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CSCE 361  
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### **Implemented Features**



A short document that describes which features successfully implemented and any limitations (i.e. any known problems or issues with the program) such as features that unable to be completed on time. It should include a discussion of your plans for the next phase of your project. These are the next features and/or improvements you plan to make to your program (assume that you will continue working on this project next semester).

## I. Completed Requirements

### A. General Requirements

1. The program shall allow the user to specify files and directories within root directories to be ignored by the system.
2. The program shall allow the user to specify a remote file space for files to be synced to.
3. The program shall automatically sync changed files under root directories to the remote filesystem.
4. The program shall provide the user the ability to choose how files are synced to the remote filesystem:
  - a) The program shall encrypt files and sync to the remote, or
  - b) The program shall not encrypt files but still sync to the remote.
5. The program shall provide a record, to the user, of each file watched by the program, which contains:
  - a) The file's path relative to its root directory.
  - b) Time of latest modification of file.
  - c) Time of latest sync of the file.
  - d) If encryption is enabled for the file.
6. The program shall update local files if the corresponding files on the remote filesystem has a more recent modification time.

### B. Crypto Requirements

1. The crypto module shall provide a method to generate a new 32-bit symmetric key in the fernet format.
2. The crypto module shall automatically produce a 32-bit symmetric, fernet format, key for the user if none is provided.
3. The crypto module shall provide a method to encrypt target files.
  - a) This method will be automatically executed by the program.
  - b) This method can be manually executed by the user.
4. The crypto module shall provide a method to decrypt target files.
  - a) This method will be automatically executed by the program.
  - b) This method can be manually executed by the user.

### C. GUI Requirements

1. The program shall present the user with a GUI once the user runs the program executable.
2. The GUI shall provide means for the user to exit.
3. The GUI shall provide means for root directories to be added the the program's watch list.

4. The GUI shall provide means for files or directories, under watched root directories, to be ignored and not automatically synced.
5. The GUI shall provide means for auto-encryption to be enabled for files or directories under watched root directories.
6. The GUI shall provide means for auto-encryption to be disabled for files or directories under watched root directories.
7. The GUI shall display to the user relevant information of a selected file contained within a watched root directory. See 2.2.1 part 6 for specified information.
8. The GUI shall provide means for the user to specify a target remote file system for the program to sync.

## II. Proposed Requirements

### A. General Requirements

1. The program shall watch one or more root directory trees.
2. The program shall allow the user to specify files and directories within root directories to be ignored by the system.
3. The program shall allow the user to specify a remote filesystem for files to be synced to.
4. The program shall automatically sync changed files under root directories to the remote filesystem.
5. The program shall provide the user the ability to choose how files are synced to the remote filesystem:
  - a) The program shall encrypt files and sync to the remote, or
  - b) The program shall not encrypt files but still sync to the remote.
6. The program shall provide a record, to the user, of each file watched by the program, which contains:
  - a) The file's path relative to its root directory.
  - b) Time of latest modification of file.
  - c) Time of latest sync of the file.
  - d) If encryption is enabled for the file.
7. The program shall update local files if the corresponding files on the remote filesystem has a more recent modification time.

### B. Crypto Requirements

1. The crypto module shall provide a method to generate a new 32-bit symmetric key in the fernet format.
2. The crypto module shall automatically produce a 32-bit symmetric, fernet format, key for the user if none is provided.
3. The crypto module shall provide a method to encrypt target files.
  - a) This method will be automatically executed by the program.
  - b) This method can be manually executed by the user.
4. The crypto module shall provide a method to decrypt target files.
  - a) This method will be automatically executed by the program.
  - b) This method can be manually executed by the user.
5. The crypto module shall automatically encrypt synced files below a specified size.

- a) The default size for the crypto module shall be 2GB.
- b) The crypto module shall provide a method for the user to specify a custom maximum file size.

#### C. GUI Requirements

1. The program shall present the user with a GUI once the user runs the program executable.
2. The GUI shall provide means for the user to exit.
3. The GUI shall provide means for root directories to be added to the program's watch list.
4. The GUI shall provide means for root directories to be removed from the program's watch list.
5. The GUI shall provide means for files or directories, under watched root directories, to be ignored and not automatically synced.
6. The GUI shall provide means for auto-encryption to be enabled for files or directories under watched root directories.
7. The GUI shall provide means for auto-encryption to be disabled for files or directories under watched root directories.
8. The GUI shall display to the user relevant information of a selected file contained within a watched root directory. See 2.2.1 part 6 for specified information.
9. The GUI shall provide means for the maximum auto-encryption files size to be adjusted by the user.
10. The GUI shall provide means for the user to specify a target remote file system for the program to sync.
11. The GUI shall provide means for local files to be manually encrypted. These files do not need to be under root directories watched by the program.
12. The GUI shall provide means for local files to be manually unencrypted. These files do not need to be under root directories watched by the program.
13. The GUI shall provide means for the user to set a given 32-bit symmetric, fernet format key as the encryption key used by the program.
14. The GUI shall provide mean for generation of 32-bit symmetric, fernet format keys.