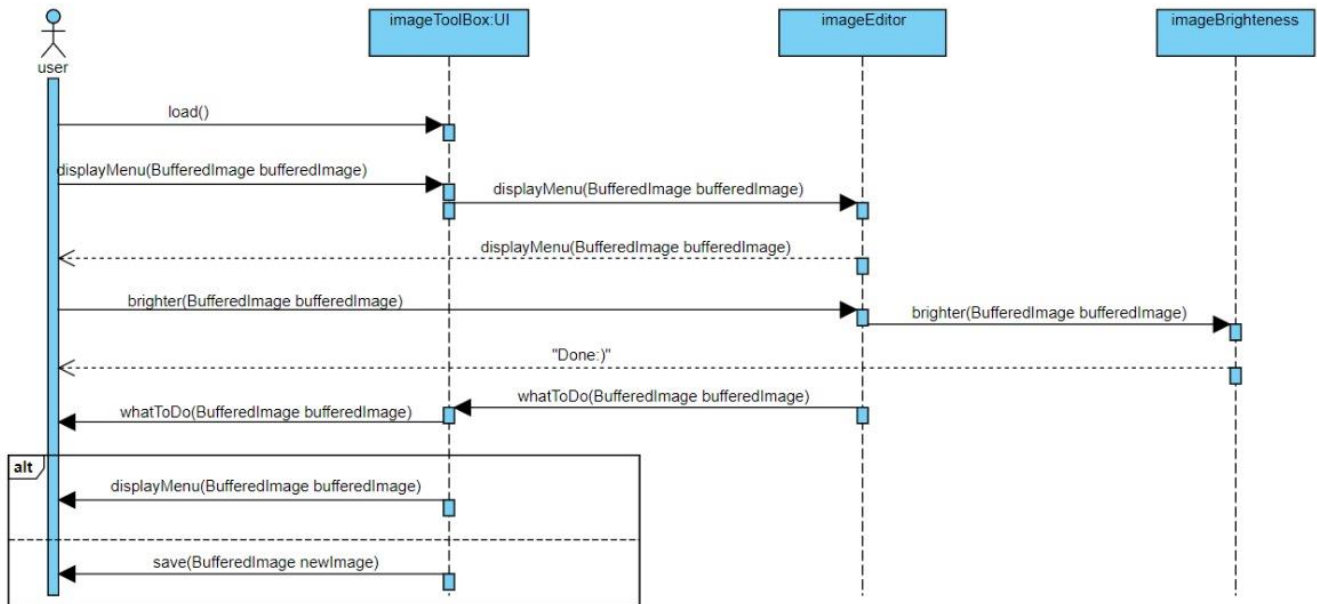
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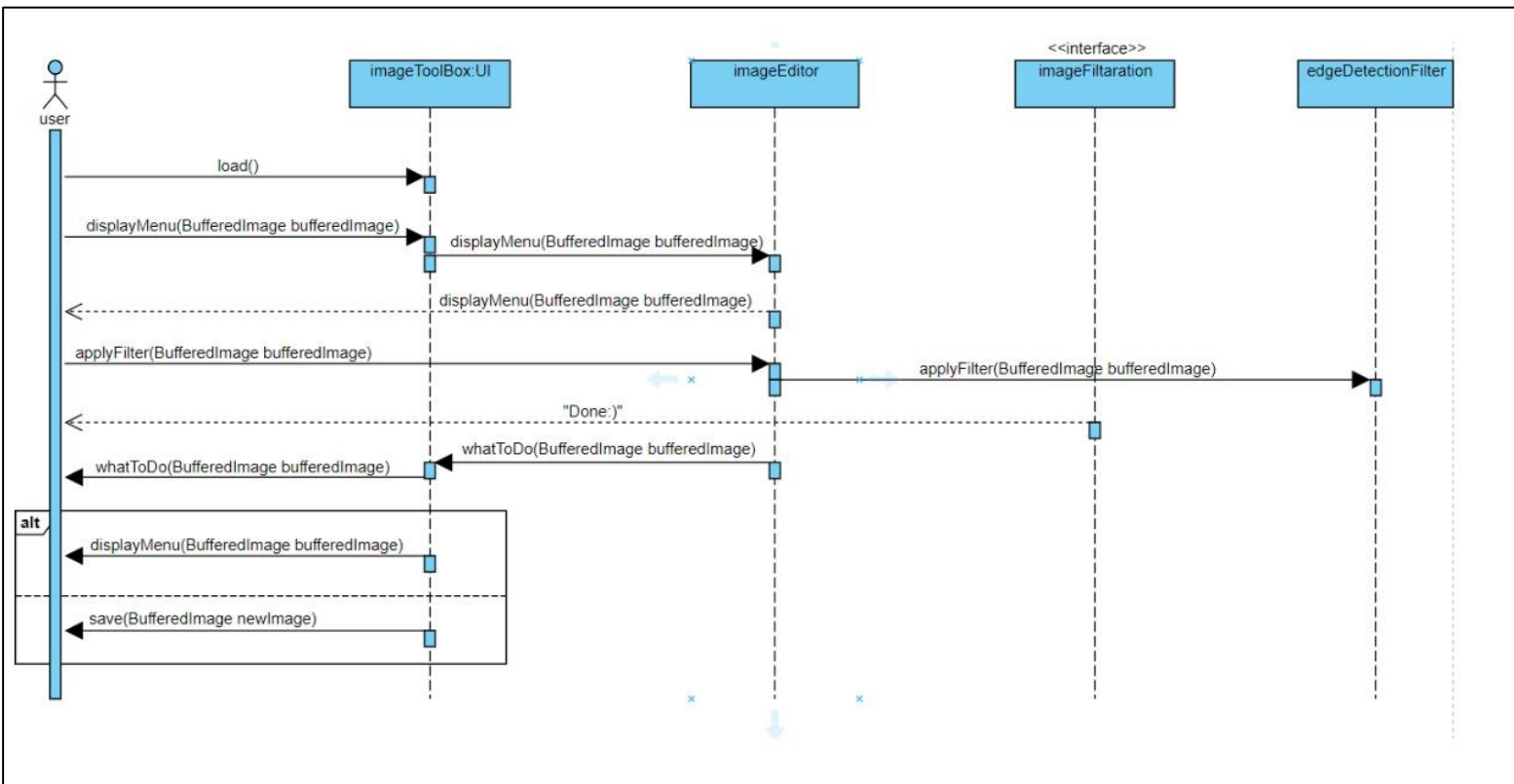
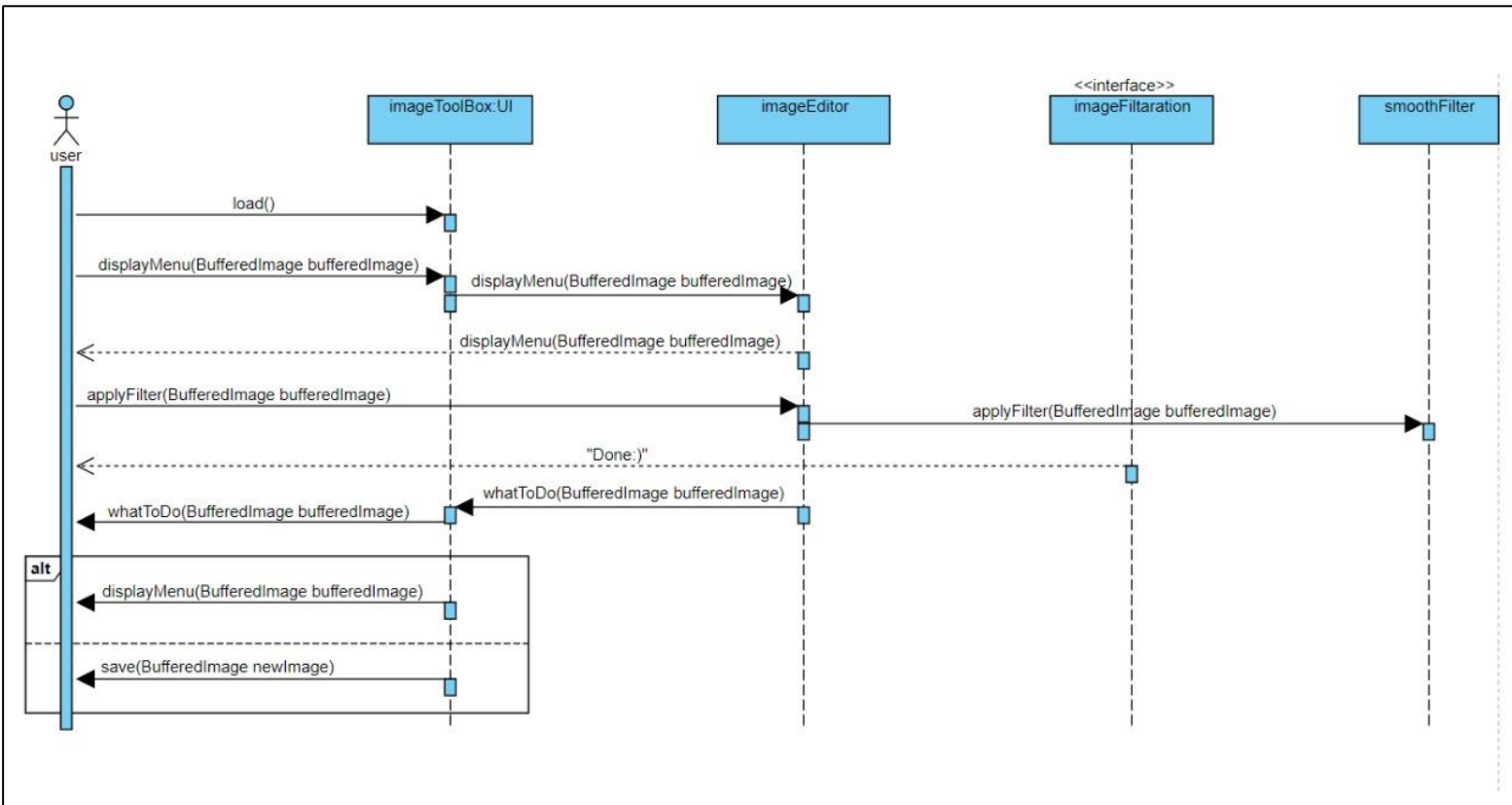
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Class - Sequence Usage Table:

| Class Name | Sequence Diagrams | Overall used methods |
|-----------------------------|-------------------|--|
| imageToolbox imageIO | 1 | main():void whatToDo(bufferedImage:BufferedImage):void load():BufferedImage save(newImage:BufferedImage):File |
| imageToolbox imageEditor | 2 | displayMenu(pic:BufferedImage):void save(newImage:BufferedImage):File |
| imageCropper | 3 | cropImage(bufferedImage:BufferedImage):BufferedImage |
| imagconversion | 4 | convertToBlackAndWhite(bufferedImage:BufferedImage):BufferedImage |
| imageResizer | 5 | resizeImage(bufferedImage:BufferedImage):BufferedImage |
| text | 6 | addText(bufferedImage:BufferedImage):BufferedImage |
| imageBrightness | 7 | brighter(bufferedImage:BufferedImage):BufferedImage |
| sharpenFilter | 8 | applyFilter(bufferedImage:BufferedImage):BufferedImage |
| smoothFilter | 9 | applyFilter(bufferedImage:BufferedImage):BufferedImage |
| edgeDetectionFilter | 10 | applyFilter(bufferedImage:BufferedImage):BufferedImage |

Ownership Report:

Everything is done by all team members.