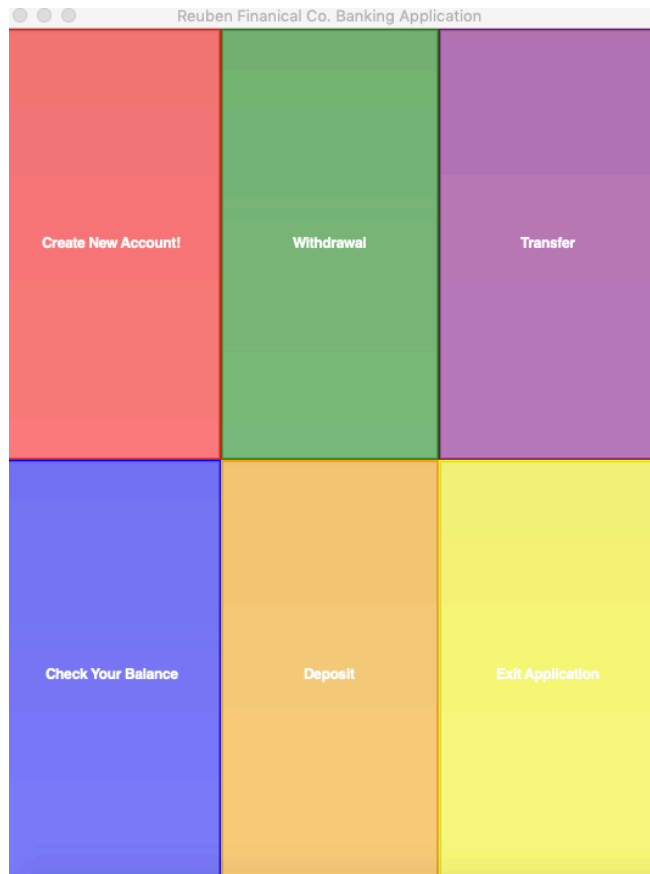


Reuben Ukah
Project Part 2.
11/20/2019

Reuben Financial CO. Bank System Documentation
Screenshots:
Main application



i. Deposit

```
mysql> SELECT * FROM account;
```

account_no	name_on_account	balance	account_open_date
20120	Reuben	20238.2	2019-11-10 17:30:08
20121	Chad	-27	2019-11-11 21:46:01
20122	'Jared'	56	2019-11-12 18:25:55
20123	'Kelechi'	-24	2019-11-12 18:28:16
20124	HeroAcademia	45634	2019-11-12 18:35:11
20125	Mom	34533	2019-11-13 20:46:01
20126	Funmilayo	20000	2019-11-13 20:46:28
20127	Funmilayo	2000	2019-11-13 20:47:14
20128	Funmilayo	2000	2019-11-13 20:48:40
20129	Cyprian	20000	2019-11-13 20:49:39
20130	Kelechi	20073	2019-11-16 19:09:33

```
11 rows in set (0.00 sec)
```

DepositAmt

Enter an account number

--- Checking Account ---

Name on account :Reuben

Account Number: 20120

New Available Balance: \$20238.2

Account opened on: 2019-11-10 17:30:08

Enter the amount you want to Deposit

```
mysql> SELECT * FROM account;
```

account_no	name_on_account	balance	account_open_date
20120	Reuben	20288.2	2019-11-10 17:30:08
20121	Chad	-27	2019-11-11 21:46:01
20122	'Jared'	56	2019-11-12 18:25:55
20123	'Kelechi'	-24	2019-11-12 18:28:16
20124	HeroAcademia	45634	2019-11-12 18:35:11
20125	Mom	34533	2019-11-13 20:46:01
20126	Funmilayo	20000	2019-11-13 20:46:28
20127	Funmilayo	2000	2019-11-13 20:47:14
20128	Funmilayo	2000	2019-11-13 20:48:40
20129	Cyprian	20000	2019-11-13 20:49:39
20130	Kelechi	20073	2019-11-16 19:09:33

```
11 rows in set (0.00 sec)
```

ii. Withdraw

```
[mysql> SELECT * FROM account;
```

account_no	name_on_account	balance	account_open_date
20120	Reuben	20288.2	2019-11-10 17:30:08
20121	Chad	-27	2019-11-11 21:46:01
20122	'Jared'	56	2019-11-12 18:25:55
20123	'Kelechi'	-24	2019-11-12 18:28:16
20124	HeroAcademia	45634	2019-11-12 18:35:11
20125	Mom	34533	2019-11-13 20:46:01
20126	Funmilayo	20000	2019-11-13 20:46:28
20127	Funmilayo	2000	2019-11-13 20:47:14
20128	Funmilayo	2000	2019-11-13 20:48:40
20129	Cyprian	20000	2019-11-13 20:49:39
20130	Kelechi	20073	2019-11-16 19:09:33

withdraw

Enter your account number

20130

Submit

Enter the amount you want to withdraw

Submit

withdraw

Enter your account number

Enter the amount you want to withdraw

tk #4

Withdrawal Successful!

```
[mysql> SELECT * FROM account;
```

account_no	name_on_account	balance	account_open_date
20120	Reuben	20288.2	2019-11-10 17:30:08
20121	Chad	-27	2019-11-11 21:46:01
20122	'Jared'	56	2019-11-12 18:25:55
20123	'Kelechi'	-24	2019-11-12 18:28:16
20124	HeroAcademia	45634	2019-11-12 18:35:11
20125	Mom	34533	2019-11-13 20:46:01
20126	Funmilayo	20000	2019-11-13 20:46:28
20127	Funmilayo	2000	2019-11-13 20:47:14
20128	Funmilayo	2000	2019-11-13 20:48:40
20129	Cyprian	20000	2019-11-13 20:49:39
20130	Kelechi	20023	2019-11-16 19:09:33

iii. Transfer

```
[mysql> SELECT * FROM account;
```

account_no	name_on_account	balance	account_open_date
20120	Reuben	20288.2	2019-11-10 17:30:08
20121	Chad	-27	2019-11-11 21:46:01
20122	'Jared'	56	2019-11-12 18:25:55
20123	'Kelechi'	-24	2019-11-12 18:28:16
20124	HeroAcademia	45634	2019-11-12 18:35:11
20125	Mom	34533	2019-11-13 20:46:01
20126	Funmilayo	20000	2019-11-13 20:46:28
20127	Funmilayo	2000	2019-11-13 20:47:14
20128	Funmilayo	2000	2019-11-13 20:48:40
20129	Cyprian	20000	2019-11-13 20:49:39
20130	Kelechi	20023	2019-11-16 19:09:33

Transfer

Enter the client account_no you want to transfer

20120

Transfer

Transfer

Enter the client account_no you want to transfer

--- Checking Account ---
Name on account :Reuben
Account Number: 20120
New Available Balance: \$20288.2
Account opened on: 2019-11-10 17:30:08

Enter the account you want to transfer to

Enter the amount you want to Deposit to their account

```
('Subtracted funds client number', '20130')  
( 'Subtracted funds A:', 20023.0)  
( 'Subtracted funds B:', 100.0)  
( 'Values A and B in getAmt', 20023.0, 100.0)  
19923.0  
Subtracted Funds!  
Going to sleep
```

Available Balance: \$2028

tk #8 1

Transfer Successful! ar

tk #7

Withdrawal Successful!

```
[mysql> SELECT * FROM account;
```

account_no	name_on_account	balance	account_open_date
20120	Reuben	20288.2	2019-11-10 17:30:08
20121	Chad	-27	2019-11-11 21:46:01
20122	'Jared'	56	2019-11-12 18:25:55
20123	'Kelechi'	-24	2019-11-12 18:28:16
20124	HeroAcademia	45634	2019-11-12 18:35:11
20125	Mom	34533	2019-11-13 20:46:01
20126	Funmilayo	20000	2019-11-13 20:46:28
20127	Funmilayo	2000	2019-11-13 20:47:14
20128	Funmilayo	2000	2019-11-13 20:48:40
20129	Cyprian	20000	2019-11-13 20:49:39
20130	Kelechi	20023	2019-11-16 19:09:33

11 rows in set (0.00 sec)

```
[mysql> SELECT * FROM account;
```

account_no	name_on_account	balance	account_open_date
20120	Reuben	20388.2	2019-11-10 17:30:08
20121	Chad	-27	2019-11-11 21:46:01
20122	'Jared'	56	2019-11-12 18:25:55
20123	'Kelechi'	-24	2019-11-12 18:28:16
20124	HeroAcademia	45634	2019-11-12 18:35:11
20125	Mom	34533	2019-11-13 20:46:01
20126	Funmilayo	20000	2019-11-13 20:46:28
20127	Funmilayo	2000	2019-11-13 20:47:14
20128	Funmilayo	2000	2019-11-13 20:48:40
20129	Cyprian	20000	2019-11-13 20:49:39

Transfer

tk #3

Account No you want to transfer

20120

Insufficient Funds!

Account ---

Name on account :Reuben

Account Number: 20120

New Available Balance: \$20408.2

Account opened on: 2019-11-10 17:30:08

Enter the account you want to transfer to

20130

Submit

Enter the amount you want to Deposit to their account

50000

Submit

ACID properties

I. Atomicity

```
mysql> mysql> SELECT * FROM account;
(base) Owners-MacBook-Pro:CSE4701 owner$ python2.7 test-bank.py
```

```
mysql> mysql> SELECT * FROM account;
+-----+-----+-----+-----+
| account_no | name_on_account | balance | account_open_date |
+-----+-----+-----+-----+
| 20120 | Reuben | 20408.2 | 2019-11-10 17:30:08 |
| 20121 | Chad | -27 | 2019-11-11 21:46:01 |
| 20122 | 'Jared' | 56 | 2019-11-12 18:25:55 |
| 20123 | 'Kelechi' | -24 | 2019-11-12 18:28:16 |
| 20124 | HeroAcademia | 45634 | 2019-11-12 18:35:11 |
| 20125 | Mom | 34533 | 2019-11-13 20:46:01 |
| 20126 | Funmilayo | 20000 | 2019-11-13 20:46:28 |
| 20127 | Funmilayo | 2000 | 2019-11-13 20:47:14 |
| 20128 | Funmilayo | 2000 | 2019-11-13 20:48:40 |
| 20129 | Cyprian | 20000 | 2019-11-13 20:49:39 |
| 20130 | Kelechi | 19873 | 2019-11-16 19:09:33 |
+-----+-----+-----+-----+
11 rows in set (0.00 sec)
```

Enter the client account_no you want to transfer

--- Checking Account ---

Name on account :Reuben

Account Number: 20120

New Available Balance: \$20408.2

Account opened on: 2019-11-10 17:30:08

Enter the account you want to transfer to

Enter the amount you want to Deposit to their account


```

[base] Owners-MacBook-Pro:project_2 owner$ python2.7 test-bank.py
19873.0
('Subtracted funds client number', '20130')
('Subtracted funds A:', 19873.0)
('Subtracted funds B:', 100.0)
('Values A and B in getAmt', 19873.0, 100.0)
19773.0
Subtracted Funds!
Going to sleep
^Z[2] Terminated: 15          python2.7 test-bank.py

```

```

[mysql> SELECT * FROM account;

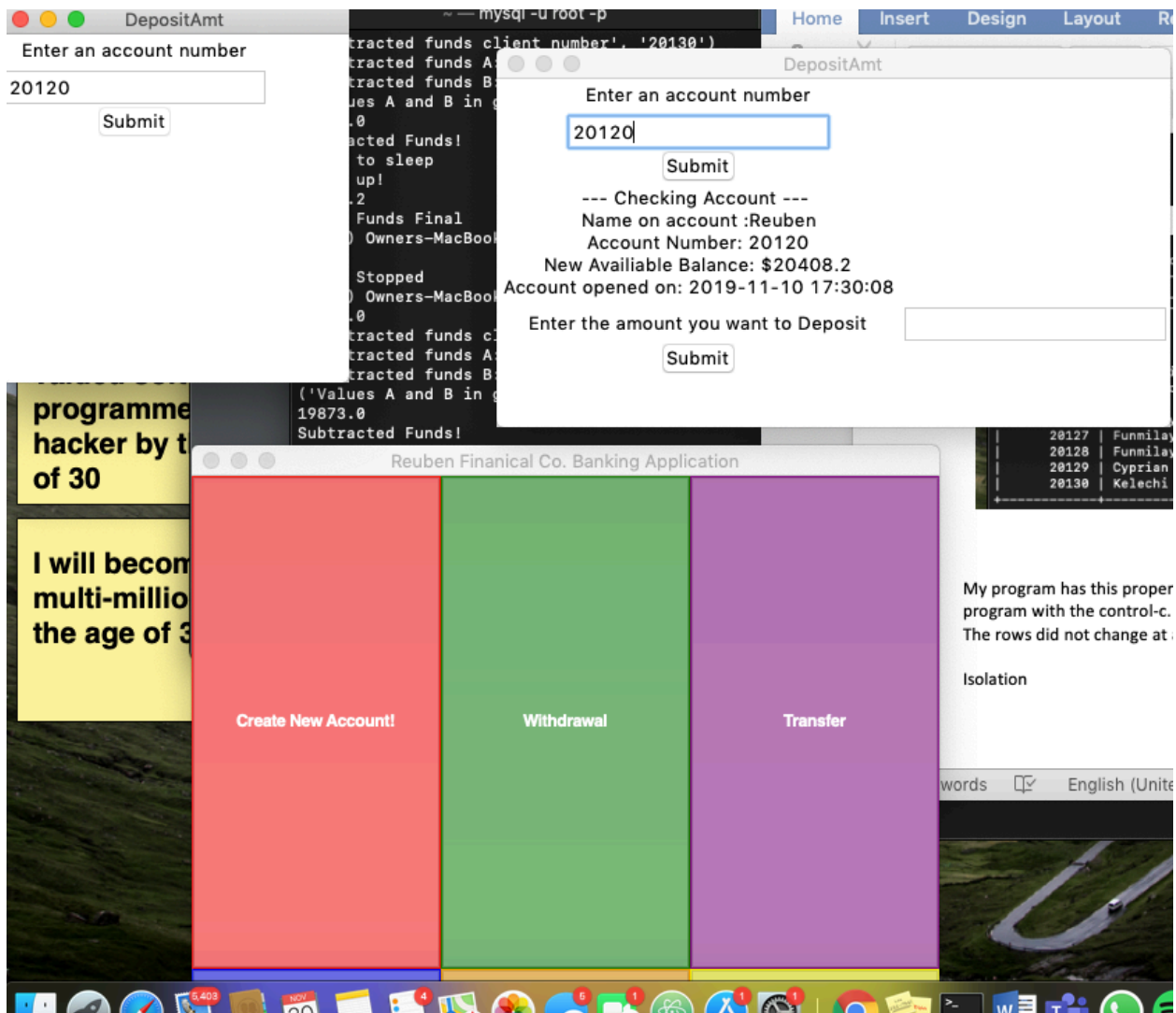
```

account_no	name_on_account	balance	account_open_date
20120	Reuben	20408.2	2019-11-10 17:30:08
20121	Chad	-27	2019-11-11 21:46:01
20122	'Jared'	56	2019-11-12 18:25:55
20123	'Kelechi'	-24	2019-11-12 18:28:16
20124	HeroAcademia	45634	2019-11-12 18:35:11
20125	Mom	34533	2019-11-13 20:46:01
20126	Funmilayo	20000	2019-11-13 20:46:28
20127	Funmilayo	2000	2019-11-13 20:47:14
20128	Funmilayo	2000	2019-11-13 20:48:40
20129	Cyprian	20000	2019-11-13 20:49:39
20130	Kelechi	19773	2019-11-16 19:09:33

ii. Consistency

My program has this property, because if you look at the atomicity section, when I closed the program with the control-c. My program was able to retain the same rows that it had before. The rows did not change at all.

iii. Isolation



It froze

```
(base) Owners-MacBook-Pro:project_2 owner$ python2.7 test-bank.py
Exception in Tkinter callback
Traceback (most recent call last):
  File "/anaconda2/lib/python2.7/lib-tk/Tkinter.py", line 1547, in __call__
    return self.func(*args)
  File "test-bank.py", line 165, in <lambda>
    SubmitBtn = Button(DepositWindow, command = lambda : self.addfunds(accts_no = v.get(), window=DepositWindow), text="Submit").grid(row=2, column=0)
  File "test-bank.py", line 331, in addfunds
    curA.execute(rows,(accts_no,))
  File "/anaconda2/lib/python2.7/site-packages/mysql/connector/cursor_cext.py", line 266, in execute
    raw_as_string=self._raw_as_string)
  File "/anaconda2/lib/python2.7/site-packages/mysql/connector/connection_cext.py", line 475, in cmd_query
    sqlstate=exc.sqlstate)
DatabaseError: 1205 (HY000): Lock wait timeout exceeded; try restarting transaction
```