

# Purpose of this document

The purpose of this document is to outline the problem, the requirements of the solution, the responsibilities and skills of the development team, and possible methods of completing the project. Furthermore, this document aims to determine whether or not the solution is feasible.

# Client details

Nicholas Dingle

Business / Occupation: Lithgow High School / Teacher

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# Problem outline

Mr Dingle needs an encryption solution to protect sensitive student information. The client is not very tech savvy, and needs the solution to be user friendly and easy to use. Furthermore, the user does not have access to internet, and needs the solution to work offline. Mr Dingle may use the encryption solution to encrypt a variety of files, such as videos, images, text files, and other weird files. To stop others from accessing his files, Mr Dingle needs the files to be password protected, have some sort of defense against brute force decryption and generally be secure.

# Requirements of software solution

## Input requirements

A file to encrypt.

A location to place the encrypted version of the file into.

A password to encrypt/decrypt the file with.

## Output requirements

An encrypted version of the file.

A Decrypted version of the file.

messages letting the user know if the encryption was successful/unsuccessful.

## Performance requirements

The solution needs to encrypt and decrypt all files in a reasonable amount of time.

## Social and ethical requirements

The solution needs to encrypt files in a secure enough manner to meet the expectations of the user. If the solution fails to do this, the user’s sensitive files will be at risk. Due to this, the program will use a combination of splitting files, zipping them, and encrypting them using the letters of the password in order to protect from unauthorized access. Furthermore, in order to stop attempts to brute force the password, the program will include an optional security measure that will require and extra security key. If this option is enabled, the program will shut down the computer in order to stop the brute force program from running.

## 4.5 Technical Requirements

Processor: 1.0 Ghz or faster

RAM: 1 GB

Storage: 17 GB

# Development Team members

## List members

Eilia Keyhanee

## Member skills and knowledge

Eilia Keyhanee:

* Knowledge of XAML
* Knowledge of file encryption
* Competent problem solving skills
* Knowledge of C# programming
* Basic knowledge of UI design

## Member responsibilities

Eilia Keyhanee:

* Client Communication
* System documentation
* UI design
* Encryption algorithm
* Other programming
* User Documentation
* Bug testing

# Potential development approaches

{Problems can be solved in lots of different ways. So what software development approach will be used? What tools will be used to assist in development, what platform(s) could this exist on, etc}

## Approach #1

A structured approach, is the traditional approach to developing software, with a rigid plan of action, Define, Plan, Build, Test, Maintain.

The positives of this approach for this solution include:

* A clear course of action and plan to follow.
* Less buggy due to dedicated debugging and testing section

The negatives include:

* Takes a long time to do
* Not optimal for a small team.
* Not very flexible or open to change

## Approach #2

A combination of a structured approach and an agile approach, where the rigid structure of the structured approach is maintained, but the ‘Build’ section of the approach is conducted in an agile manner, feature by feature.

Some of the positives of this approach include:

* Maintains a clear course of action and plan.
* The dedicated debugging section remains.
* Optimal for a small team as issues can be tackled one at a time.
* flexible as new features can be added on any time during the build section.

Some of the negatives include:

* Still may take a long time to do, as each step of the structured approach must still be addressed.

## Conclusion

For this project, considering the small team size, the relatively limited time frame, the inherent requirement for planning, and the importance of delivering a bug free product, I have decided to deploy the second development approach of a combination of structured and agile development approach.