Main Mission

# Design Decisions:

## Overview:

Some of the major design decisions that were made in my approach to this problem were done on the grounds of ease of implementation, future maintenance of the software and reliability. My design decisions for this half of the assignment were also driven by the knowledge that I would have to adjust my program to be able to deal with multiple

## Linked lists:

REWORD

I chose to use linked lists as my storage method for the system; this decision was made due to my familiarity with this particular ADT, and because of the fact that if I were to use arrays the files would have to be read twice, firstly to determine the length of the array and secondly to populate said array, linked lists are the fastest way I know of to read in the given data.

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## Logging:

To tackle the challenge of logging all actions taken I decided to create a log.txt, and append to this file whenever an action was taken by my program, I open and close the file at every log to avid a loss of data if the program experiences an unexpected termination e.g. power failure . All log entries are below 80 characters in length to ensure that most terminals can display a single log entry per line.

## Compartmentalising of processes:

The decision to structure the program as it is structured was again taken with the expectation that the system would be maintained in the future and a more modular approach allows for a far easier to manage and transparent system. An apropriate header file for each source file moduel was written to allow for the posibiltiy of the source files being re-used in other programs or even later versions of the same program.

## String length choices:

The maximum length of strings was chosen to vary throughout the program, for example the maximum length for a file is 100 characters due to the nature of string, I expect that 100 characters would be enough and I have defined the number of characters in the definitions.h file for ease of editing in future iterations of the software, other String lengths are also held in the definitions file.

30 characters for other names used throughout the program seemed an appropriate decision while developing the software, again defined in definitions.h for ease of maintenance.

## Definitions header:

A definitions header was written to contain a definition for a variety of variables. This was done to allow for a quick adjustment to the system, for example if the systems area of effect was changed, the updater would only need to adjust one file.