

# DESIGN DOC

## Design Decisions:

- Function `create_mail_label` has an argument `dir_name` and it uses `CREATE` command in `curl` to create a new directory.
- Function `remove_directory_mail` also has an argument `dir_name` and uses `DELETE` command in `curl` to remove a directory.
- Function `is_dir`, checks if a path is a directory or not. It uses `LIST` command in `curl` to list all directories, and then checks the output of the command to determine, if the path given was a directory or not.
- Function `find_size` works to determine the size of a file.
- Function `create_file_send_mail` is used to send a mail. It opens a temp file which contains the contents of the mail and then sends the content of the file to the directory specified in the file system.
- Function `format_the_mapping_file` copies the content of the mapping file to another file.
- Function `retrieve_mapping_mail`, uses `mapping_uid` global variable to access the `mapping_mail` of a directory and store the contents in a temporary file, `mapping.txt`.
- Function `create_mapping_mail` uses the content of `mapping2.txt` and the path to send a mapping mail to the directory specified by the path.
- Function `add_dir` adds a directory, and similarly function `add_file` adds a file to the file system. `add_file` function creates the content of the file to be sent, and then sends the mail by calling `create_file_send_mail` function. Then it opens `mapping2.txt` and adds the new file name followed by the current `file_uid` and then calling `create_mapping_mail` to send the mapping mail.
- `is_file` function calls `retrieve_mapping_mail` function to get the files in the directory and then checks the input file against the contents of the `mapping_file` to determine if the input path is a file path or not.
- Function `write_to_file` is called when contents of a file are changed. It send a new mail with thw new contents and creates a new mapping mail with updated uid values for the updated file.
- Function `remove file` creates a mapping mail with the file name input to the function removed from the mapping mail.
- Function `do_readdir` is called to get all the files and directories in a directory and function `do_read` is used to read contents of a file.
- When main function is called, it accesses the configuration file get url, port number, `user_id`, password.

Example **configuration.txt**:

```
imaps://imap.gmail.com:993/  
abcdefghijk@gmail.com  
password
```