Backend Design

Scarlet FlashView

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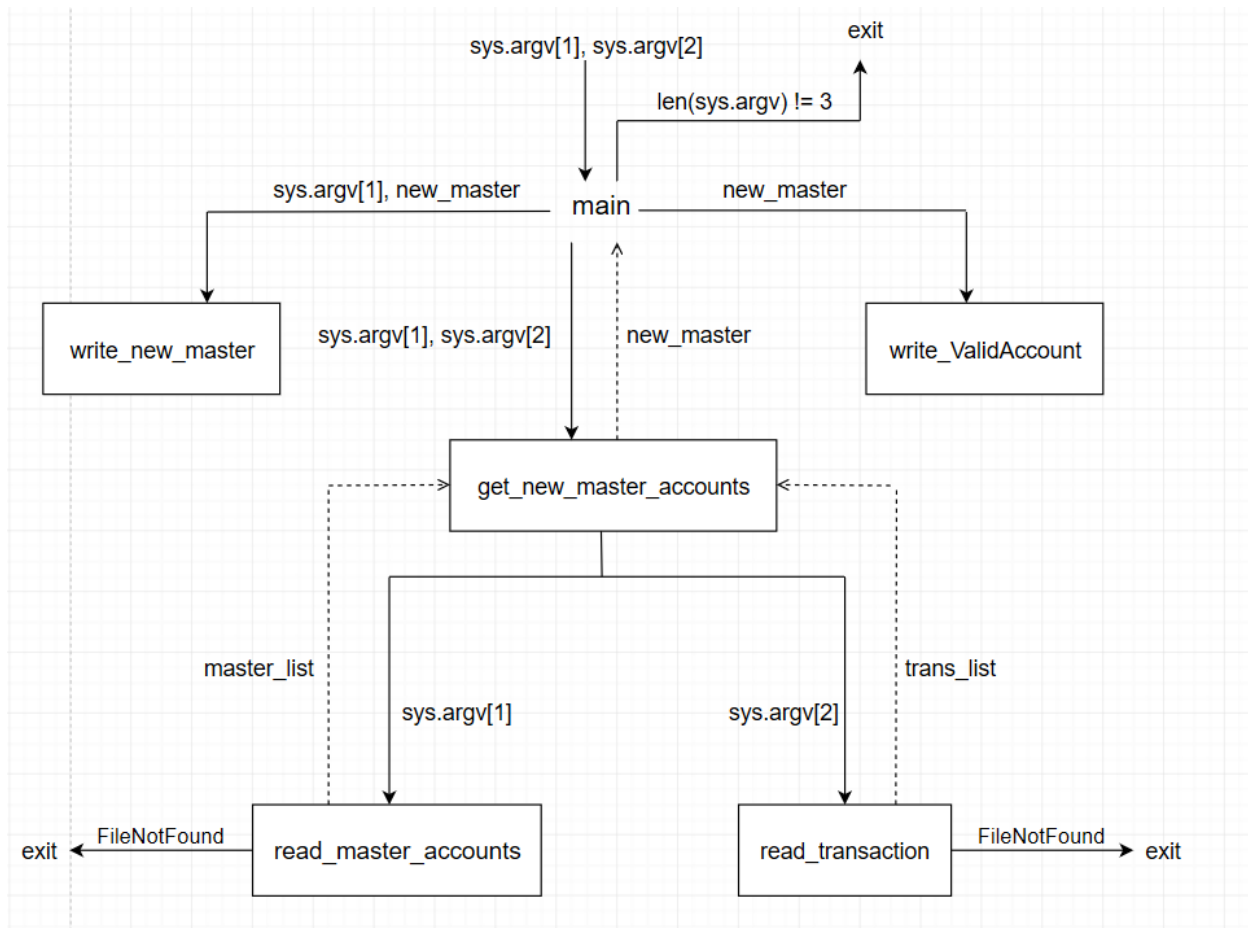
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The diagram below shows the ==structure== of "Backend" class.

sys.argv[1]: refers to the name of the old master accounts file

sys.argv[2]: refers to the name of the merged transaction summary file

master_list: a dictionary stored the content of old master accounts file with 'key': account number and 'value': a list stored balance and account name

trans_list: a list stored the content of merged transaction summary file

new_master: a dictionary stored the content of new master accounts with 'key': account number and 'value': a list stored balance and account name

We build our Master Accounts File in ascending order since the constraint is self-contradicted, the one in Lecture 7 shows the ascending order, and the other one in Course Project shows descending order!!!

The table shows the <mark>intention</mark>, <mark>input</mark> and <mark>output</mark> of each method in "Backend" class.

Class: Backend
Intention: used to produce new master accounts file and new valid accounts list file based on the inputs of merged transaction summary file and old master accounts file.

Methods	Intention	Parameters (Inputs)	Return (Outputs)
read_master_accounts	open and read old master accounts file	file: name of old master accounts file	Returns a dictionary stored the information of old master accounts file with the key "account number" and value: a list stored associated "balance" and "account name"
			If FileNotFound: Terminal Output: File not find! No such file or directory: 'MasterAccountsFile.txt'
read_transaction	open and read merged transaction summary file	file: name of merged transaction summary file	Returns a list stored the content of merged transaction summary file
			If FileNotFound: Terminal Output: File not find! No such file or directory: 'TransactionSummaryFile.txt'
get_new_master_accounts	write in the new account numbers, new balance and account names in a dictionary based on the merged transaction summary file and check negative balance; zero balance, account name in deleted account and length of each line of new master accounts.	file1: name of old master accounts file file2: name of merged transaction summary file	Returns a dictionary stored the information of new master accounts with the key "account number" and value: a list stored associated "balance" and "account name"
			If a valid account number not in the old master accounts: Terminal Output: Error! 1001234 not in the master account file!
			If balance is negative after withdraw: Terminal Output: Error! 1234567 have a negative balance!
			If balance is negative after transfer: Terminal Output: Error! 1234567 have a negative balance!
			If the new create account number appears in both transaction summary file and old master accounts: Terminal Output: Error! New account must have an unused account number!
			If the name given in a delete transaction does not match the name associated with the deleted account: Terminal Output: Error! Name not match the deleted account!

			If a deleted account does not have a zero balance: Terminal Output: Error! Balance is not zero, cannot delete!
			If a line in master accounts is over 47 characters: Terminal Output: Error! Each line is at most 47 characters!
write_new_master	write the content of new master accounts file into the New Master Accounts File and keep in ascending order of account numbers	data: the dictionary returned from the get_new_master_accounts file: name of the new master accounts file	Terminal Output: New Master Accounts File created successfully!
write_ValidAccount	write the new valid account numbers into the New Valid Accounts List File	data: the dictionary returned from the get_new_master_accounts file: name of the new valid accounts list file	Terminal Output: New Valid Accounts File created successfully!
__main__	run Backend with the two input files, Old Master Accounts and Merged Transaction Summary Files	N/A	If not provided 2 input files: Terminal Output: Invalid input, must include "MasterAccountsFile.txt TransactionSummaryFile.txt"