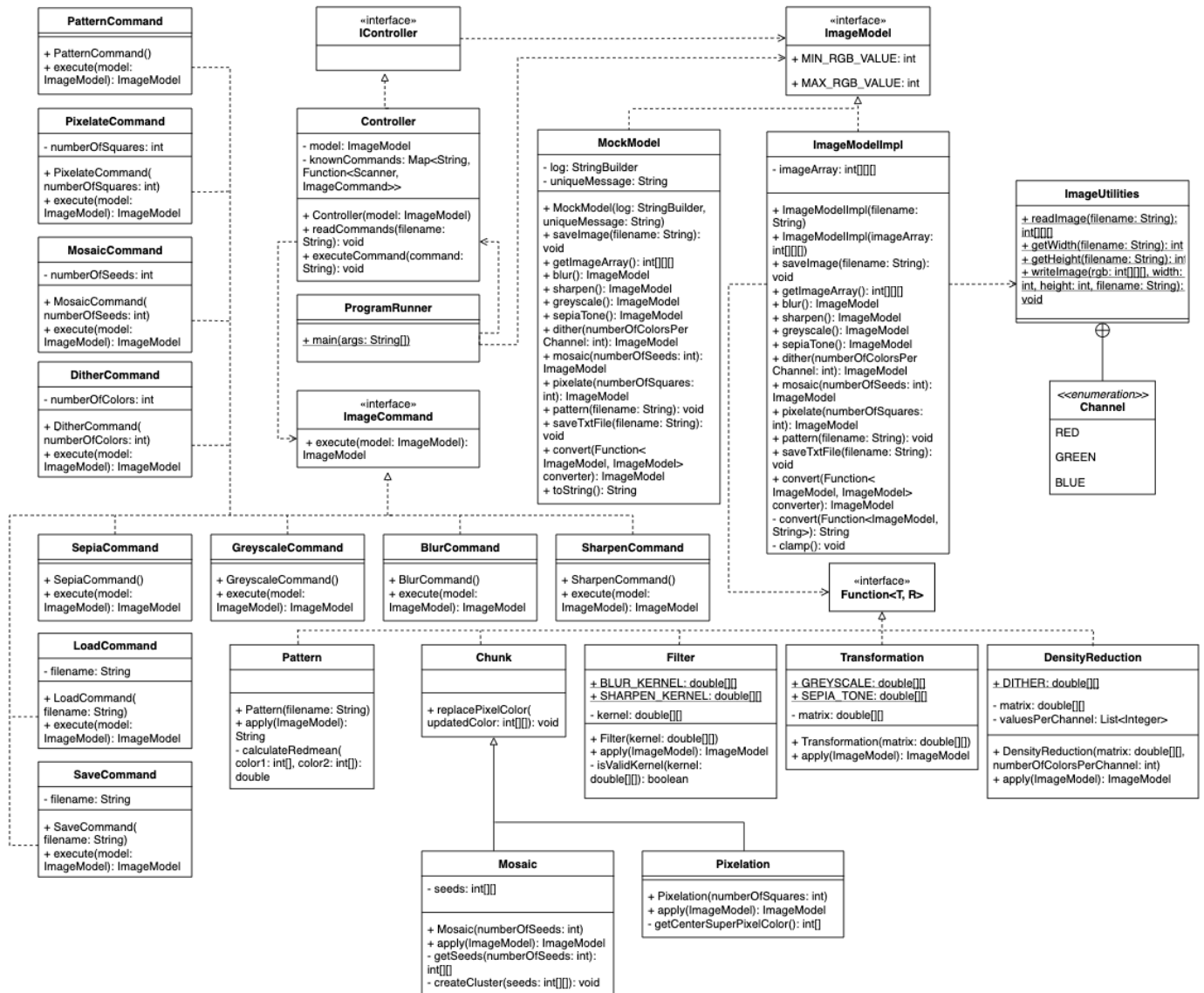
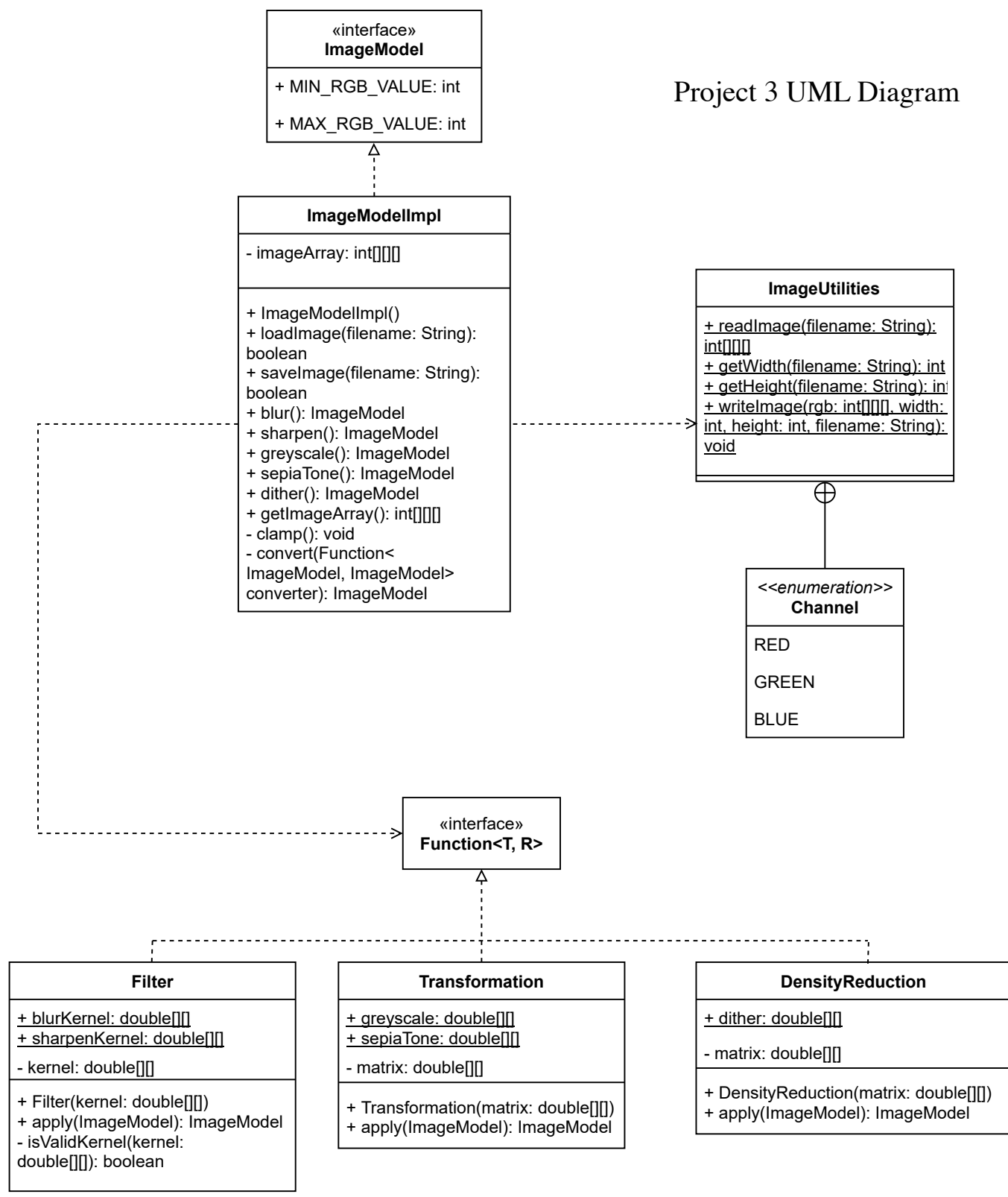


Project 4 UML Diagram



Project 3 UML Diagram



Project 4 Testing Plan

Student Name: Xinyu Hou

Assumptions Made:

- (1) An Image needs to be pixelated first before the user tries to create a cross-stitch pattern from the image.
- (2) For the mosaic() method, the number of seeds should not exceed the number of pixels in the image.
- (3) For the pixelate() method, the number of squares across the width of the image should not exceed the width of the image.

The student plan to create a “mock” model class, MockModel, which implements the ImageModel interface. In this way, the student can make sure that the controller, in isolation, works correctly. Since the return type of many methods in my ImageModel interface is ImageModel, I will override the toString() method in the MockModel class and use assertEquals() to make sure that the controller is transmitting the output correctly.

MockModel

```
StringBuilder log = new StringBuilder();
ImageModel model = new MockModel(log, "Message1");
IController controller = new Controller(model);
controller.readCommands(**Input**);
```

Testing MockModel and Controller	Input	Expected Output
Unknown commands	saveload	Unknown command saveload
	load123 goat.png	Unknow command load123
Trying to make changes to an image without loading it	save goat-dither.png	Error message: Image has not yet been loaded
Known command but is not followed by a number	dither	Error message: Incomplete command
	mosaic	
	pixelate	
Known command but followed by an invalid number/input	dither abc	Error message: Fail to execute command because of invalid input
	mosaic 800000 (the number of seeds is greater than the number of pixels)	
	pixelate -100 (the number should be positive)	
	load width10-image.png pixelate 50 (Trying to pixelate 50 an image when the width of the image is only 10)	
Trying to pattern an image	load goat.png	Error message: Need to

without pixelating it first	pattern	pixelate an image before pattern it
Loading and saving an image	load goat.png save goat-copy.png	Success assertEquals("load goat.png\nsave goat-copy.png\n", log.toString());
Known commands	load goat.png blur save goat-blur.png	Success assertEquals("load goat.png\nblur\nsave goat-blur.png\n", log.toString());
	load goat.png pixelate 50 pattern save goat-pattern.txt (Success because the user pixelates the image before patterning it)	Success assertEquals("load goat.png\npixelate 50\npattern\nsave goat-pattern.txt\n", log.toString());
Known command followed by a valid number/input	dither 8	Success
	mosaic 570	
	pixelate 100	

ImageModel

ImageModel model = new ImageModelImpl(filename);

IController controller = new Controller(model);

controller.readCommands(**batch file**);

Testing ImageModelImpl and Controller	Input	Expected Output
Batch file does not exist	InvalidFilename	IOException("Batch file cannot be found.")
Unknown commands	saveload	Unknown command saveload
	load123 goat.png	Unknow command load123
Trying to make changes to an image without loading it	save goat-dither.png	Error message: Image has not yet been loaded
Known command but is not followed by a number	dither	Error message: Incomplete command
	mosaic	
	pixelate	
Known command but followed by an invalid number/input	dither abc	Error message: Fail to execute command because of invalid input
	mosaic 800000 (the number of seeds is greater than the number of pixels)	

	<p>pixelate -100 (the number should be positive)</p>	
	<p>load width10-image.png pixelate 50 (Trying to pixelate 50 an image when the width of the image is only 10)</p>	
Trying to pattern an image without pixelating it first	<p>load goat.png pattern</p>	Error message: Need to pixelate an image before pattern it
Loading and saving an image	<p>load goat.png save goat-copy.png</p>	<p>Success (The goat-copy.png is saved successfully.)</p>
Known commands	<p>load goat.png blur save goat-blur.png</p>	<p>Success (After executing the blur command, the goat-blur.png is saved successfully.)</p>
	<p>load goat.png pixelate 50 pattern save goat-pattern.txt (Success because the user pixelates the image before patterning it)</p>	<p>Success (After executing the pixelate 50 and the pattern command, the goat-pattern.txt is saved successfully.)</p>
Known command followed by a valid number/input	dither 8	Success
	mosaic 570	
	pixelate 100	