

## ***Functional Requirements***

F01. The product must be able to load an image.

--F01a. The product must be able to load format JPEG/JFIF (Joint Photographic Experts Group / JPEG File Interchange Format) for an image.

--F01b. The product must be able to load format PNG (Portable Network Graphics) for an image.

--F01c. The product must be able to load format TIF/TIFF (Tagged Image File Format) for an image.

F02. The product must be able to display an image from a file. (Depends on: F01)

F03. The product must display three images simultaneously in one window. (Depends on: F01, F02)

F04. The product must be able to save an image. (Depends on: F01, F02)

--F04a. The product must save images as PNG files.

F05. The product must have a respective label for the cover image, secret image, and composite image.

F06. The product must have an editable text area.

--F06a. The product must allow for scrolling of the text area.

F07. The product must be able to load text into the text area. (Depends on: F06)

--F07a. The product must be able to load TXT (Text File) files.

F08. The product must be able to save text from the text area. (Depends on: F06)

--F08a. The product must save the text as a TXT file.

F09. The product must be able to extract the cover image from the composite image. (Depends on: F02)

F10. The product must be able to extract the secret image from the composite image. (Depends on: F02)

F11. The product must be able to compose the composite image from the cover and secret image. (Depends on: F02)

--F11a. The product will only be able to compose the image if both the cover and secret images are present.

--F11b. The product will only compose the composite image if both the cover and secret images are the same size.

F12. The product must allow for encoding the text in the text area to a secret image. (Depends on: F06)

--F12a. The product will only allow the encoding to occur when the cover image is present.

--F12b. The product will truncate the text if the image is smaller than the bits for the converted text.

--F12c. The product will pad the secret image with 0s if the text is smaller than the image.

F13. The product must allow for decoding the secret image to the text area. (Depends on: F02, F06)

### ***Non-functional Requirements***

NF1. The product must be deployed using JavaFX.

NF2. The product must implement an interactive GUI.

NF3. The product must implement basic error handling.

--NF3a. The product must supply a helpful explanation for the error.