Test Plan

Test Coverage

The test plan for this program plans to cover solely the graphical user interface as it is the only class in the entire cryptography program that cannot have a self-testing method. Due to this factor, it was decided a test plan would be needed to thoroughly test the graphical user interface for bugs.

Test Methodology

Look and feel test

* Checked if all labels with descriptions were legible
* Checked if all objects in the frame were positioned properly
* Checked if background image was displaying
* Checked if the key lists and the 9 keys started off with the right text in them
* Tested if typing in the JTextArea worked and was legible
* Tested if the key List were functional in changing numbers
* Tested if the 9 key fields were fine and large enough to type in
* Checked if encrypt and decrypt buttons worked in tandem

Encryption/Decryption Functionality Test

* Manually put in normal phrase in input box and encrypted the word
* Copied the encrypted word and put in the key used for encryption to decrypt the text
* Checked if the decrypted word matched the original word going in to become encrypted
* Put in encrypted word again, but this time changed the original key to see what would happen
* The decrypted word this time was different from the original word meaning the key works

Saving and Loading Functionality Test

* Checked if saving JFilechooser opened up when clicked on
* Checked if user could freely move around directories
* Checked if user could save a file in the specified directory and the file contents were correct
* Checked if corresponding keyFile was also saved with the correct encrypted key
* Checked if loading JFilechooser window opened up when clicked on
* Checked if specified file was opened up and the right text and key were placed in the correct fields in the GUI.

GUI Error Trapping Testing

* Put in invalid entry in keys
* Tried loading a file that did not exist
* Tried saving a file in a location that does not exist
* Tried loading a key file that contained an invalid key

Testing Chart

|  |  |
| --- | --- |
| Test | Result (pass/fail)(Description) |
| Label legibility test | pass |
| Object positioning | pass |
| Background image check | pass |
| Key list starting text check | pass |
| JTextArea typing and text legibility | pass |
| Key List functionality | pass |
| 9 key size check for typing | pass |
| Encryption decryption radio button switch check | pass |
| Encryption decryption functionality testing |  |
| Entered a "hello" in the JTextArea, clicked encrypt radio button and pressed translate | (pass) Encrypted phrase appeared in output JTextArea |
| Copied the encrypted phrase and put it into the input JTextArea, entered the key used to encrypt, clicked on the decrypt radio button and pressed translate | (pass) decrypted phrase was hello. |
| Put in same encrypted word but changed the original key used for encrypting. Pressed decrypt radio button and pressed translate. | (pass) decrpyted word was not "hello", meaning key security worked. |
| Saving and Loading Functionality Test |  |
| Clicked on save button in GUI | (pass) JFileChooser for savings files appeared. |
| Checked if user could move around directories | (pass) |
| Clicked on save button with filename in the save text field | (pass) file saved in selected directory with corresponding key file |
| Checked if key file and text file contents were correct | (pass) text and encrypted key in files matched what the user put in |
| Clicked load button on GUI | (pass) JFileChooser for opening files appeared. |
| Checked if user could move around directories | (pass) |
| Clicked on open button in JFileChooser | (pass) JFileChooser closed and put key and text from the files in the right places in the GUI |
| Check if key and text file contents were correct | (pass) text and key in GUI matched the contents of the file that as read from |
| GUI Error Trapping Testing |  |
| Entered a number over 40 in the key | (pass) "Invalid Key" Displayed |
| Did not enter any key values | (pass) "Invalid Key" Displayed |
| Loading a corrupted file | (pass) "There is a problem with the file" Displayed |
| Made a directory to a USB, unplugged USB and tried to save a file in that directory. | (pass) "File does not exist displayed" Displayed |
| Loaded a file with an invalid key. | (pass) "File contains an invalid key" Displayed |