



Design Assumptions:

- 1) If invalid input or invalid command is encountered then display the message in GUI for batch file execution and further commands will not be executed.
- 2) Keep the file in the res/input while executing the batch file from command line.
- 3) Output will be generated in res/output.
- 4) DMC is assumed to be 489 colors as provided in the project description.
- 5) Unicode characters will be used to represent the symbols for cross stitched pattern.
- 6) Only known commands will be executed and invalid commands will be returned as invalid command.
- 7) Height and width of the image should not be less than 10 pixels across.
- 8) Pattern generation is not doing pixelation, so it is expected to pixelate and then call pattern from GUI and console.
- 9) Pixelation parameter cannot be less than height and width of the image.
- 10) Pixelation parameter cannot be negative.
- 11) Input seed for mosaic cannot be greater than the product of image height and width.
- 12) Mosaic parameter cannot be negative.

- 13) If invalid input or invalid command is encounter then display the message in console and stops the execution.
- 14) Filename will be validated on execution and not in constructor of command pattern design.
- 15) Input parameters will be validated in Model to support both batch script and gui.
- 16) Only .png or .jpg via save is supported.
- 17) Only text file is supported for pattern generation.
- 18) User can load and save from any location from GUI.
- 19) It is expected to load a file and then perform the image operation or cross stitched pattern operation.
- 20) Two separate controller one for console or commanline execution and other to support GUI interaction. Code duplication is handled using AbstractImageController reusing the command design pattern to perform common operations of batch file and GUI.

TestCases:

Test Case	Test Case Description	Expected Result
	Test to verify whether controller	
	is calling the correct view	
	function on loading file	Input log to be verified whether it
testLoadFile	operation.	contains the desired string or not
	Test to verify whether controller	
	is calling the correct view	Input log to be verified whether it
testBlur	function on blur operation.	contains the desired string or not
	Test to verify whether controller	
	is calling the correct view	
	function while performing	Input log to be verified whether it
testSharpen	Sharpen operation.	contains the desired string or not
	Test to verify whether controller	
	is calling the correct view	
	function while performing	Input log to be verified whether it
testSepiaTone	SepiaTone operation.	contains the desired string or not
	Test to verify whether controller	
	is calling the correct view	
	function while performing	Input log to be verified whether it
testGreyScale	GreyScale operation.	contains the desired string or not
	Test to verify whether controller	
	is calling the correct view	
	function while performing	Input log to be verified whether it
testDither	Dither operation.	contains the desired string or not
	Test to verify whether controller	
	is calling the correct view	
	function while performing	Input log to be verified whether it
testMosaic	Mosaic operation.	contains the desired string or not

	Test to verify whether controller	
	is calling the correct view	
	function while performing	Input log to be verified whether it
testPixelate	Pixelate operation.	contains the desired string or not
testi ixelate	Test to verify whether controller	contains the desired string of hot
	is calling the correct view	
	function while performing	Input log to be verified whether it
testSaveFile	SaveFile operation.	contains the desired string or not
testsaverne	Test to verify whether controller	contains the desired string of hot
	is calling the correct view	
	_	Input log to be verified whether it
tastDattara	function while performing	Input log to be verified whether it
testPattern	Pattern operation.	contains the desired string or not
	Test to verify whether controller	
	is calling the correct view	
	function while performing	Input log to be verified whether it
testSwapDmcColor	SwapDmcColor operation.	contains the desired string or not
	Test to verify whether controller	
	is calling the correct view	
	function while performing	Input log to be verified whether it
testRemoveDmcColor	RemoveDmcColor operation.	contains the desired string or not
	Test to verify whether controller	
	is calling the correct view	
	function while performing	Input log to be verified whether it
testSavePattern	SavePattern operation.	contains the desired string or not
	Test to verify whether controller	
	is calling the correct view	
	function while performing	Input log to be verified whether it
testExecuteBatch	ExecuteBatch operation.	contains the desired string or not
	Test to verify whether controller	
	is calling the correct model	
	function while performing	Input log to be verified whether it
testFilterImage	FilterImage operation.	contains the desired string or not
	Test to verify whether controller	
	is calling the correct model	
	function while performing	Input log to be verified whether it
testTransformImage	TransformImage operation.	contains the desired string or not
Ü	Test to verify whether controller	Ŭ
	is calling the correct model	
	function while performing	Input log to be verified whether it
testReduce	Reduce operation.	contains the desired string or not
	Test to verify whether controller	
	is calling the correct model	
	function while performing	Input log to be verified whether it
testPixelate	Pixelate operation.	contains the desired string or not
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	Took to work which at his and a second	Industrial beautified by the con-
1	Test to verify whether controller	Input log to be verified whether it
testCreateMosaic	is calling the correct model	contains the desired string or not

	function while performing	
	CreateMosaic operation.	
	ereaterriosare operation.	
	Test to verify whether controller	
	is calling the correct model	
	function while performing	
to at Comparate Image Dat		
testGenerateImagePat	GeneratelmagePattern	Input log to be verified whether it
tern	operation.	contains the desired string or not
	Test to verify whether controller	
	is calling the correct model	
	function while performing	Input log to be verified whether it
testWriteFile	WriteFile operation.	contains the desired string or not
	Test to verify whether controller	
	is calling the correct model	
	function while performing	Input log to be verified whether it
testReadImage	ReadImage operation.	contains the desired string or not
	Test to verify whether controller	
	is calling the correct model	
	function while performing	Input log to be verified whether it
testWriteImage	WriteImage operation.	contains the desired string or not
		Ü
	Test to verify whether controller	
	is calling the correct model	
testGetBufferedImage	function while performing	
getCrossStichedPatter	GetBufferedImagegetCrossStich	Input log to be verified whether it
nInfo	edPatternInfo operation.	contains the desired string or not
	Test to verify whether controller	
	is calling the correct model	
	function while performing	
testSwapDmcColorIm	SwapDmcColorImagePattern	Input log to be verified whether it
agePattern	operation.	contains the desired string or not
	Test to verify whether controller	
	is calling the correct model	
	function while performing	
testReplaceDmcColorI	ReplaceDmcColorImagePattern	Input log to be verified whether it
magePattern	operation.	contains the desired string or not
2021 222111	Test to verify whether controller	
	is calling the correct model	
	function while performing	
testGenerateCrossIma	GenerateCrossImagePattern	Input log to be verified whether it
	_	'
gePattern	operation.	contains the desired string or not