Criterion C: Development

List of Techniques:

1. Object-oriented design
2. Java Swing Development
3. Conditional / Switch Statements
4. Buffered Image / g2 Graphics
5. Integer variable of binary representation of RGB color graphics
6. Action / Event Listeners
7. @Override functions

1. An important idea behind OOP is creating different objects that can generate either a visual GUI or image for the user to interact with. This is demonstrated through the use of FractalMain, FractalFrenzy, and Body objects which would produce a JFrame or Buffered Image for the user.

2. Swing was used for the majority of GUI development and was essential for displaying the visual fractal to the user. Swing components such as JFrame, JPanel, JButton, JTextField, GridLayouts, and so much more were very common throughout the application

3. Conditional and switch statements were generally used for basic logic behind the code that would help determine decision making for the program. Statements were used to determine user input of MouseEvent as well as color distinction of different points of the fractal based on their Iteration count.

4. BufferedImage was what allowed the fractal image to be added to the main Body JFrame. The Buffered Image used g2 Graphics to generate the RGB representative colors of the fractal levels as well as the infinitely smaller and repeating patterns.

5. 0b00101001010100100101111111 does not necessarily look like an Integer value, however it is. The "0b" relay to the integer variable that the 24 characters after it, are actually 3 bytes of information that represent numerical values from 0 to 255. This creates a binary version of RGB color that can be easily manipulated. The number given above actually is RGB(41, 73, 127) which creates an opaque, cobalt blue color for the background.

6. ActionEvents, MouseListeners, KeyListeners, and other listeners were used to collect information on user input. Users have the availability to manipulate the fractal by left and right clicking on the mouse and using the W, A, S, D keys. They also had responsive listeners on the buttons and textfields.

7. The @Override functions were mainly used in the subclasses of the main FractalFrenzy class to handle MouseEvent Exceptions as well as Dimension and paintComponent.