1. Phonebook Application
2. Introduction

The Phonebook Application is a simple program that stores and manages contact information for individuals in a CSV file. The application includes functionality to add, update, delete, and view phonebook entries, as well as backup and merge data from previous phonebook entries.

1. Requirements

The Phonebook Application requires the following libraries:

* Csv
* boto3
* datetime
* pathlib
* typing

The libraries csv and boto3 are used for reading and writing to a CSV file and for interacting with AWS S3 respectively. The datetime module is used for working with dates and times, such as getting the current time, while timedelta is used to perform arithmetic operations on dates and times. Finally, the pathlib library is used to handle file paths, and the typing library is used to provide type annotations for function arguments and return values, making the code more readable and easier to understand.

1. Functions

The Phonebook Application has the following functions:

* add\_entry()

This function adds a new entry to the phonebook and validates user inputs for name, phone number, email, and address. The entry is then added to the phonebook list and exported to a CSV file.

* update\_entry(name, phone, email, address)

This function updates an existing entry in the phonebook based on the name. If the name is found in the phonebook, the entry is updated with the new phone number, email, and address information.

* delete\_entry(name)

This function deletes an existing entry from the phonebook based on the name. If the name is found in the phonebook, the entry is removed from the phonebook list and the phonebook is exported to a CSV file.

* export\_csv()

This function exports the phonebook list to a CSV file with a timestamp in the filename. The phonebook is also backed up to both AWS S3 and local storage.

* backup\_to\_aws(filename)

This function backs up the phonebook CSV file to an S3 bucket. If the backup is successful, a message is displayed indicating the backup was successful. If the backup fails, an error message is displayed indicating the cause of the failure.

* backup\_to\_local(filename)

This function backs up the phonebook CSV file to local storage. If the backup is successful, a message is displayed indicating the backup was successful. If the backup fails, an error message is displayed indicating the cause of the failure.

* view\_phonebook(sort\_by)

This function displays the phonebook entries sorted by either name (alpha) or date. If an invalid sorting method is entered, an error message is displayed.

* merge\_from\_csv(filename)

This function merges phonebook entries from an older CSV file into the current phonebook. If the merge is successful, a message is displayed indicating the number of entries that were merged. If the merge fails, an error message is displayed indicating the cause of the failure.