| Requirement #01 | Requirement Type: 1, 2i, 3i , 3iv, 3vi |
|---|---|
| Description: User Interface that is easy to use and understand | |
| Rationale: To allow the user to be able to operate this program a simple and easy to understand user interface is necessary. | |
| Fit Criterion: The user interface provides all the necessary information in a concise and readable format for the user to be able to make the proper decisions when executing the program. | |
| Priority: High | |
| Dependencies: None | |

| Requirement #02 | Requirement Type: 1, 3vi, 4vi, 4viii |
|---|---|
| Description: Recursive call to the selection method | |
| Rationale: Main functionality to the program to ensure that the user can encrypt or decrypt as many times as they need to without having to restart the program each time an encryption or decryption is completed. | |
| Fit Criterion: Once an encryption or a decryption method has been fully executed the program will default back to the beginning of the selection phase where the user will select encryption, decryption, or exit. | |
| Priority: High | |
| Dependencies: | |

| Requirement #03 | Requirement Type: 4i, 4iii, 4v, 4vii |
|---|---|
| Description: Pull encryption and decryption to subclasses instead of main class | |
| Rationale: Make the subclasses for Caesarean, DES, and AES256 do the actual encryption and decryption so that there is less code in main and make changes to the encryption methods easier since only changing the subclass will allow for easy encryption management. | |
| Fit Criterion: The main class calls the subclasses method for encryption or decryption where the information is passed to the subclass is executed then the encrypted or decrypted text is passed back to the main class to be stored into a file. | |
| Priority: High | |
| Dependencies: | |

| Requirement #04 | Requirement Type: 3ii, 3iii, 3v, 3vi, 4viii |
|---|---|
| Description: Customizable encryption and decryption methods | |
| Rationale: The ability to customize the encryption methods to the user's capabilities and needs for their use. | |
| Fit Criterion: The encryption and decryption processes should be segmented from the rest of the program so that they are easily identified and changeable. | |
| Priority: Medium | |
| Dependencies: Requirement #03 | |

| Requirement #05 | Requirement Type: 1, 3iv, 3v, 4ii, 4iii, 4iv, 4v |
|---|---|
| Description: File input validation | |
| Rationale: The program needs to make sure that the provided file path is a proper file path so that the text can be pulled from the file. | |
| Fit Criterion: The program will need to validate the path if its real then it will continue if not it will say File not found and prompt the user to try again. | |
| Priority: High | |
| Dependencies: None | |

| Requirement #06 | Requirement Type: 1, 3i, 3v, 3vi, 4iv |
|---|---|
| Description: Saving the new file to the desktop or folder on the desktop | |
| Rationale: The new file default save is within the NetBeans project folder. However, it will be more convenient for the user for it to be on the desktop or a folder on the desktop. Furthermore, this can later be edited to any specific file path other than the desktop. | |
| Fit Criterion: The program must either output the file directly to the desktop, the folder directly to the desktop, or even an existing folder on the desktop. | |
| Priority: High | |
| Dependencies: None | |

| Requirement #07 | Requirement Type: 1, 3i, 3v, 3vi, 4iv |
|---|---|
| Description: Creating a new folder automatically | |
| Rationale: Each encryption and decryption need its own folder so that each encryption and decryption can be separated based on when they are done in the program. | |
| Fit Criterion: The program creates a new folder by looping through to find the first available name then taking that name and creating the new folder using the File class. | |
| Priority: High | |
| Dependencies: None | |

| Requirement #08 | Requirement Type: 1, 3i, 3v, 3vi, 4iv |
|---|---|
| Description: Creating a new file automatically | |
| Rationale: Each encryption and decryption will need to be stored into a file that specifies what type of method it is encrypted or decrypted with. | |
| Fit Criterion: The program creates the new file after finding the folder name that it will use for that encryption or decryption and then using PrintWritter class it writes to the newly created file. | |
| Priority: High | |
| Dependencies: None | |

| Requirement #09 | Requirement Type: 1, 3i, 3v, 3vi, 4i, 4iv |
|---|---|
| Description: BufferedReader method to pull the text from the file | |
| Rationale: The bufferedReader method pulls the text from a file so the contents can either be encrypted or decrypted. | |
| Fit Criterion: The bufferedReader should be passed a file path and pull the contents of the file so that it can be passed for encryption or decryption. | |
| Priority: High | |
| Dependencies: 05 | |

| Requirement #10 | Requirement Type: 1, 3ii, 3v, 6i |
|---|---|
| Description: File Not Found Exception class | |
| Rationale: When the user performs a search, and the file does not exist this class will through the error File Not Found and prompt them to enter it again. | |
| Fit Criterion: When an improper or non-existent file is entered this exception will be thrown | |
| Priority: High | |
| Dependencies: None | |

| Requirement #11 | Requirement Type: 1, 3iv, 4iii, 4iv |
|---|---|
| Description: Caesarean Encryption | |
| Rationale: Encrypt the text from files in caesarean cipher. | |
| Fit Criterion: The method takes the text and properly shifts the text into cipher text by the given shit key value. | |
| Priority: High | |
| Dependencies: 05, 06, 07, 08, 09 | |

| Requirement #12 | Requirement Type: 1, 3iv, 4iii, 4iv |
|---|---|
| Description: Caesarean Decryption | |
| Rationale: Decrypts caesarean cipher text so it can be the original message | |
| Fit Criterion: The method needs to take in ciphertext encrypted with caesarean cipher and return the regular text. | |
| Priority: High | |
| Dependencies: 05, 06, 07, 08, 09, 11 | |

| Requirement #13 | Requirement Type: 1, 3i, 3vi, 4i, 4iii, 4v |
|---|---|
| Description: WriteData method | |
| Rationale: The method needed to send out the encrypted or decrypted text back to the main method to be able to save it. | |
| Fit Criterion: Taking the text from the encryption or decryption method then being able to output to a file where it will be stored. | |
| Priority: High | |
| Dependencies: 08 | |

| Requirement #14 | Requirement Type: 1, 3i, 3v, 3vi, 4iii, 4vi |
|---|---|
| Description: DES Encryption | |
| Rationale: The method needed to encrypt text files in the Data Encryption Standard or DES format. | |
| Fit Criterion: Taking the text from a chosen file and encrypts it with DES encryption. | |
| Priority: High | |
| Dependencies: 05, 06, 07, 08, 09, 13 | |

| Requirement #15 | Requirement Type: 1, 3i, 3v, 3vi, 4iii, 4vi |
|---|---|
| Description: DES Decryption | |
| Rationale: The method needed to decrypt text files that have DES encryption on them. | |
| Fit Criterion: Taking a DES encrypted file and being able to revert it to the original contents of that original file. | |
| Priority: | |
| Dependencies: 05, 06, 07, 08, 09, 13, 14 | |

| Requirement #16 | Requirement Type: 1, 3i, 3vi, 4ii, 4iii, 6i, 6ii |
|---|---|
| Description: Generate IV | |
| Rationale: To make this IV, which is a necessary component for AES256, generated randomly to increase security in the encryption. | |
| Fit Criterion: Using the random class fill a 16-byte array and pass it to the encryption or decryption method. | |
| Priority: High | |
| Dependencies: None | |

| Requirement #17 | Requirement Type: 1, 3vi, 4i, 4ii, 4v |
|---|---|
| Description: Generate secret key | |
| Rationale: To make the secret key based off of the user's input. | |
| Fit Criterion: Take the user entered key and salt phrases to generate the secret key for AES256 encryption and decryption. | |
| Priority: High | |
| Dependencies: None | |

| Requirement #18 | Requirement Type: 1, 2i, 3i, 3v, 4ii, 4viii, 6i, 6iii |
|---|---|
| Description: Password verification method for AES256 | |
| Rationale: Replicates the time for verifying that the original password and salt match to add a level of confirmation to the authentication for decryption. | |
| Fit Criterion: Using the originally inputted phrases and the new attempts to match check to see if they are the same if so then begin decryption if not the stop and do not decrypt. | |
| Priority: High | |
| Dependencies: None | |

| Requirement #19 | Requirement Type: 1, 3i, 4i, 4iii, 4iv |
|---|---|
| Description: AES256 Encryption | |
| Rationale: The encryption with the AES256 standard for providing the additional option on encryption methods for the project, | |
| Fit Criterion: Taking text from a file, the generated IV, and the generated secret key it will encrypt that text in AES256 and return it to a file to be stored. | |
| Priority: High | |
| Dependencies: 05, 06, 07, 08, 09, 16, 17, | |

| Requirement #20 | Requirement Type: 1, 3i, 4i, 4ii, 4iv |
|---|---|
| Description: AES256 Decryption | |
| Rationale: Decryption for the AES256 method that is necessary to get the AES256 encrypted text back to the original text from the original file. | |
| Fit Criterion: Taking the encrypted text from the file, previously generated IV, and previously generated secret key to decrypt the text. This is because this is still in one instance not separate instances, meaning that the encryption just happened, and the information has been verified and decryption has begun in the same instance. | |
| Priority: High | |
| Dependencies: 05, 06, 07, 08, 09, 16, 17, 18, 19 | |