70094 ExerciseTypes.CW1

Picture Processing

Submitters

sf23   Shihan Fu

Emarking

```
 1: Final Tests: Summary for sf23 of v5
 2: ----------------------------------
 3:
 4:   Public Tests:
 5:     Compiles:      1 / 1
 6:     Tests Pass:    1 / 1
 7:     Style Checks:  0 / 1
 8:
 9: Git Repo: git@gitlab.doc.ic.ac.uk:lab2324_spring/SE_Design_Ex1_sf23.git
10: Commit ID: 2d946
```

```
 1: package picture;
 2:
 3: /**
 4:  * @author fsh
 5:  * @version 1.0
 6:  * @time 17/01/2024 20:32
 7:  * @description:
 8:  **/
 9: public class PictureProcessor {
10:     public static void main(String[] args) {
11:         if (args.length == 0) {
12:             System.out.println("To get help, write PictureProcessor help");
13:         } else if (args[0].equals("help")) {
14:             System.out.println("****** Command-Line Options ******\"");
15:             System.out.println("help - displays this help menu");
16:             System.out.println("grayscale <in> <out> - write to <out> a ⟋
monochrome version <in>");
17:             System.out.println("rotate 90|180|270 <in> <out> - writes to <out> ⟋
rotated version of <in>");
18:         } else if (args[0].equals("grayscale")) {
19:             // grayscale images/myPic.png images/out.png
20:             grayscaleBlack(args[1], args[2]);
21:         } else if (args[0].equals("rotate")) {
22:             rotate(args[1], args[2], args[3]);
23:         }
24:
25:     }
26:
27:     public static void rotate(String angle, String filepath_in, String ⟋
filepath_out) {
28:         Picture pic = new Picture(filepath_in);
29:         int width = pic.getWidth();
30:         int height = pic.getHeight();
31:         System.out.println(filepath_out);
32:         int degree = Integer.parseInt(angle);
33:         Picture pic_out = new Picture(height, width);
34:
35:
36:         for (int i = 0; i < height; i++) {
37:             for (int j = 0; j < width; j++) {
38:                 Color c = pic.getPixel(j, i);
39:
40:                 pic_out.setPixel(height - 1 - i, j, c);
41:             }
42:         }
43:         // to pass online test which cannot access tmpfolder
44:         String tmp_file_path = "images/out.png";
45:         pic_out.saveAs(tmp_file_path);
46:
47:         if (degree > 90) {
48:             rotate(Integer.toString(degree - 90), tmp_file_path, filepath_out);
49:         } else {
50:             pic_out.saveAs(filepath_out);
51:         }
52:
53:     }
54:
55:     public static void grayscaleBlack(String filepath_in, String filepath_out) {
56:         Picture pic = new Picture(filepath_in);
57:         int width = pic.getWidth();
58:         int height = pic.getHeight();
59:         Picture pic_out = new Picture(width, height);
60:
61:         for (int i = 0; i < width; i++) {
62:             for (int j = 0; j < height; j++) {
63:                 Color c = pic.getPixel(i, j);
```

The help information can be represented as a single string instead of individually outputting each line. Consider using escape characters such as \n and \t to adjust the formatting of the string

Name variables using **camelCase**

```
64:                 int avg = (c.red() + c.blue() + c.green()) / 3;
65:                 Color new_c = new Color(avg, avg, avg);
66:                 pic_out.setPixel(i, j, new_c);
67:             }
68:         }
69:         pic_out.saveAs(filepath_out);
70:     }
71: }
```

```
 1: -------- Test Output --------
 2: Running LabTS build...
 3:
 4: Submission summary...
 5: You made 3 commits
 6:   - a6bad1b version 1 grayscale and rotate [1 file changed, 71 insertions]
 7:   - 07fd120 update rotate, use tmp_path_out [1 file changed, 5 insertions, 2 deletions]
 8:   - 2d946ca change code format [1 file changed, 22 insertions, 25 deletions]
 9:
10: Preparing...
11:
12: BUILD SUCCESSFUL in 728ms
13:
14: Compiling...
15: BUILD SUCCESSFUL in 2s
16:
17: Running tests...
18:
19: picture.PictureProcessorTest > rotate180BlueRect PASSED
20:
21: picture.PictureProcessorTest > grayscaleBlack PASSED
22:
23: picture.PictureProcessorTest > grayscaleRainbow PASSED
24:
25: picture.PictureProcessorTest > rotate90Green PASSED
26:
27: picture.PictureProcessorTest > help PASSED
28:
29: picture.PictureProcessorTest > rotate270BlueRect PASSED
30:
31: picture.PictureProcessorTest > rotate90BlueRect PASSED
32:
33: BUILD SUCCESSFUL in 2s
34:
35: Checking code style...
36:
37:
38: -------- Test Errors --------
39: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:3: Summary javadoc is missing. [SummaryJavadoc]
40: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:10:5: 'method def modifier' has incorrect indentation level 4, expected level should be 2. ↗
[Indentation]
41: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:11:9: 'if' has incorrect indentation level 8, expected level should be 4. [Indentation]
42: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:12:13: 'if' child has incorrect indentation level 12, expected level should be 6. [Indentation]
43: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:13:9: 'if rcurly' has incorrect indentation level 8, expected level should be 4. [Indentation]
44: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:14:13: 'if' child has incorrect indentation level 12, expected level should be 6. [Indentation]
45: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:15:13: 'if' child has incorrect indentation level 12, expected level should be 6. [Indentation]
46: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:16:13: 'if' child has incorrect indentation level 12, expected level should be 6. [Indentation]
47: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:17: Line is longer than 100 characters (found 107). [LineLength]
48: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:17:13: 'if' child has incorrect indentation level 12, expected level should be 6. [Indentation]
49: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:18:9: 'if rcurly' has incorrect indentation level 8, expected level should be 4. [Indentation]
50: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:20:13: 'if' child has incorrect indentation level 12, expected level should be 6. [Indentation]
51: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:21:9: 'if rcurly' has incorrect indentation level 8, expected level should be 4. [Indentation]
52: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:22:13: 'if' child has incorrect indentation level 12, expected level should be 6. [Indentation]
53: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:23:9: 'if rcurly' has incorrect indentation level 8, expected level should be 4. [Indentation]
54: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:25:5: 'method def rcurly' has incorrect indentation level 4, expected level should be 2. ↗
[Indentation]
55: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:27:5: 'method def modifier' has incorrect indentation level 4, expected level should be 2. ↗
[Indentation]
56: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:27:52: Parameter name 'filepath_in' must match pattern '^[a-z]([a-z0-9][a-zA-Z0-9]*)?$'. ↗
[ParameterName]
57: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:27:72: Parameter name 'filepath_out' must match pattern '^[a-z]([a-z0-9][a-zA-Z0-9]*)?$'. ↗
```

For the warning for "incorrect indentation", you can refer to this link
for possible solutions: https://stackoverflow.com/questions/31831321/
check-style-indentation-violation-public-have-incorrect-indentation-
level-4

[ParameterName]
  58: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:28:9: 'method def' child has incorrect indentation level 8, expected level should be 4. ✓
[Indentation]
  59: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:29:9: 'method def' child has incorrect indentation level 8, expected level should be 4. ✓
[Indentation]
  60: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:30:9: 'method def' child has incorrect indentation level 8, expected level should be 4. ✓
[Indentation]
  61: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:31:9: 'method def' child has incorrect indentation level 8, expected level should be 4. ✓
[Indentation]
  62: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:32:9: 'method def' child has incorrect indentation level 8, expected level should be 4. ✓
[Indentation]
  63: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:33:9: 'method def' child has incorrect indentation level 8, expected level should be 4. ✓
[Indentation]
  64: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:33:17: Local variable name 'pic_out' must match pattern '^[a-z]([a-z0-9][a-zA-Z0-9]*)?$'. ✓
[LocalVariableName]
  65: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:36:9: 'for' has incorrect indentation level 8, expected level should be 4. [Indentation]
  66: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:37:13: 'for' has incorrect indentation level 12, expected level should be 6. [Indentation]
  67: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:38:17: 'for' child has incorrect indentation level 16, expected level should be 8. ✓
[Indentation]
  68: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:40:17: 'for' child has incorrect indentation level 16, expected level should be 8. ✓
[Indentation]
  69: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:41:13: 'for rcurly' has incorrect indentation level 12, expected level should be 6. ✓
[Indentation]
  70: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:42:9: 'for rcurly' has incorrect indentation level 8, expected level should be 4. [Indentation]
  71: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:44:9: 'method def' child has incorrect indentation level 8, expected level should be 4. ✓
[Indentation]
  72: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:44:16: Local variable name 'tmp_file_path' must match pattern ✓
'^[a-z]([a-z0-9][a-zA-Z0-9]*)?$'. [LocalVariableName]
  73: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:45:9: 'method def' child has incorrect indentation level 8, expected level should be 4. ✓
[Indentation]
  74: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:47:9: 'if' has incorrect indentation level 8, expected level should be 4. [Indentation]
  75: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:48:13: 'if' child has incorrect indentation level 12, expected level should be 6. [Indentation]
  76: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:49:9: 'if rcurly' has incorrect indentation level 8, expected level should be 4. [Indentation]
  77: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:50:13: 'else' child has incorrect indentation level 12, expected level should be 6. ✓
[Indentation]
  78: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:51:9: 'else rcurly' has incorrect indentation level 8, expected level should be 4. ✓
[Indentation]
  79: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:53:5: 'method def rcurly' has incorrect indentation level 4, expected level should be 2. ✓
[Indentation]
  80: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:55:5: 'method def modifier' has incorrect indentation level 4, expected level should be 2. ✓
[Indentation]
  81: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:55:46: Parameter name 'filepath_in' must match pattern '^[a-z]([a-z0-9][a-zA-Z0-9]*)?$'. ✓
[ParameterName]
  82: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:55:66: Parameter name 'filepath_out' must match pattern '^[a-z]([a-z0-9][a-zA-Z0-9]*)?$'. ✓
[ParameterName]
  83: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:56:9: 'method def' child has incorrect indentation level 8, expected level should be 4. ✓
[Indentation]
  84: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:57:9: 'method def' child has incorrect indentation level 8, expected level should be 4. ✓
[Indentation]
  85: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:58:9: 'method def' child has incorrect indentation level 8, expected level should be 4. ✓
[Indentation]
  86: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:59:9: 'method def' child has incorrect indentation level 8, expected level should be 4. ✓
[Indentation]
  87: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:59:17: Local variable name 'pic_out' must match pattern '^[a-z]([a-z0-9][a-zA-Z0-9]*)?$'. ✓
[LocalVariableName]
  88: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:61:9: 'for' has incorrect indentation level 8, expected level should be 4. [Indentation]
  89: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:62:13: 'for' has incorrect indentation level 12, expected level should be 6. [Indentation]
  90: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:63:17: 'for' child has incorrect indentation level 16, expected level should be 8. ✓
[Indentation]
  91: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:64:17: 'for' child has incorrect indentation level 16, expected level should be 8. ✓
[Indentation]

   92: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:65:17: 'for' child has incorrect indentation level 16, expected level should be 8. ✗
[Indentation]
   93: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:65:23: Local variable name 'new_c' must match pattern '^[a-z]([a-z0-9][a-zA-Z0-9]*)?$'. ✗
[LocalVariableName]
   94: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:66:17: 'for' child has incorrect indentation level 16, expected level should be 8. ✗
[Indentation]
   95: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:67:13: 'for rcurly' has incorrect indentation level 12, expected level should be 6. ✗
[Indentation]
   96: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:68:9: 'for rcurly' has incorrect indentation level 8, expected level should be 4. [Indentation]
   97: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:69:9: 'method def' child has incorrect indentation level 8, expected level should be 4. ✗
[Indentation]
   98: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:70:5: 'method def rcurly' has incorrect indentation level 4, expected level should be 2. ✗
[Indentation]
   99:
  100: FAILURE: Build failed with an exception.
  101:
  102: * What went wrong:
  103: Execution failed for task ':checkstyleMain'.
  104: > Checkstyle rule violations were found. See the report at: file:///tmp/d20240118-35-ip3tv4/build/reports/checkstyle/main.html
  105:   Checkstyle files with violations: 1
  106:   Checkstyle violations by severity: [warning:60]
  107:
  108:
  109: * Try:
  110: Run with --stacktrace option to get the stack trace. Run with --info or --debug option to get more log output. Run with --scan to get full insights.
  111:
  112: * Get more help at https://help.gradle.org
  113:
  114: BUILD FAILED in 5s

```
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 2: -----------------------------------
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 4:   Public Tests:
 5:     Compiles:      1 / 1
 6:     Tests Pass:    1 / 1
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  2:
  3: /**
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  5:  * @version 1.0
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  7:  * @description:
  8:  **/
  9: public class PictureProcessor {
 10:     public static void main(String[] args) {
 11:         if (args.length == 0) {
 12:             System.out.println("To get help, write PictureProcessor help");
 13:         } else if (args[0].equals("help")) {
 14:             System.out.println("****** Command-Line Options ******\"");
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monochrome version <in>");
 17:             System.out.println("rotate 90|180|270 <in> <out> - writes to <out> a ⁄
rotated version of <in>");
 18:         } else if (args[0].equals("grayscale")) {
 19:             // grayscale images/myPic.png images/out.png
 20:             grayscaleBlack(args[1], args[2]);
 21:         } else if (args[0].equals("rotate")) {
 22:             rotate(args[1], args[2], args[3]);
 23:         }
 24:
 25:     }
 26:
 27:     public static void rotate(String angle, String filepath_in, String ⁄
filepath_out) {
 28:         Picture pic = new Picture(filepath_in);
 29:         int width = pic.getWidth();
 30:         int height = pic.getHeight();
 31:         System.out.println(filepath_out);
 32:         int degree = Integer.parseInt(angle);
 33:         Picture pic_out = new Picture(height, width);
 34:
 35:
 36:         for (int i = 0; i < height; i++) {
 37:             for (int j = 0; j < width; j++) {
 38:                 Color c = pic.getPixel(j, i);
 39:
 40:                 pic_out.setPixel(height - 1 - i, j, c);
 41:             }
 42:         }
 43:         // to pass online test which cannot access tmpfolder
 44:         String tmp_file_path = "images/out.png";
 45:         pic_out.saveAs(tmp_file_path);
 46:
 47:         if (degree > 90) {
 48:             rotate(Integer.toString(degree - 90), tmp_file_path, filepath_out);
 49:         } else {
 50:             pic_out.saveAs(filepath_out);
 51:         }
 52:
 53:     }
 54:
 55:     public static void grayscaleBlack(String filepath_in, String filepath_out) {
 56:         Picture pic = new Picture(filepath_in);
 57:         int width = pic.getWidth();
 58:         int height = pic.getHeight();
 59:         Picture pic_out = new Picture(width, height);
 60:
 61:         for (int i = 0; i < width; i++) {
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 63:                 Color c = pic.getPixel(i, j);
```

```
 64:                 int avg = (c.red() + c.blue() + c.green()) / 3;
 65:                 Color new_c = new Color(avg, avg, avg);
 66:                 pic_out.setPixel(i, j, new_c);
 67:             }
 68:         }
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25: picture.PictureProcessorTest > rotate90Green PASSED
26:
27: picture.PictureProcessorTest > help PASSED
28:
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46: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:16:13: 'if' child has incorrect indentation level 12, expected level should be 6. [Indentation]
47: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:17: Line is longer than 100 characters (found 107). [LineLength]
48: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:17:13: 'if' child has incorrect indentation level 12, expected level should be 6. [Indentation]
49: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:18:9: 'if rcurly' has incorrect indentation level 8, expected level should be 4. [Indentation]
50: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:20:13: 'if' child has incorrect indentation level 12, expected level should be 6. [Indentation]
51: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:21:9: 'if rcurly' has incorrect indentation level 8, expected level should be 4. [Indentation]
52: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:22:13: 'if' child has incorrect indentation level 12, expected level should be 6. [Indentation]
53: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:23:9: 'if rcurly' has incorrect indentation level 8, expected level should be 4. [Indentation]
54: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:25:5: 'method def rcurly' has incorrect indentation level 4, expected level should be 2. ↗
[Indentation]
55: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:27:5: 'method def modifier' has incorrect indentation level 4, expected level should be 2. ↗
[Indentation]
56: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:27:52: Parameter name 'filepath_in' must match pattern '^[a-z]([a-z0-9][a-zA-Z0-9]*)?$'. ↗
[ParameterName]
57: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:27:72: Parameter name 'filepath_out' must match pattern '^[a-z]([a-z0-9][a-zA-Z0-9]*)?$'. ↗
```

[ParameterName]
   58: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:28:9: 'method def' child has incorrect indentation level 8, expected level should be 4. ✗
[Indentation]
   59: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:29:9: 'method def' child has incorrect indentation level 8, expected level should be 4. ✗
[Indentation]
   60: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:30:9: 'method def' child has incorrect indentation level 8, expected level should be 4. ✗
[Indentation]
   61: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:31:9: 'method def' child has incorrect indentation level 8, expected level should be 4. ✗
[Indentation]
   62: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:32:9: 'method def' child has incorrect indentation level 8, expected level should be 4. ✗
[Indentation]
   63: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:33:9: 'method def' child has incorrect indentation level 8, expected level should be 4. ✗
[Indentation]
   64: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:33:17: Local variable name 'pic_out' must match pattern '^[a-z]([a-z0-9][a-zA-Z0-9]*)?$'. ✗
[LocalVariableName]
   65: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:36:9: 'for' has incorrect indentation level 8, expected level should be 4. [Indentation]
   66: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:37:13: 'for' has incorrect indentation level 12, expected level should be 6. [Indentation]
   67: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:38:17: 'for' child has incorrect indentation level 16, expected level should be 8. ✗
[Indentation]
   68: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:40:17: 'for' child has incorrect indentation level 16, expected level should be 8. ✗
[Indentation]
   69: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:41:13: 'for rcurly' has incorrect indentation level 12, expected level should be 6. ✗
[Indentation]
   70: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:42:9: 'for rcurly' has incorrect indentation level 8, expected level should be 4. [Indentation]
   71: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:44:9: 'method def' child has incorrect indentation level 8, expected level should be 4. ✗
[Indentation]
   72: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:44:16: Local variable name 'tmp_file_path' must match pattern ✗
'^[a-z]([a-z0-9][a-zA-Z0-9]*)?$'. [LocalVariableName]
   73: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:45:9: 'method def' child has incorrect indentation level 8, expected level should be 4. ✗
[Indentation]
   74: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:47:9: 'if' has incorrect indentation level 8, expected level should be 4. [Indentation]
   75: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:48:13: 'if' child has incorrect indentation level 12, expected level should be 6. [Indentation]
   76: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:49:9: 'if rcurly' has incorrect indentation level 8, expected level should be 4. [Indentation]
   77: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:50:13: 'else' child has incorrect indentation level 12, expected level should be 6. ✗
[Indentation]
   78: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:51:9: 'else rcurly' has incorrect indentation level 8, expected level should be 4. ✗
[Indentation]
   79: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:53:5: 'method def rcurly' has incorrect indentation level 4, expected level should be 2. ✗
[Indentation]
   80: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:55:5: 'method def modifier' has incorrect indentation level 4, expected level should be 2. ✗
[Indentation]
   81: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:55:46: Parameter name 'filepath_in' must match pattern '^[a-z]([a-z0-9][a-zA-Z0-9]*)?$'. ✗
[ParameterName]
   82: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:55:66: Parameter name 'filepath_out' must match pattern '^[a-z]([a-z0-9][a-zA-Z0-9]*)?$'. ✗
[ParameterName]
   83: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:56:9: 'method def' child has incorrect indentation level 8, expected level should be 4. ✗
[Indentation]
   84: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:57:9: 'method def' child has incorrect indentation level 8, expected level should be 4. ✗
[Indentation]
   85: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:58:9: 'method def' child has incorrect indentation level 8, expected level should be 4. ✗
[Indentation]
   86: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:59:9: 'method def' child has incorrect indentation level 8, expected level should be 4. ✗
[Indentation]
   87: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:59:17: Local variable name 'pic_out' must match pattern '^[a-z]([a-z0-9][a-zA-Z0-9]*)?$'. ✗
[LocalVariableName]
   88: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:61:9: 'for' has incorrect indentation level 8, expected level should be 4. [Indentation]
   89: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:62:13: 'for' has incorrect indentation level 12, expected level should be 6. [Indentation]
   90: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:63:17: 'for' child has incorrect indentation level 16, expected level should be 8. ✗
[Indentation]
   91: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:64:17: 'for' child has incorrect indentation level 16, expected level should be 8. ✗
[Indentation]

92: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:65:17: 'for' child has incorrect indentation level 16, expected level should be 8. ✗
[Indentation]
93: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:65:23: Local variable name 'new_c' must match pattern '^[a-z]([a-z0-9][a-zA-Z0-9]*)?$'. ✗
[LocalVariableName]
94: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:66:17: 'for' child has incorrect indentation level 16, expected level should be 8. ✗
[Indentation]
95: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:67:13: 'for rcurly' has incorrect indentation level 12, expected level should be 6. ✗
[Indentation]
96: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:68:9: 'for rcurly' has incorrect indentation level 8, expected level should be 4. [Indentation]
97: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:69:9: 'method def' child has incorrect indentation level 8, expected level should be 4. ✗
[Indentation]
98: [ant:checkstyle] [WARN] /tmp/d20240118-35-ip3tv4/src/picture/PictureProcessor.java:70:5: 'method def rcurly' has incorrect indentation level 4, expected level should be 2. ✗
[Indentation]
99:
100: FAILURE: Build failed with an exception.
101:
102: * What went wrong:
103: Execution failed for task ':checkstyleMain'.
104: > Checkstyle rule violations were found. See the report at: file:///tmp/d20240118-35-ip3tv4/build/reports/checkstyle/main.html
105:   Checkstyle files with violations: 1
106:   Checkstyle violations by severity: [warning:60]
107:
108:
109: * Try:
110: Run with --stacktrace option to get the stack trace. Run with --info or --debug option to get more log output. Run with --scan to get full insights.
111:
112: * Get more help at https://help.gradle.org
113:
114: BUILD FAILED in 5s

Mark: 15/20
Great job on cw1. You've completed the greyscale and rotate functions successfully. Each code commit comes with clear
information and the code is quite readable. Here are more areas that can be further improved:
1. Consider adding validation for user input, for example, checking whether the number of remaining parameters is 2 when the
    user's first parameter is 'rotate'. Also, the angle that the user input for the rotate() method should be checked.
2. Consider handling IO exceptions and providing users with clear and friendly information after catching the exception. For
    example, when there is an error in the input file location, catching this exception and giving feedback to the user would be
    more preferable than letting the program terminate with an error.