IMAGE ALBUM

Design Document: Version 3

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CLASS TABLE

Class Name	**Responsibilities**	**Collaborators**
ImageAlbum	Image album class will be responsible for creating overall GUI and running the application.	ViewMode
EditMode	Class that will be responsible for editing the images. For example, user will be able to rotate, resize or crop certain image.	Command Interface
ViewMode	Class to determine how the user interface should display and what operations should be available.	ImageAlbum EditMode Command Interface
ImgComponent	Abstract class to define Image and Album subclasses part of the Composite pattern	ViewMode Command Interface
Command Interface	Interface for defining and executing commands	Concrete command classes

Class Diagrams

Overview

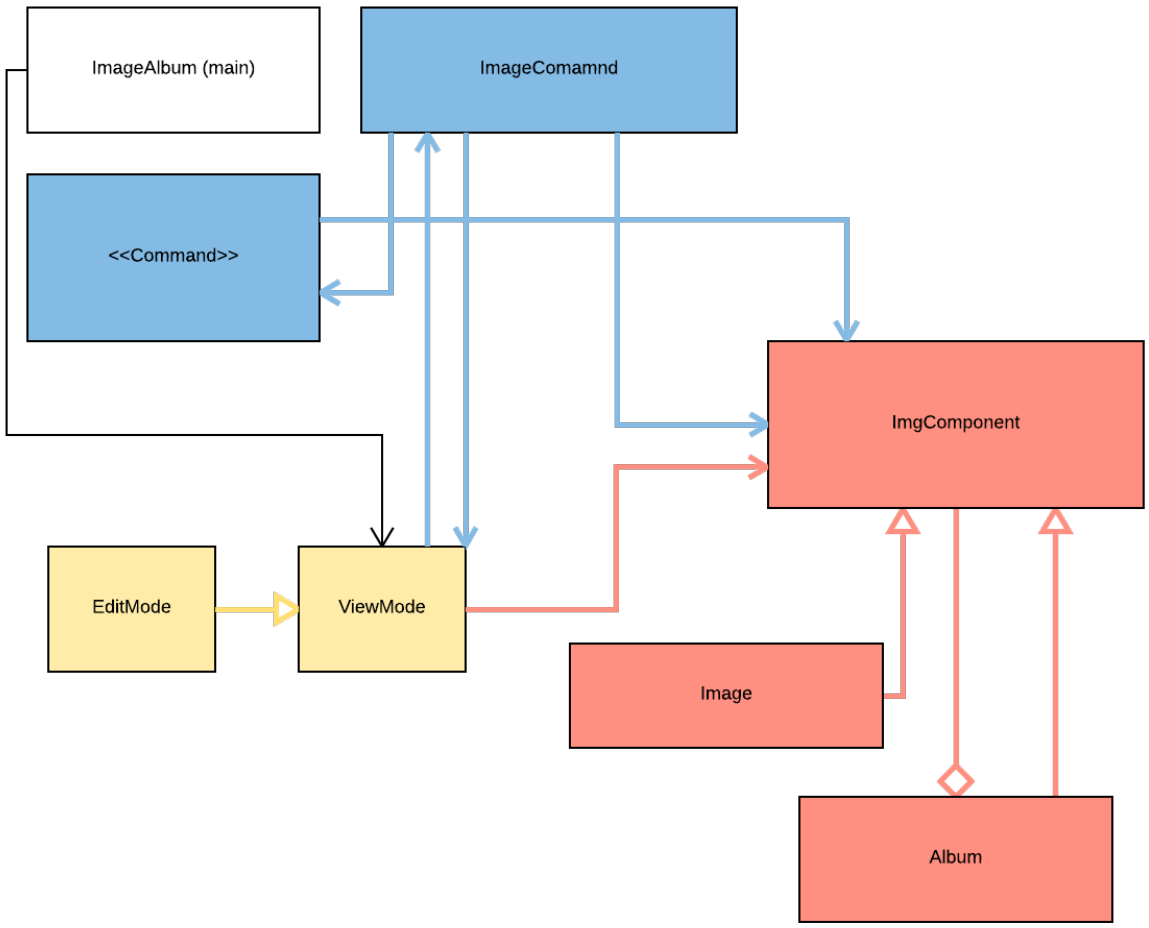

Figure 1 – General system overview

Figure 1: This image is showing the general organization of classes. Also provided are relationships and all the interfaces that are needed for the command and composite patterns.

CLASS DIAGRAMS CONT.

VIEWMODE

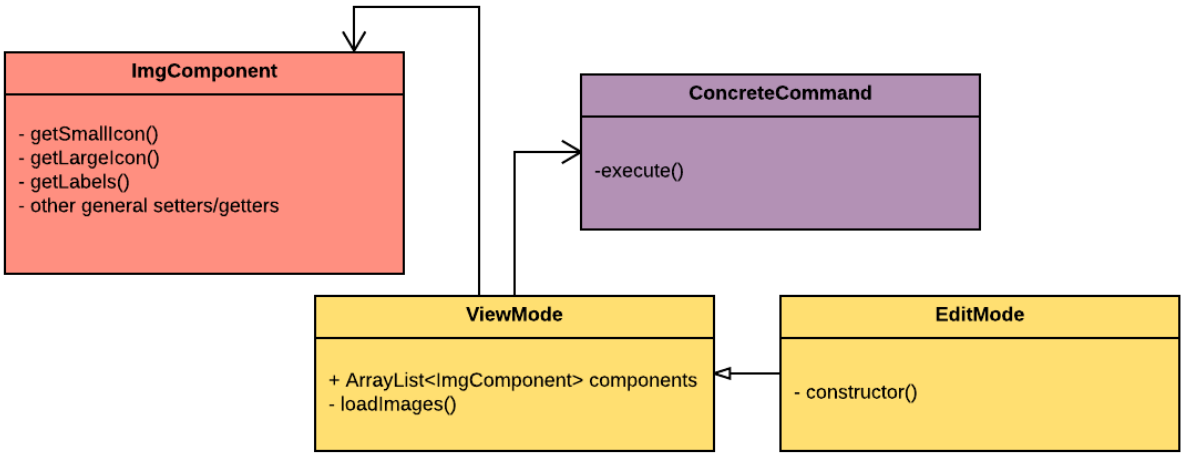

FIGURE 2 – VIEWMODE CLASS DIAGRAM

Figure 2: This diagram shows the ViewMode class, which handles user interaction when the user is browsing images, searching images, or adding labels. The ViewMode can have a different mode, called EditMode, which displays elements needed for user interaction with image manipulation. ViewMode also has associated ImageCommands that refer to commands such as adding a label and searching.

PATTERN SPECIFIC CLASS DIAGRAMS

COMMAND PATTERN

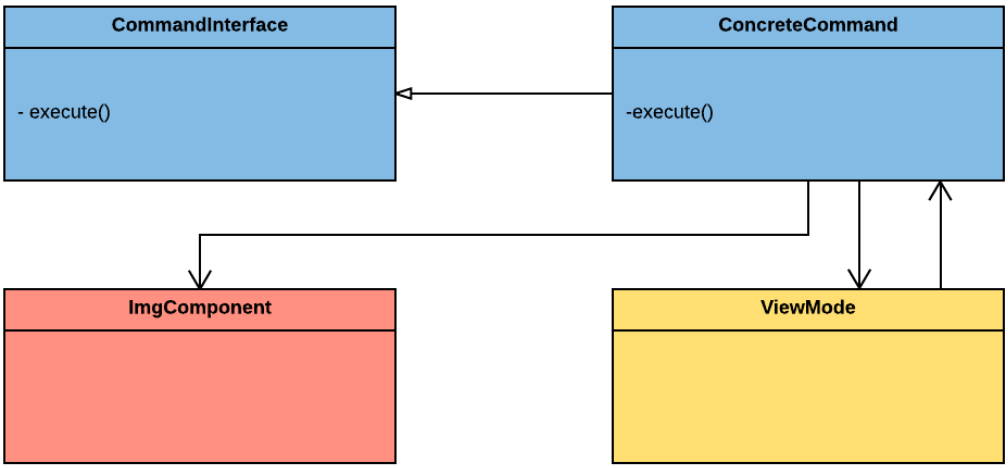

FIGURE 3 – THE COMMAND PATTERN

Figure 3: Command pattern will issue requests to objects without knowing anything about the receiver of the request or about how this operation is done. Receiver will have knowledge of what to do to handle the request, in our case that will be class called ViewMode. Invoker, in our case ImgComponent, will hold a command and will get a command to execute the request by calling the execute method.

COMPOSITE PATTERN

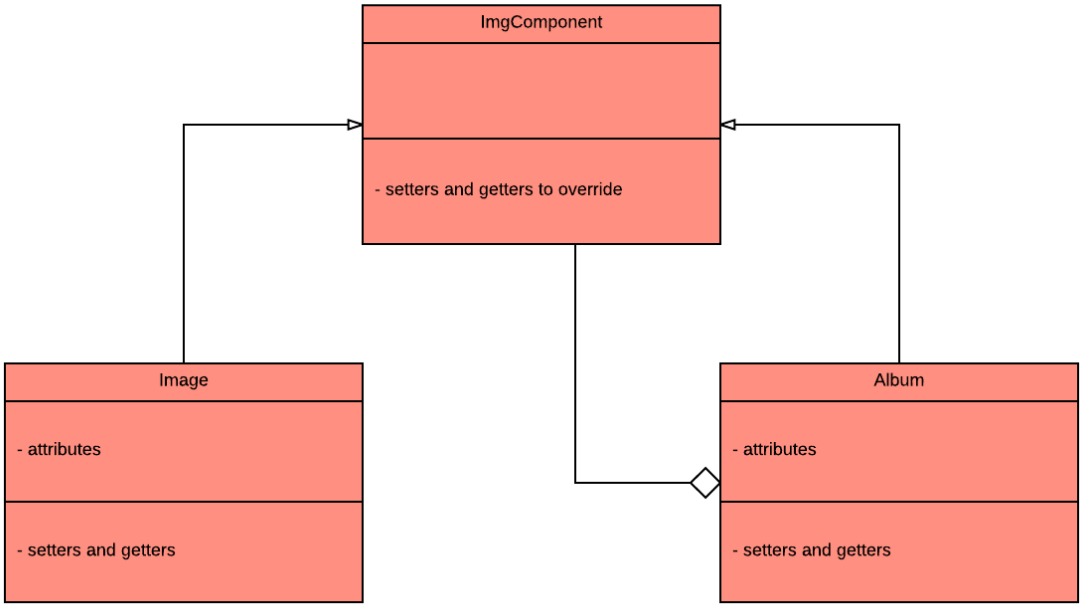

FIGURE 4 – THE COMPOSITE PATTERN WITH IMGCOMPONENTS

Figure 4: ImgComponent will declare the abstract class for all the objects that are in the composition. It will also declare methods for managing child components. Album and Image will use ImgComponent class whose purpose will be to create Image and Album objects to be viewed in the program.

PATTERN RATIONALE

COMMAND PATTERN

- The command pattern will be used in implementing the tools used during the EditMode of the program and the general ViewMode.

COMPOSITE PATTERN

- The Composite pattern will be used in implementing the Album-Image relationship

Sequence Diagrams

Add Label

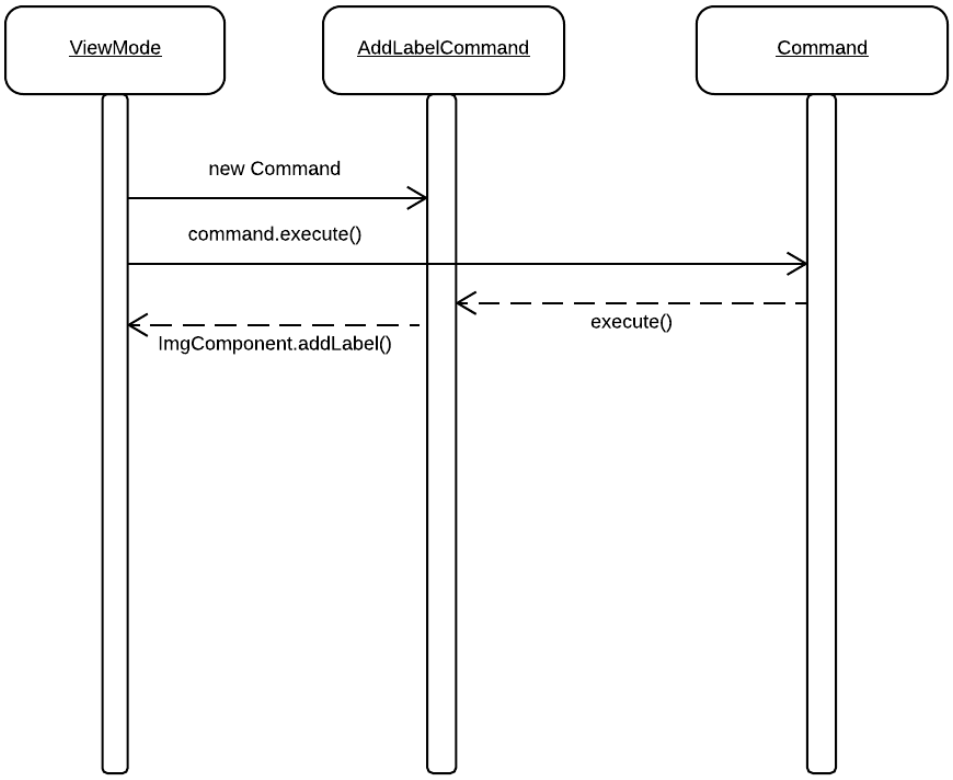

Figure 5. Add Label to a Component

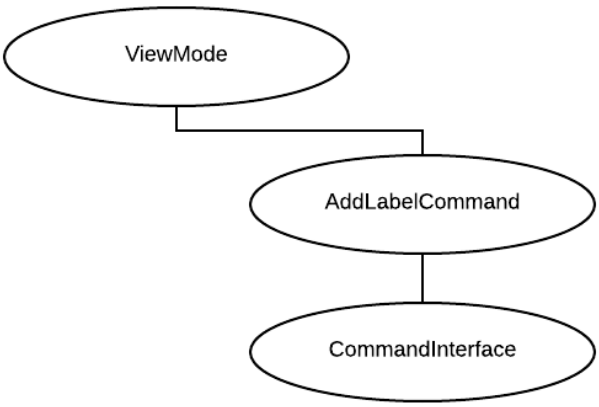

Figure 6. Object Diagram CORR. Fig. 5

CROP IMAGE

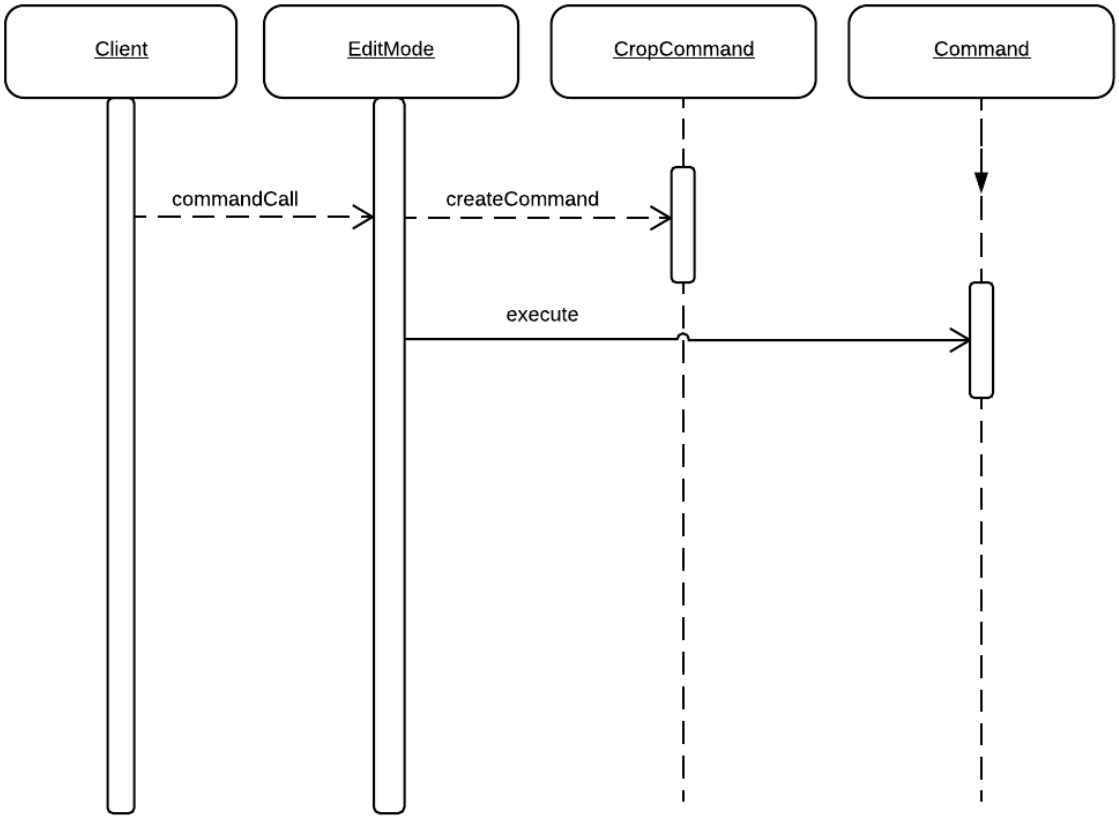

FIGURE 7. CROP IMAGE WITH A COMMAND

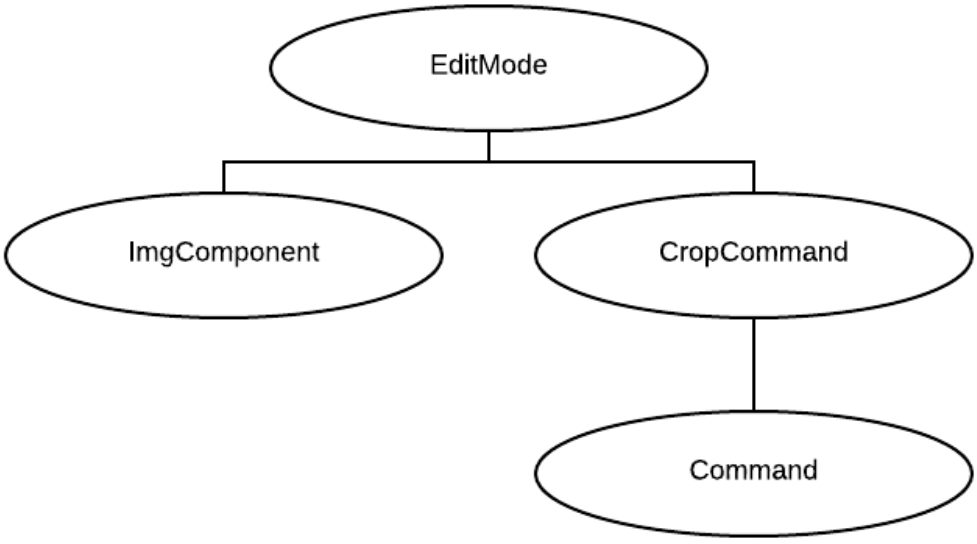

FIGURE 8. OBJECT DIAGRAM CORR. FIG. 7

SEARCH

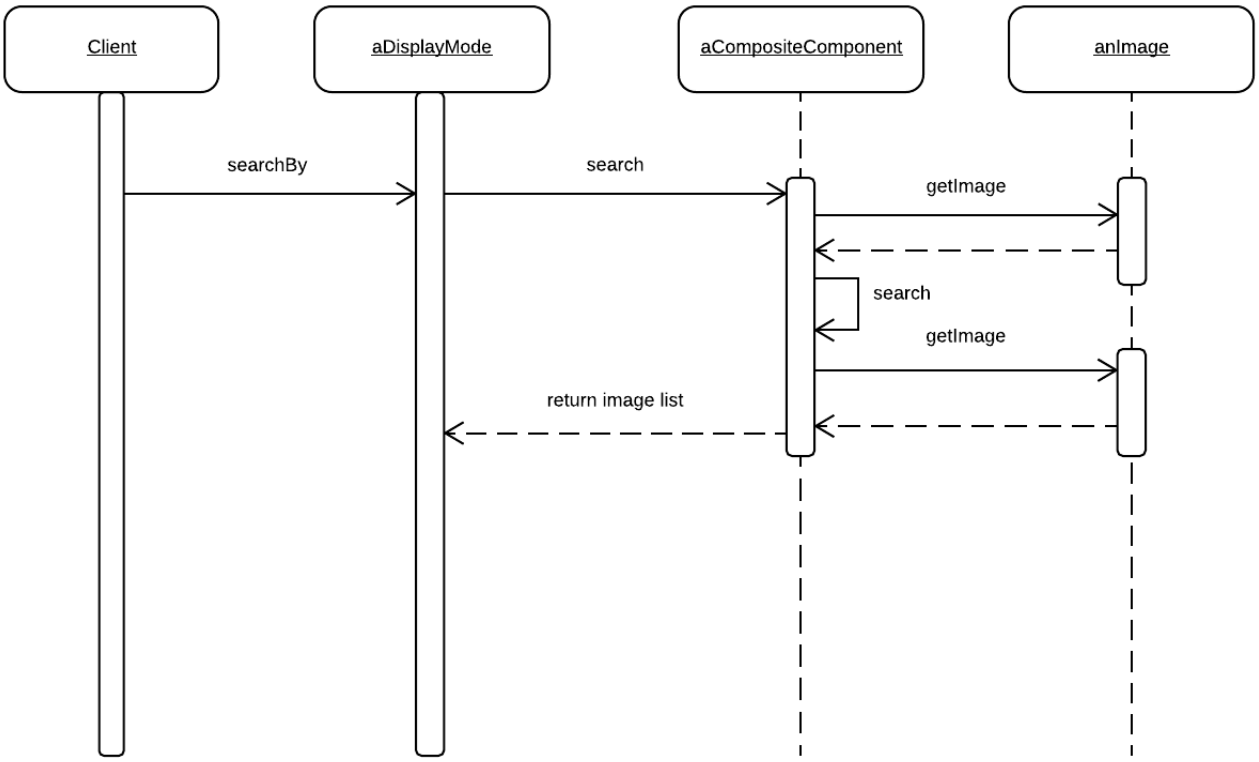

FIGURE 10. SEARCH FOR COMPONENTS

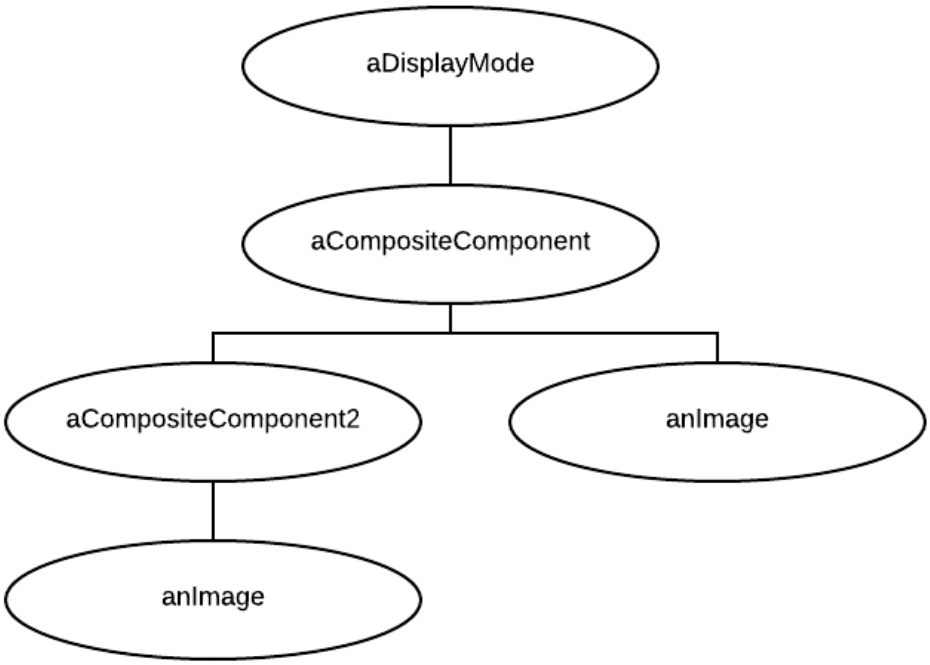

FIGURE 9. OBJECT DIAGRAM CORR. FIG. 9