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C131

ATM v7.1 Final Version

List of (Unique) features:

1. Complete error checking for all inputs
2. File structures (saved as .dat)
 - a. Accounts
 - b. Transactions
3. Passwords are encrypted in .dat file with custom key encryption algorithm
4. Admin Panel
 - a. Create/Delete accounts
 - b. Edit accounts
 - c. List accounts (w/ Page support)
5. Transaction Log (w/ Page support)
 - a. Global
 - b. Per account
6. Accounts get locked if exceeding attempts
7. Transfer money
8. Colored text prompts

Sample Output:

```
->->-~--~--=====--~--~--<-<-
Welcome to LPU Bank!
->->-~--~--=====--~--~--<-<-
Enter account number (0 to exit):
1001
-----
Enter PIN (0 to return):
0000_
```

```
->->-~--~--=====--~--~--<-<-
Welcome to LPU Bank!
->->-~--~--=====--~--~--<-<-
Enter account number (0 to exit):
1023
Invalid account number.
-----
Enter account number (0 to exit):
1001
-----
Enter PIN (0 to return):
0123
Incorrect PIN. 3 attempts remaining.
-----
Enter PIN (0 to return):
_
```

Login menu: valid and invalid inputs

```
-----
Welcome Glen!

[1] Balance Inquiry
[2] Deposit
[3] Withdrawal
[4] Transfer Money
[5] Transaction History
[6] Generate Report
[7] Logout/Change Account
[0] Exit

Enter transaction number:
```

Transaction Menu (Account: 1001)

```
-----
Account balance: Php 2900.00
-----
Would you like to do another transaction? [y/n]:
```

[1] Balance Inquiry

```
-----  
Enter amount to deposit: 2000  
-----  
Successfully deposited Php 2000.00.  
New balance: Php 4900.00  
-----  
Would you like to do another transaction? [y/n]:
```

[2] Deposit

```
-----  
Enter amount to withdraw: 1000  
-----  
Withdrawal successful.  
New balance: Php 3900.00  
-----  
Would you like to do another transaction? [y/n]:
```

[3] Withdrawal

```
-----  
Enter receiving account number: 1003  
-----  
Enter amount to transfer: 500  
-----  
Successfully transferred Php 500.00 to Yui (1003).  
New balance: Php 3400.00  
-----  
Would you like to do another transaction? [y/n]: ☐
```

[4] Transfer Money

Transaction History for Account 1001:

| ID | TYPE | AMOUNT | DATE | TIME |
|----------|----------|---------|------------|----------|
| 10000070 | Sent | 500.00 | 2023-06-08 | 09:00 AM |
| 10000069 | Withdraw | 1000.00 | 2023-06-08 | 09:00 AM |
| 10000068 | Deposit | 2000.00 | 2023-06-08 | 08:59 AM |
| 10000066 | Sent | 100.00 | 2023-06-08 | 07:37 AM |
| 10000065 | Withdraw | 4000.00 | 2023-06-08 | 07:35 AM |
| 10000064 | Deposit | 2000.00 | 2023-06-08 | 07:34 AM |
| 10000063 | Withdraw | 1000.00 | 2023-06-05 | 10:24 PM |
| 10000062 | Deposit | 1000.00 | 2023-06-05 | 10:23 PM |
| 10000061 | Withdraw | 3000.00 | 2023-06-05 | 10:07 PM |
| 10000060 | Deposit | 2000.00 | 2023-06-05 | 10:07 PM |

Page 1/3 [9] Next Page [0] Return

Enter choice:

Transaction History for Account 1001:

| ID | TYPE | AMOUNT | DATE | TIME |
|----------|----------|----------|------------|----------|
| 10000059 | Withdraw | 2800.00 | 2023-06-05 | 10:07 PM |
| 10000058 | Withdraw | 1200.00 | 2023-06-05 | 10:07 PM |
| 10000057 | Deposit | 5000.00 | 2023-06-05 | 10:07 PM |
| 10000056 | Withdraw | 2500.00 | 2023-06-05 | 10:07 PM |
| 10000054 | Sent | 7500.00 | 2023-06-05 | 10:07 PM |
| 10000052 | Sent | 6000.00 | 2023-06-05 | 10:07 PM |
| 10000051 | Deposit | 15000.00 | 2023-06-05 | 10:06 PM |
| 10000025 | Received | 2000.00 | 2023-06-05 | 10:01 PM |
| 10000021 | Received | 4000.00 | 2023-06-05 | 10:01 PM |
| 10000017 | Sent | 1000.00 | 2023-06-05 | 10:00 PM |

Page 2/3 [8] Previous Page [9] Next Page [0] Return

Enter choice:

Transaction History for Account 1001:

| ID | TYPE | AMOUNT | DATE | TIME |
|----------|----------|---------|------------|----------|
| 10000016 | Withdraw | 1000.00 | 2023-06-05 | 10:00 PM |
| 10000015 | Deposit | 1500.00 | 2023-06-05 | 10:00 PM |
| 10000014 | Deposit | 500.00 | 2023-06-05 | 10:00 PM |
| 10000001 | Created | 0.00 | 2023-06-05 | 09:52 PM |

Page 3/3 [8] Previous Page [0] Return

Enter choice:

[5] Transaction History (Page 1, 2, 3)

Note that the deposit, withdraw, and transfer transactions we did are listed first in the transaction history.

```

-----
Deposit Count: 8
Withdrawal Count: 8
Total Amount Deposited: 29000.00
Total Amount Withdrawn: 16500.00
-----
Would you like to do another transaction? [y/n]: _

```

[6] Generate Report

```

-----
Logging out...
-----
Enter account number (0 to exit):
_

```

[7] Logout / Change Account

```

-----
Welcome Glen!

[1] Balance Inquiry
[2] Deposit
[3] Withdrawal
[4] Transfer Money
[5] Transaction History
[6] Generate Report
[7] Logout/Change Account
[0] Exit

Enter transaction number: 0
->->-~--~--~--~--~--~--~--~--~--~--<-<-
Thank you for transacting with LPU Bank. <3
->->-~--~--~--~--~--~--~--~--~--~--<-<-

```

[0] Exit

```

->->-~--~--~--~--~--~--~--~--~--~--<-<-
Welcome to LPU Bank!
->->-~--~--~--~--~--~--~--~--~--~--<-<-
Enter account number (0 to exit):
1000
-----
Enter Password (0 to return):
admin

```

Login Menu: Admin account

```

-----
Welcome Admin!

[1] List Accounts
[2] Create Account
[3] Edit Account
[4] List All Transactions
[0] Logout

Enter transaction number:

```

Admin Panel

```

-----
Accounts List:
-----

```

| ACCTNO. | PIN | BALANCE | NAME | STATUS |
|---------|--------|----------|----------|--------|
| 1001 | 0000 | 3400.00 | Glen | Active |
| 1002 | 1234 | 5000.00 | Angelo | Locked |
| 1003 | 2468 | 11600.00 | Yui | Active |
| 1004 | 030918 | 20500.00 | Happy | Active |
| 1005 | 0427 | 5000.00 | Forodark | Active |
| 1006 | 4321 | 4000.00 | Shiki | Active |
| 1007 | 3030 | 5000.00 | Rebecca | Active |
| 1008 | 999999 | 7000.00 | Weisz | Active |
| 1009 | 1337 | 12300.00 | Pino | Active |
| 1010 | 8888 | 500.00 | Homura | Active |

```

-----
Page 1/2    [9] Next Page    [0] Return
-----
Enter choice: █

```

```

-----
Accounts List:
-----

```

| ACCTNO. | PIN | BALANCE | NAME | STATUS |
|---------|------|----------|--------|--------|
| 1011 | 5555 | 1200.00 | Witch | Active |
| 1012 | 2222 | 25000.00 | Hermit | Active |
| 1013 | 3333 | 4000.00 | Sister | Active |

```

-----
Page 2/2    [8] Previous Page    [0] Return
-----
Enter choice: █

```

[1] List Accounts (Page 1 and 2)

```
-----  
Create Account  
-----  
Enter Name: NEW  
-----  
Enter PIN: 1234  
-----  
Confirm PIN: 1234  
-----  
New account (1014) created successfully!  
-----  
Press Enter to continue...
```

[2] Create Account (NEW | 1234)

```
-----  
Account Selected: 1014  
  
[1] View Details  
[2] Change Name  
[3] Change PIN  
[4] Lock/Unlock  
[5] Delete Account  
[6] Change Account Selection  
[0] Return  
  
Enter choice: _
```

[3] Edit Account (Menu, Account: 1014)

```
-----  
Account: 1014  
-----  
PIN: 1234  
Balance: 0.00  
Name: NEW  
Status: Active  
-----  
Press Enter to continue...
```

[1] View Details

```

-----
Account Selected: 1014

[1] View Details
[2] Change Name
[3] Change PIN
[4] Lock/Unlock
[5] Delete Account
[6] Change Account Selection
[0] Return

Enter choice: 2
-----
Enter Name: peepeepoopoo
Name updated successfully.
-----
Press Enter to continue...

```

```

-----
Account Selected: 1014

[1] View Details
[2] Change Name
[3] Change PIN
[4] Lock/Unlock
[5] Delete Account
[6] Change Account Selection
[0] Return

Enter choice: 3
-----
Enter new PIN: 4321
-----
Confirm PIN: 4321
PIN updated successfully.
-----
Press Enter to continue...

```

[2] Change Name, [3] Change PIN

```

-----
Account Selected: 1014

[1] View Details
[2] Change Name
[3] Change PIN
[4] Lock/Unlock
[5] Delete Account
[6] Change Account Selection
[0] Return

Enter choice: 4
-----
Account locked successfully.
-----
Press Enter to continue...

```

```

-----
Account Selected: 1014

[1] View Details
[2] Change Name
[3] Change PIN
[4] Lock/Unlock
[5] Delete Account
[6] Change Account Selection
[0] Return

Enter choice: 5
-----
Confirm account deletion? [y/n]: y
-----
Account deleted successfully.
-----
Press Enter to continue...

```

[4] Lock/Unlock, [5] Delete Account

| Transaction History for All Accounts: | | | | | |
|---|----------|---------|------------|----------|---------|
| ID | TYPE | AMOUNT | DATE | TIME | ACCTNO. |
| 10000073 | Deleted | 0.00 | 2023-06-08 | 09:15 AM | 1014 |
| 10000072 | Created | 0.00 | 2023-06-08 | 09:08 AM | 1014 |
| 10000070 | Received | 500.00 | 2023-06-08 | 09:00 AM | 1003 |
| 10000070 | Sent | 500.00 | 2023-06-08 | 09:00 AM | 1001 |
| 10000069 | Withdraw | 1000.00 | 2023-06-08 | 09:00 AM | 1001 |
| 10000068 | Deposit | 2000.00 | 2023-06-08 | 08:59 AM | 1001 |
| 10000066 | Received | 100.00 | 2023-06-08 | 07:37 AM | 1003 |
| 10000066 | Sent | 100.00 | 2023-06-08 | 07:37 AM | 1001 |
| 10000065 | Withdraw | 4000.00 | 2023-06-08 | 07:35 AM | 1001 |
| 10000064 | Deposit | 2000.00 | 2023-06-08 | 07:34 AM | 1001 |
| Page 1/8 [9] Next Page [0] Return | | | | | |
| Enter choice: <input type="text"/> | | | | | |

| Transaction History for All Accounts: | | | | | |
|--|----------|---------|------------|----------|---------|
| ID | TYPE | AMOUNT | DATE | TIME | ACCTNO. |
| 10000063 | Withdraw | 1000.00 | 2023-06-05 | 10:24 PM | 1001 |
| 10000062 | Deposit | 1000.00 | 2023-06-05 | 10:23 PM | 1001 |
| 10000061 | Withdraw | 3000.00 | 2023-06-05 | 10:07 PM | 1001 |
| 10000060 | Deposit | 2000.00 | 2023-06-05 | 10:07 PM | 1001 |
| 10000059 | Withdraw | 2800.00 | 2023-06-05 | 10:07 PM | 1001 |
| 10000058 | Withdraw | 1200.00 | 2023-06-05 | 10:07 PM | 1001 |
| 10000057 | Deposit | 5000.00 | 2023-06-05 | 10:07 PM | 1001 |
| 10000056 | Withdraw | 2500.00 | 2023-06-05 | 10:07 PM | 1001 |
| 10000054 | Received | 7500.00 | 2023-06-05 | 10:07 PM | 1004 |
| 10000054 | Sent | 7500.00 | 2023-06-05 | 10:07 PM | 1001 |
| Page 2/8 [8] Previous Page [9] Next Page [0] Return | | | | | |
| Enter choice: <input type="text"/> | | | | | |

[4] List All Transactions (Page 1 and 2 only)

Other Invalid Outputs:

```
->->->->=====--~--~--~<-<-<-
Welcome to LPU Bank!
->->->->=====--~--~--~<-<-<-
Enter account number (0 to exit):

Invalid input. Input must not be empty.
-----
Enter account number (0 to exit):
    asdf124
Invalid input. Input cannot contain 'asdf'.
-----
Enter account number (0 to exit):
    2345
Invalid account number.
-----
Enter account number (0 to exit):
```

Login: empty input, non-integer input, invalid account number

```
Enter account number (0 to exit):
1001
-----
Enter PIN (0 to return):
12345
Invalid input. PIN length must be 4 or 6.
-----
Enter PIN (0 to return):

Invalid input. Input must not be empty.
-----
Enter PIN (0 to return):
1234
Incorrect PIN. 3 attempts remaining.
-----
Enter PIN (0 to return):
1234
Incorrect PIN. 2 attempts remaining.
-----
Enter PIN (0 to return):
1234
Incorrect PIN. 1 attempt remaining.
-----
Enter PIN (0 to return):
1234
Your account has been temporarily locked for your security. Please contact an administrator for assistance or try a different account. 1234-5678 0000-0000
-----
Enter account number (0 to exit):
```

Login: invalid PIN length, empty PIN, incorrect PIN, locked account

```

-----
Welcome Glen!

[1] Balance Inquiry
[2] Deposit
[3] Withdrawal
[4] Transfer Money
[5] Transaction History
[6] Generate Report
[7] Logout/Change Account
[0] Exit

Enter transaction number:
Invalid input. Input must not be empty.
-----
Enter transaction number: 10
Invalid choice.
-----
Enter transaction number: f
Invalid input. Input must be an integer.
-----
Enter transaction number:

```

Transaction Menu: empty choice, choice not in menu, non integer choice

```

-----
Enter amount to deposit: -1
-----
Deposit amount should be greater than zero.
-----
Enter amount to deposit: 1
Invalid input. Please enter a valid double.
-----
Enter amount to deposit: 

```

Deposit: negative amount, non double amount

```

-----
Enter amount to deposit: 1000
-----
Successfully deposited Php 1000.00.
New balance: Php 5400.00
-----
Would you like to do another transaction? [y/n]: asd
Invalid input. Input must be 'y' or 'n'.
-----
Would you like to do another transaction? [y/n]: 2
Invalid input. Input must be 'y' or 'n'.
-----
Would you like to do another transaction? [y/n]:
Invalid input. Input must be 'y' or 'n'.
-----
Would you like to do another transaction? [y/n]:

```

New Transaction: invalid inputs

```
-----  
Enter amount to withdraw: 0  
-----  
Withdrawal amount should be greater than zero.  
-----  
Enter amount to withdraw: 4001  
-----  
Maximum withdrawal amount is Php 4000.00.  
-----  
Enter amount to withdraw: 10000  
-----  
Withdrawal amount exceeds the available balance.  
-----  
Enter amount to withdraw: _
```

Withdrawal: 0 amount, greater than 4000, insufficient funds

```
-----  
Enter receiving account number: 1023  
Invalid account number.  
-----  
Enter receiving account number: 1001  
You cannot transfer funds to yourself.  
-----  
Enter receiving account number: 1003  
-----  
Enter amount to transfer: 10000  
Insufficient funds.
```

Transfer Money: invalid account, self transfer, insufficient funds