

Report

Problem statement: This program is simple bank management system that handles the following functions

1. **Add:**

The function takes all the user information then stores them in a file, Which is accessible by all the other functions. It also creates another file for this account's transaction.

2. **Delete:**

This function only takes the account number from the user and then search for it, if it is found this account is then transferred to the end of the array and then it saves this by printing all the other accounts in a file without the deleted account. At last, it deletes its file of transactions.

3. **Modify:**

First it takes the account number then searches for it, if found it asks for what he wants to modify then it saves the new data.

4. **Search:**

It retrieves information and prints it on the screen for a given account number.

5. **Advanced search:**

It takes a keyword from the user loops on the array to find that key word. once it's found it prints the user's information.

6. **Withdraw:**

It asks for account number, and amount to be withdrawn. Then it is saved in both main file and transaction file.

7. **Deposit:**

It takes an account number and how much he wants to deposit. Finally, it is saved also in two files the main and the transaction one.

8. **Transfer:**

Asks for two account numbers the sender and receiver, and transfers the required amount and saved.

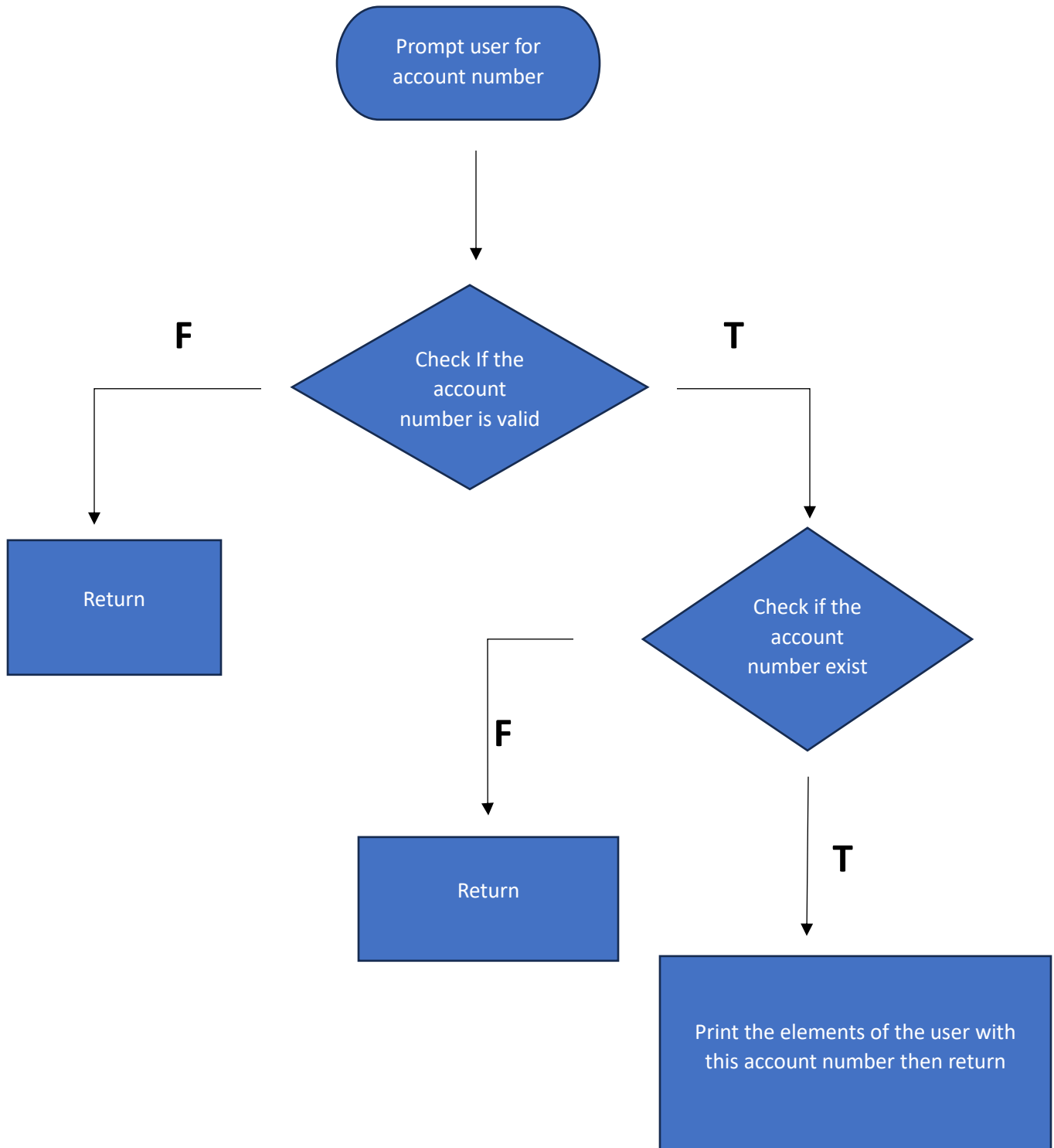
9. **Report:**

Asks for account number and print its last five transactions.

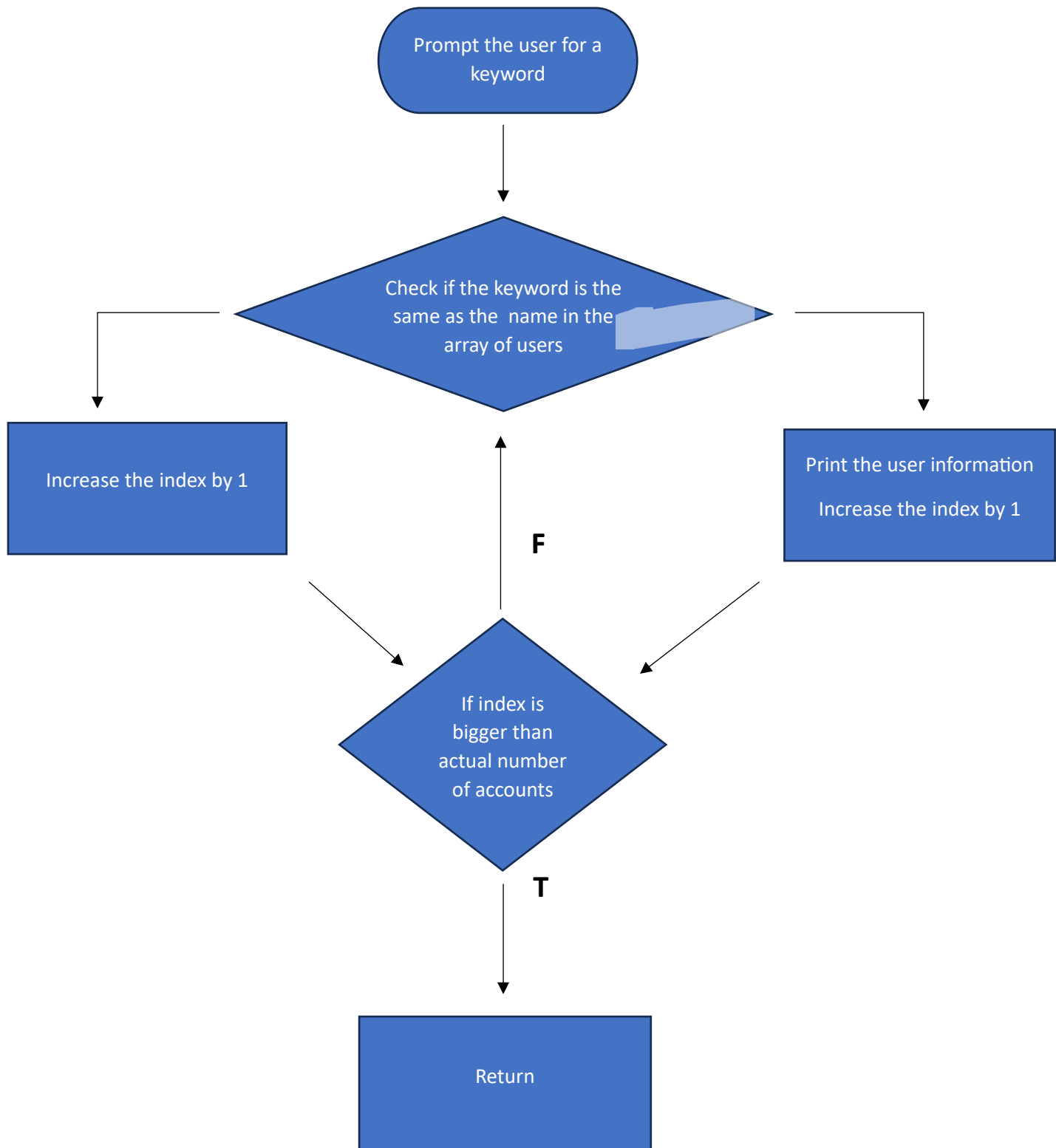
10. **Print:**

Print all the accounts in the main file un the way the user wants.

Algorithm for search:



Algorithm for advanced search:



algorithm for sort:

by balance:

1. compare each two consecutive balances.
2. If first is smaller than second switch all the information of the two users.
3. If not continue until end of array.
4. Repeat steps from 1 to 3 until a complete iteration without any swaps.

By name:

1. Compare each two consecutive names.
2. if they are the same or if the first string is smaller than the next one don't swap and continue till end of array.
3. If the second is smaller than the first swap the information of the two accounts.
4. Repeat steps from 1 to 3 until a complete iteration without any swaps.

By date:

1. Compare each two consecutive dates.
2. If the second is bigger than the first one switch all information of the two accounts.
3. If the second is smaller or the same just continue until end of array.
4. Repeat steps from 1 to 3 until a complete iteration without any swaps.

User manual:

1. Enter if you want to login or quit.

```
Pick(1:2):  
1- LOGIN  
2- QUIT  
|
```

2. Enter your username and password.

```
1  
Please enter user name:  
ahmed.mohamed  
Please enter user password:  
123$@1
```

3. Choose the operation you want to do:

- a. Add:

1. Enter a valid account number.
2. Enter a valid name.
3. Enter a valid email address.
4. Enter a valid balance.
5. Enter a valid mobile number.

```
Enter Account number: 123456789  
Enter Account number: 1234567891  
Enter Name: abdelrahman salah  
Enter Email address: abdelrahman@yahoo.com  
Enter Email address: abdelrahman@gmail.com  
Enter Balance: 100  
Enter Mobile: 01027026207  
Pick(1:2):  
1- SAVE  
2- DISCARD  
1  
New account has been added successfully!
```

- b. Delete:

1. Enter an account number of a zero balanced account.
2. Choose if you want to save or not

```
2  
Enter Account number : 9876543219  
Pick(1:2):  
1- SAVE  
2- DISCARD  
1  
Account deleted successfully!
```

```
2  
Enter Account number : 1234567891  
Sorry, You can't delete this account (Balance is not empty)
```

c. Modify:

1. Enter account number.
2. Choose what you want to modify (username, mobile number, email address)

```
3
Enter Account number : 1234567891
Do you want to update your username? Pick(1:2):
1- YES
2- NO
1
Enter your new username : mohamed youssef
Do you want to update your mobile? Pick(1:2):
1- YES
2- NO
1
Enter your new mobile number : 01001002003
Do you want to update your email address? Pick(1:2):
1- YES
2- NO
1
Enter your new email address: mohamed@yahoo.com
Pick(1:2) :
1- SAVE
2- DISCARD
1
Data Updated Successfully.Pick(1:11):
```

d. Search:

1. Enter an account number.

```
4
Enter Account Number To Find : 1234567891
Account Number : 1234567891
Name : mohamed youssef
Email : mohamed@yahoo.com
Balance : 100.00
Mobile : 01001002003
Opened : December 2023
```

e. Advanced search:

1. Enter a keyword you want to search for.

```
5
Enter Keyword : thomas
Search Results:

Account Number : 97000000003
Name : Thomas Robert
Email : michael@yahoo.com
Balance : 300.00
Mobile : 01009700003
Opened : November 2008

Search Results:

Account Number : 97000000004
Name : Roberto Thomas
Email : rob.thomas@gmail.com
Balance : 400.50
Mobile : 01009700004
Opened : November 2015
```

f. Withdraw:

1. Enter account number.
2. Enter amount you want to withdraw.

```
6
Enter Account number : 1234567891
Enter the amount you want to withdraw (the maximum amount to withdraw is 10,000 $): 100
Pick(1:2) :
1-  SAVE
2-  DISCARD
1
Successful Withdrawal.
Your new balance is 0.00 $
```

g. Deposit:

1. Enter account number.
2. Enter amount you want to deposit.

```
7
Enter Account number:1234567891
Enter amount to deposit (the maximum amount to deposit is 10,000 $): 200
Pick(1:2):
1-  SAVE
2-  DISCARD
1
Successful Deposit.
Your new balance is 200.00 $
```

h. Transfer:

1. Enter account number of sender.
2. Enter account number of receiver.
3. Enter amount to transfer.

```
8
Enter Account Number of Sender :1234567891
Enter Account Number of Receiver :9876543219
Enter amount to be transferred(the maximum amount to transfer is 10,000 $):500
Transferred 500.00 $ from account with number 1234567891 to account with number 9876543219.Pick(1:2):
1-  SAVE
2-  DISCARD
1
Successful Transfer.
```

i. Report:

1. Enter account number.

```
9
Enter Account number: 1234567891
This account only did 3 transactions:
1234567891 withdrew 100.00 $
1234567891 Deposited 200.00 $
Transferred 500.00 $ from 1234567891 to 9876543219
```

j. Print:

1. Choose sorting type (name, balance, date)

a. By name:

```
Pick(1:3):
1-   SORT BY NAME
2-   SORT BY DATE
3-   SORT BY BALANCE
1
Account 1:
Account Number : 9700000008
Name : Adam Mark
Email : ad.mark@gmail.com
Balance : 350.00
Mobile : 0100970008
Opened : October 2015

-----

Account 2:
Account Number : 9700000006
Name : Daniel Graves
Email : dgrave@outlook.com
Balance : 450.00
Mobile : 01009700006
Opened : January 2020

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Account 3:
Account Number : 9700000005
Name : David Roberts
Email : david123@gmail.com
Balance : 400.50
Mobile : 01009700005
Opened : October 2015

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Account 4:
Account Number : 9700000009
Name : James Adams
Email : j.adams@gmail.com
Balance : 250.00
Mobile : 01009700009
Opened : May 2017
```


b. By date :choose (oldest to newest) or (newest to oldest)

```
Pick(1:2):
1-   OLDEST-->LATEST
2-   LATEST-->OLDEST
1
Account 1:
Account Number : 9700000000
Name : abdelrahman salah
Email : m.jones@gmail.com
Balance : 400.00
Mobile : 01009700000
Opened : December 2007

-----
Account 2:
Account Number : 9700000003
Name : Thomas Robert
Email : michael@yahoo.com
Balance : 300.00
Mobile : 01009700003
Opened : November 2008

-----
Account 3:
Account Number : 9700000001
Name : John Roberto
Email : j.roberto@outlook.com
Balance : 100.00
Mobile : 01009700001
Opened : December 2008

-----
Account 4:
Account Number : 9700000005
Name : David Roberts
Email : david123@gmail.com
Balance : 400.50
Mobile : 01009700005
Opened : October 2015
```

c. By balance: choose descending or ascending

```
Pick(1:2):
1-   DESCENDING ORDER
2-   ASCENDING ORDER
2
Account 1:
Account Number : 9876543219
Name : saleh shehaby
Email : saleh@gmail.com
Balance : 0.00
Mobile : 01235111622
Opened : December 2023

-----

Account 2:
Account Number : 1234567891
Name : abdelrahman salah
Email : abdelrahman@gmail.com
Balance : 100.00
Mobile : 01027026207
Opened : December 2023

-----

Account 3:
Account Number : 9700000001
Name : John Roberto
Email : j.roberto@outlook.com
Balance : 100.00
Mobile : 01009700001
Opened : December 2008

-----

Account 4:
Account Number : 9700000002
Name : Timothy Korman
Email : t.korman@gmail.com
Balance : 200.00
Mobile : 01009700002
Opened : December 2015
```