

HCL Bank Web Application

Users:

1.Admin

- Can add a new account and new administration user
- .Can view all accounts and users.
- Can update an account or delete an account.

2.Manager

- Can transfer,deposit and withdraw money.
- Can view all accounts.

3.Clerk

- Can view only transaction log information.

Actions:

1.**Login** :This is used to login for a particular person. It takes parameters like username and password. If login fails he/she will be redirected to the home page.

2.**Add Account**: This is used to create a new bank account by the admin. The inputs are name, address, phone number, email,account type,balance, aadhar card and pan card.

3.**Add User**: This is used to create a new administrative user account by the admin. The inputs are username, password, address, phone number, email, user type.

4.**ShowAllAccounts**: This displays all the accounts in the database.

5.**Update Account**: This is used to update details of the account like phone, email, address.

6.**Delete Account**: This is used to suspend or delete the account from the database.

7.**Transfer**: This is used to transfer money from one account to another account. The inputs are from account id, to account id and the amount to be transferred.

8.**Deposit**: This is used to deposit money into an account. The inputs are to account id and the amount to be deposited.

9. **Withdraw:** This is used to withdraw money from an account. The inputs are from account id and the amount to be transferred.

10. **Transaction Log:** This is used to display the transaction details of the accounts.

Configuration: Java Configuration is used instead of xml.

- **Configuration Files:** Model Config, Web Config, Web Initializer.

DAO Layer:

- **Entities:** Account, TransactionLog, User, Account Type, Account Status, User Type, Transaction Type.
- **Interfaces:** AccountDao, TransactionLogDao, UserDao.
- **Exceptions:** Account not found, user not found.

Service Layer:

- **Interfaces:** AccountService, TransactionLog Service, User Service.
- **Aspects:** Loggable(custom annotation), Logging Aspect.

Web Layer:

- **Controller:** Account Controller, Transaction Controller, User Controller, Login Controller.
- **Form Beans:** Account Bean, User Bean, Login Bean, Transfer Bean, Withdraw Bean, Deposit Bean

Resources: Database properties, log4j, Validation Properties.

Views: Add account, add user, all accounts, update account, home, login, logout, deposit, transfer, success, txlog, 404, db error.

CSS Resources: Form, table.

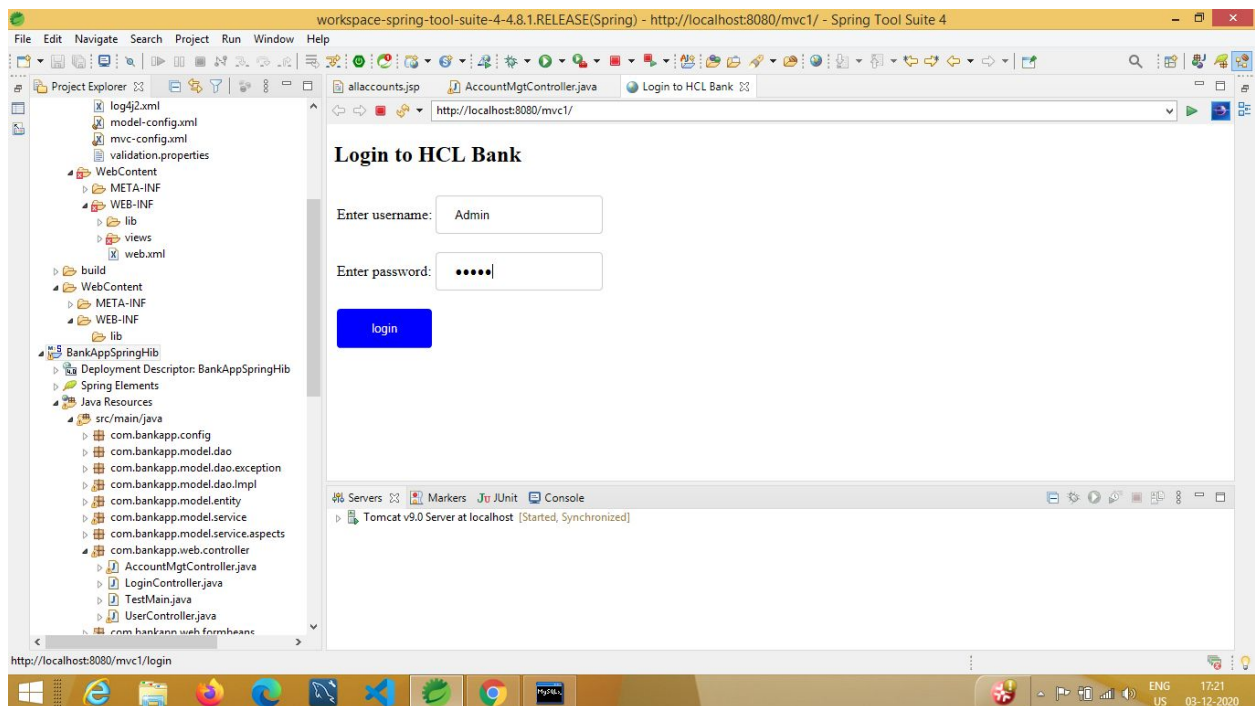
Validations:

Account Number: Account number cannot be empty.

Amount: Amount cannot exceed the limit while transfer and deposit actions and cannot be less than minimum balance while withdrawal action.

Type Mismatch: The entry should match with the type of field i.e numeric or string.

Login Page:



Admin Page:

workspace-spring-tool-suite-4-4.8.1.RELEASE(Spring) - http://localhost:8080/mvc1/ - Spring Tool Suite 4

Project Explorer: log4j2.xml, model-config.xml, mvc-config.xml, validation.properties, WebContent, META-INF, WEB-INF, lib, views, web.xml, build, WebContent, META-INF, WEB-INF, lib, BankAppSpringHib, Deployment Descriptor: BankAppSpringHib, Spring Elements, Java Resources, src/main/java, com.bankapp.config, com.bankapp.model.dao, com.bankapp.model.dao.exception, com.bankapp.model.dao.impl, com.bankapp.model.entity, com.bankapp.model.service, com.bankapp.model.service.aspects, com.bankapp.web.controller, AccountMgtController.java, LoginController.java, TestMain.java, UserController.java, com.bankapp.web.frontend

Browser: http://localhost:8080/mvc1/home

Hi, Admin

[Create New Bank Account](#)
[Show All Accounts](#)
[Create New Administrative User](#)
[Logout](#)

Console: Tomcat v9.0 Server at localhost [Apache Tomcat] C:\Program Files\Java\jdk1.8.0_271\bin\javaw.exe (03-Dec-2020, 5:19:54 pm)

```
roles0_User_uid as User_uid1_1_0_,
roles0_role as role2_1_0_
from
roles roles0_
where
roles0_User_uid=?
```

All Accounts:

workspace-spring-tool-suite-4-4.8.1.RELEASE(Spring) - http://localhost:8080/mvc1/ - Spring Tool Suite 4

Project Explorer: log4j2.xml, model-config.xml, mvc-config.xml, validation.properties, WebContent, META-INF, WEB-INF, lib, views, web.xml, build, WebContent, META-INF, WEB-INF, lib, BankAppSpringHib, Deployment Descriptor: BankAppSpringHib, Spring Elements, Java Resources, src/main/java, com.bankapp.config, com.bankapp.model.dao, com.bankapp.model.dao.exception, com.bankapp.model.dao.impl, com.bankapp.model.entity, com.bankapp.model.service, com.bankapp.model.service.aspects, com.bankapp.web.controller, AccountMgtController.java, LoginController.java, TestMain.java, UserController.java, com.bankapp.web.frontend

Browser: http://localhost:8080/mvc1/allaccounts

All the accounts

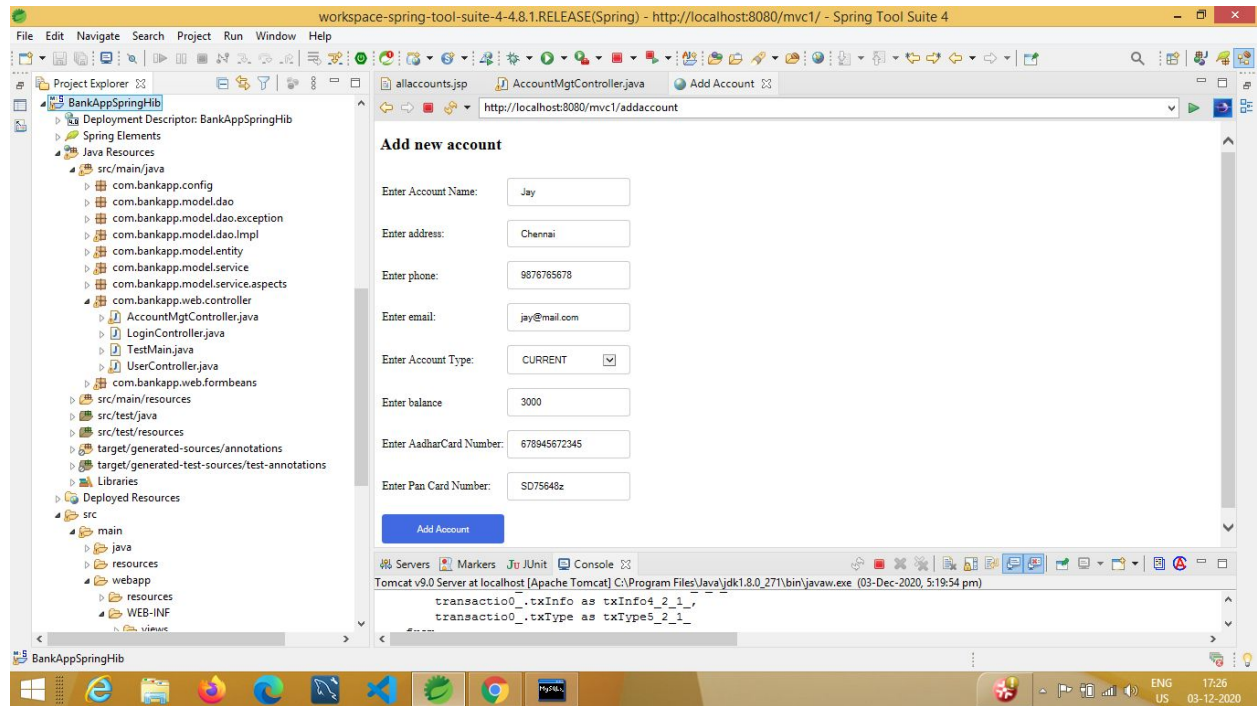
accountId	name	address	phone	email	accountType	balance	updateaccount	deleteaccount
1	sri	SKLM	9653559246	bhavani@gmail.com	CURRENT	1850.8899999999999	Update Account	Delete Account
2	Sravanthi	BLR	9576596562	sri@gmail.com	SAVING	6350.9	Update Account	Delete Account
11	Harry	Mumbai	7876543212	harry@mail.com	CURRENT	10000.0	Update Account	Delete Account
12	Geetha	Vizag	876545674	geet@mail.com	SAVING	40000.0	Update Account	Delete Account

[Add Account](#)

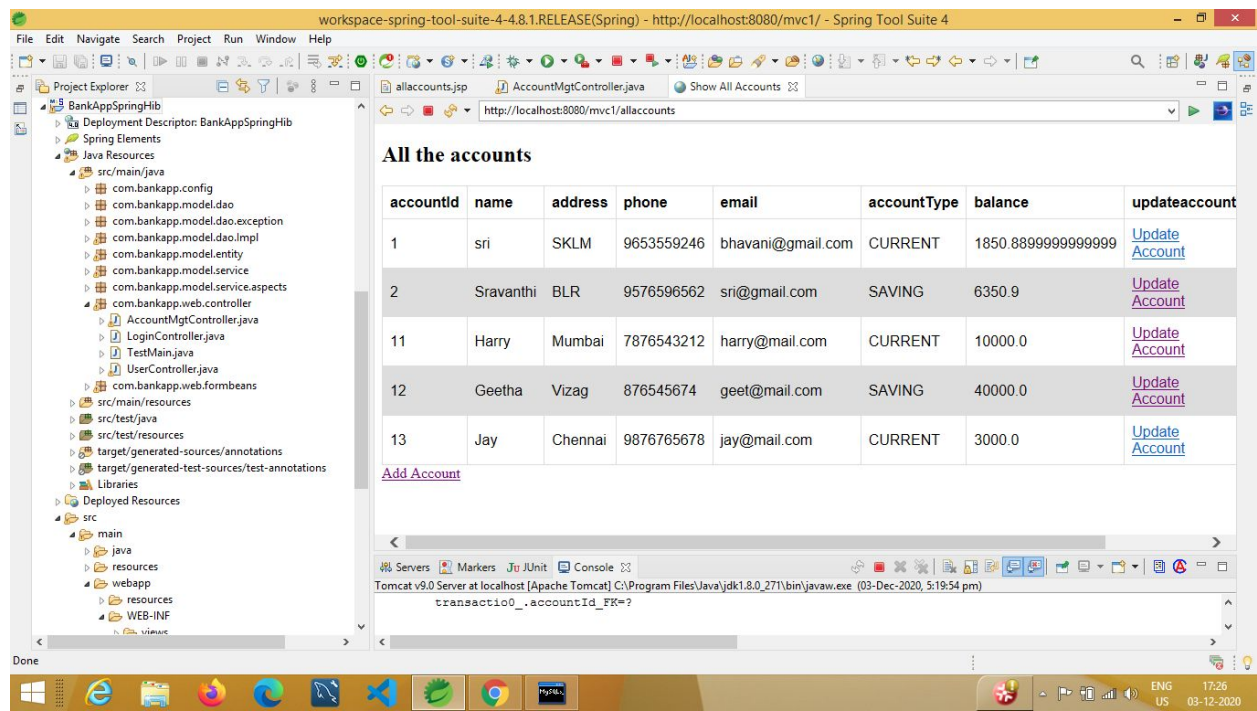
Console: Tomcat v9.0 Server at localhost [Apache Tomcat] C:\Program Files\Java\jdk1.8.0_271\bin\javaw.exe (03-Dec-2020, 5:19:54 pm)

```
transaction0_txInfo as txInfo4_2_1_1_
transaction0_txType as txType5_2_1_1_
from
txLog_table transaction0_
where
transaction0_accountId_FK=?
```

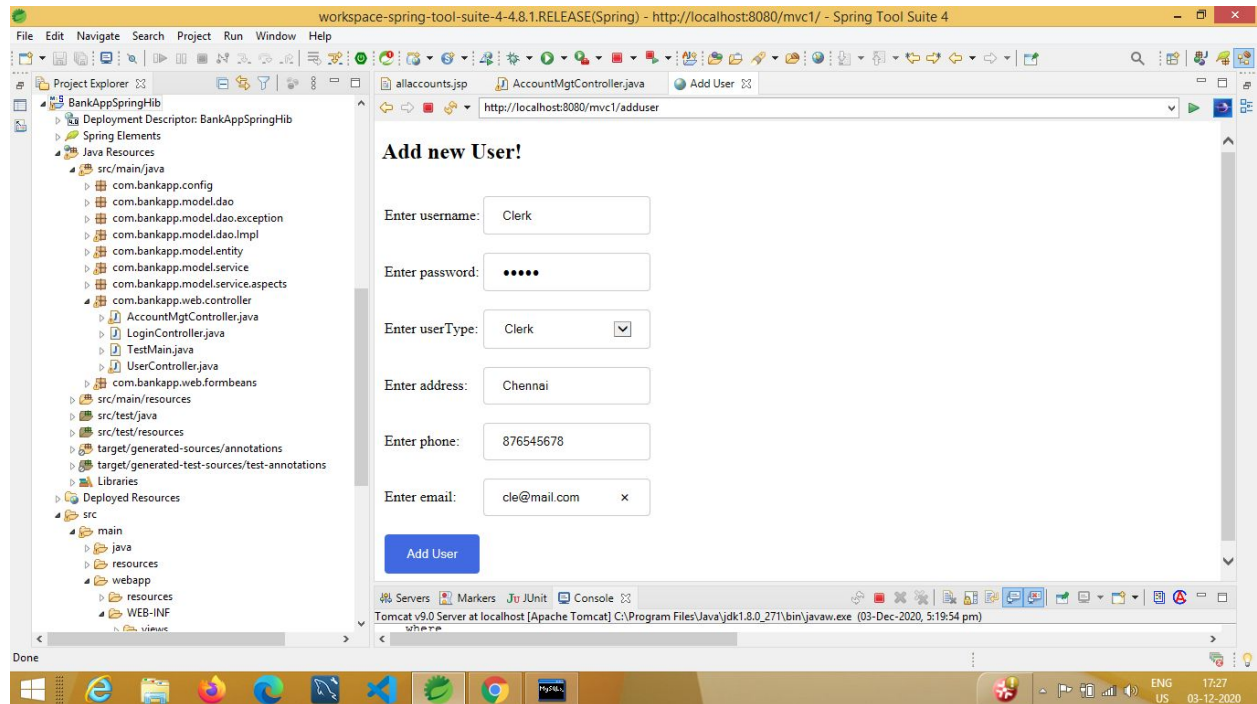
Add new account:



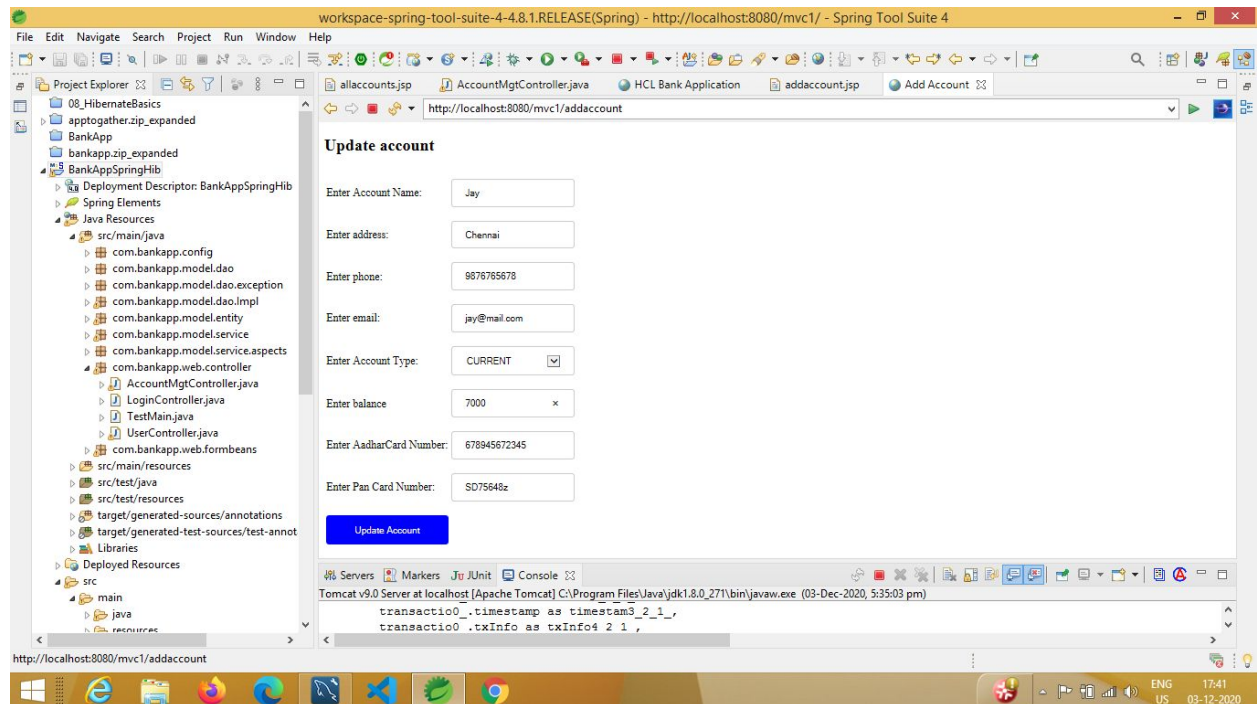
All Accounts After Adding Account:



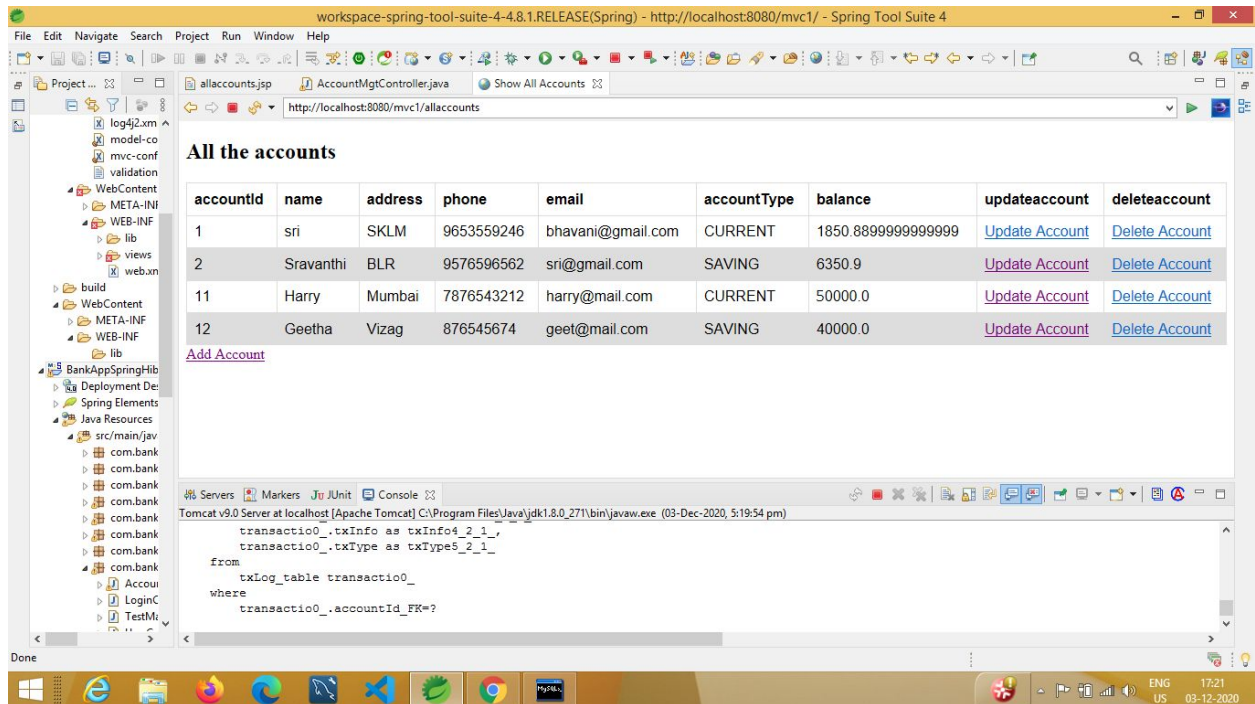
Add new user:



Update Account:



After updating an account:



workspace-spring-tool-suite-4-4.8.1.RELEASE(Spring) - http://localhost:8080/mvc1/ - Spring Tool Suite 4

Project: allaccounts.jsp, AccountMgtController.java, Show All Accounts

http://localhost:8080/mvc1/allaccounts

All the accounts

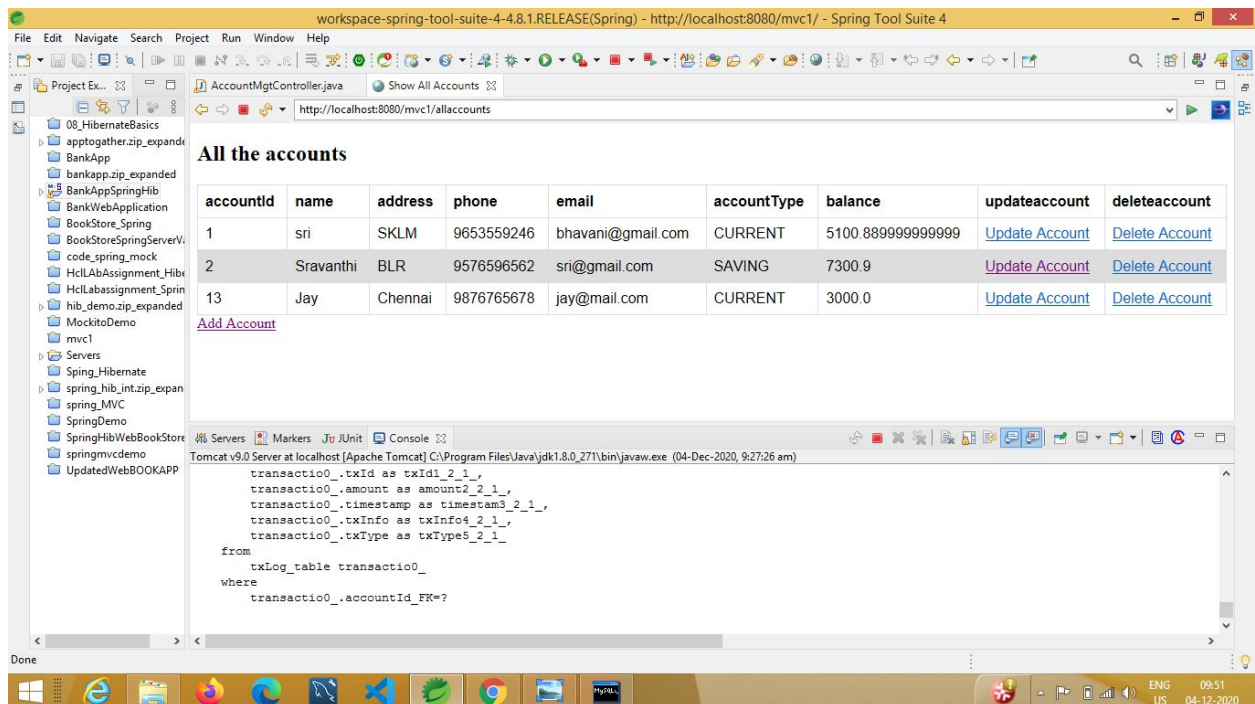
accountId	name	address	phone	email	accountType	balance	updateaccount	deleteaccount
1	sri	SKLM	9653559246	bhavani@gmail.com	CURRENT	1850.8899999999999	Update Account	Delete Account
2	Sravanthi	BLR	9576596562	sri@gmail.com	SAVING	6350.9	Update Account	Delete Account
11	Harry	Mumbai	7876543212	harry@mail.com	CURRENT	50000.0	Update Account	Delete Account
12	Geetha	Vizag	876545674	geet@mail.com	SAVING	40000.0	Update Account	Delete Account

[Add Account](#)

Servers: Tomcat v9.0 Server at localhost [Apache Tomcat] C:\Program Files\Java\jdk1.8.0_271\bin\javaw.exe (03-Dec-2020, 5:19:54 pm)

```
transaction0_.txInfo as txInfo4_2_1_,
transaction0_.txType as txType5_2_1_
from
  txLog_table transaction0_
where
  transaction0_.accountId_FK=?
```

After deleting an account:



workspace-spring-tool-suite-4-4.8.1.RELEASE(Spring) - http://localhost:8080/mvc1/ - Spring Tool Suite 4

Project: AccountMgtController.java, Show All Accounts

http://localhost:8080/mvc1/allaccounts

All the accounts

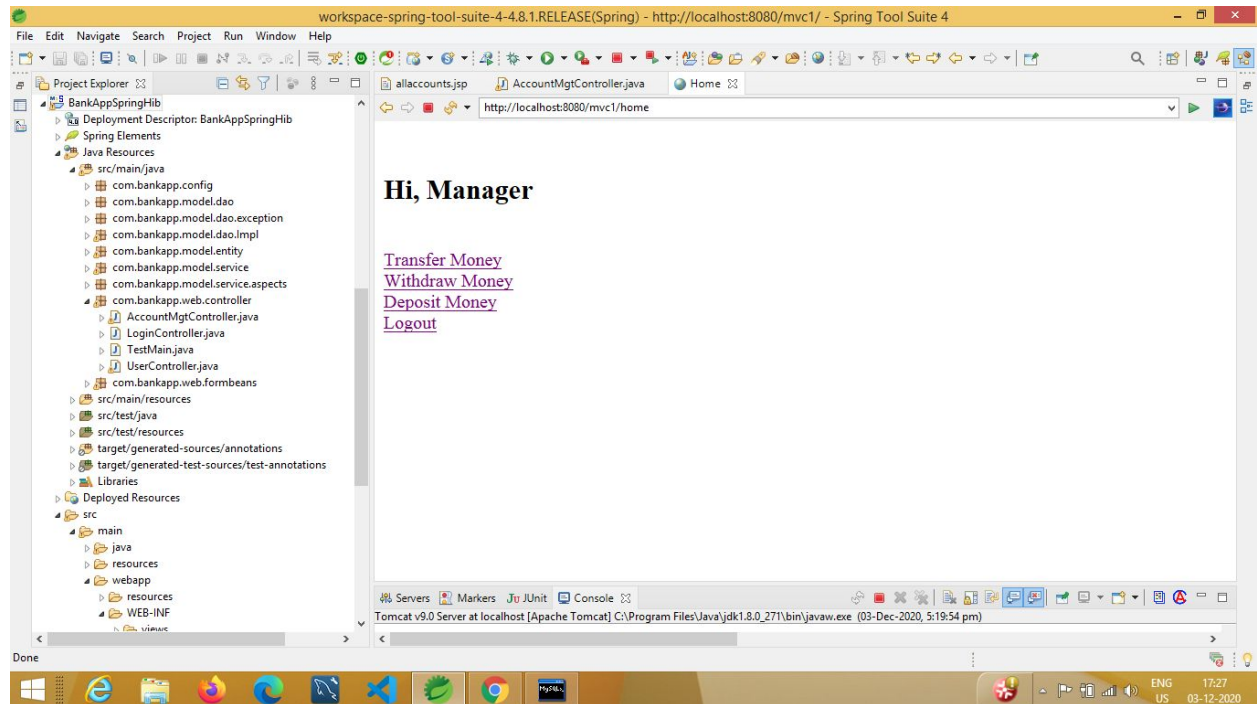
accountId	name	address	phone	email	accountType	balance	updateaccount	deleteaccount
1	sri	SKLM	9653559246	bhavani@gmail.com	CURRENT	5100.8899999999999	Update Account	Delete Account
2	Sravanthi	BLR	9576596562	sri@gmail.com	SAVING	7300.9	Update Account	Delete Account
13	Jay	Chennai	9876765678	jay@mail.com	CURRENT	3000.0	Update Account	Delete Account

[Add Account](#)

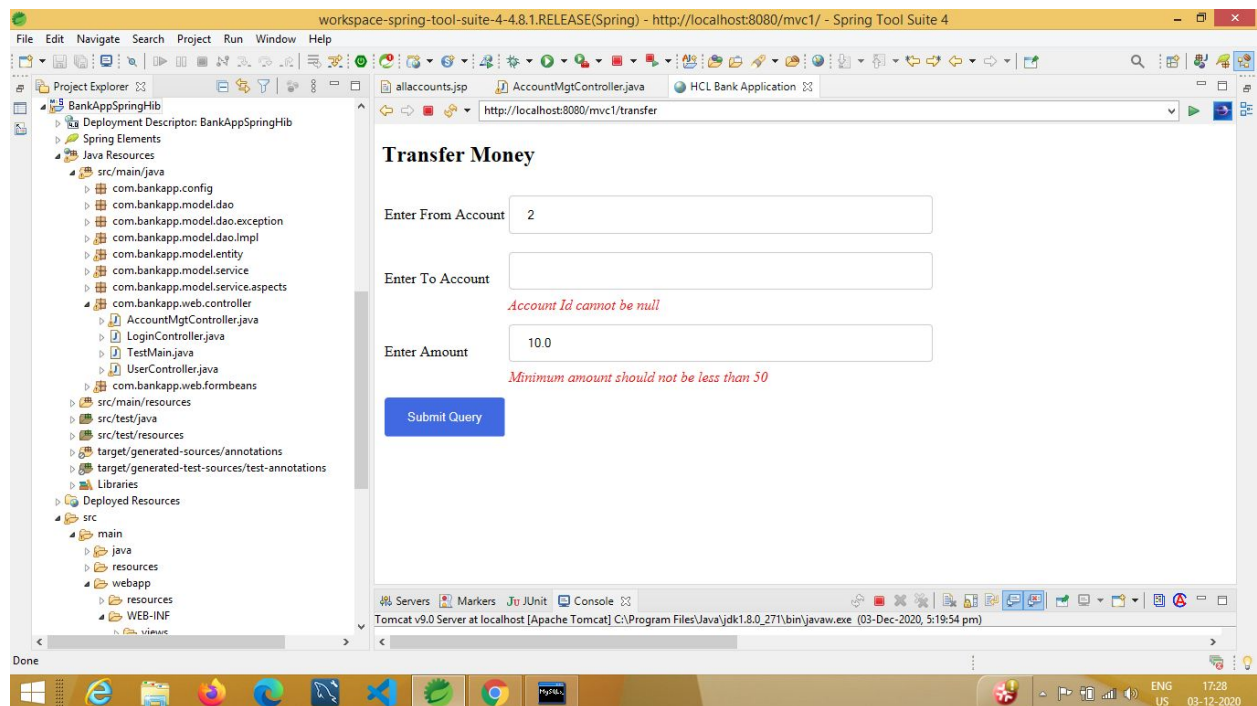
Servers: Tomcat v9.0 Server at localhost [Apache Tomcat] C:\Program Files\Java\jdk1.8.0_271\bin\javaw.exe (04-Dec-2020, 9:27:26 am)

```
transaction0_.txId as txId1_2_1_,
transaction0_.amount as amount2_2_1_,
transaction0_.timestamp as timestamp3_2_1_,
transaction0_.txInfo as txInfo4_2_1_,
transaction0_.txType as txType5_2_1_
from
  txLog_table transaction0_
where
  transaction0_.accountId_FK=?
```

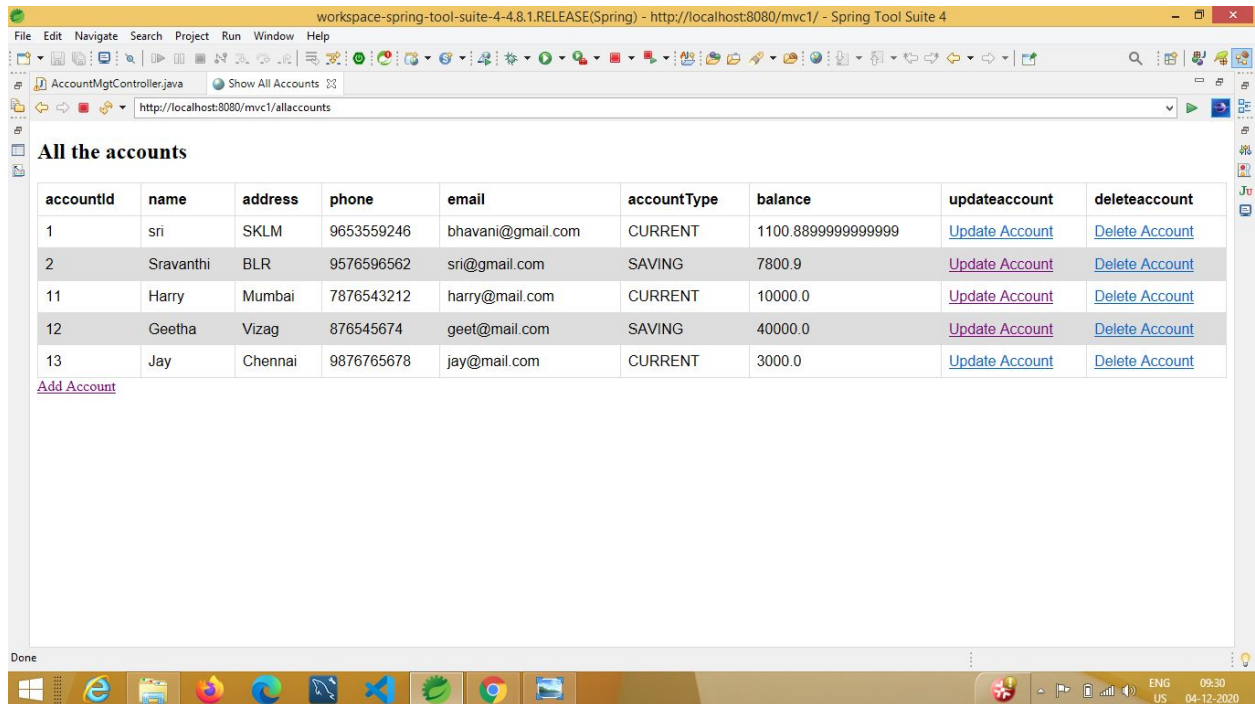
Manager Page:



Transfer Money:



After Transfer:

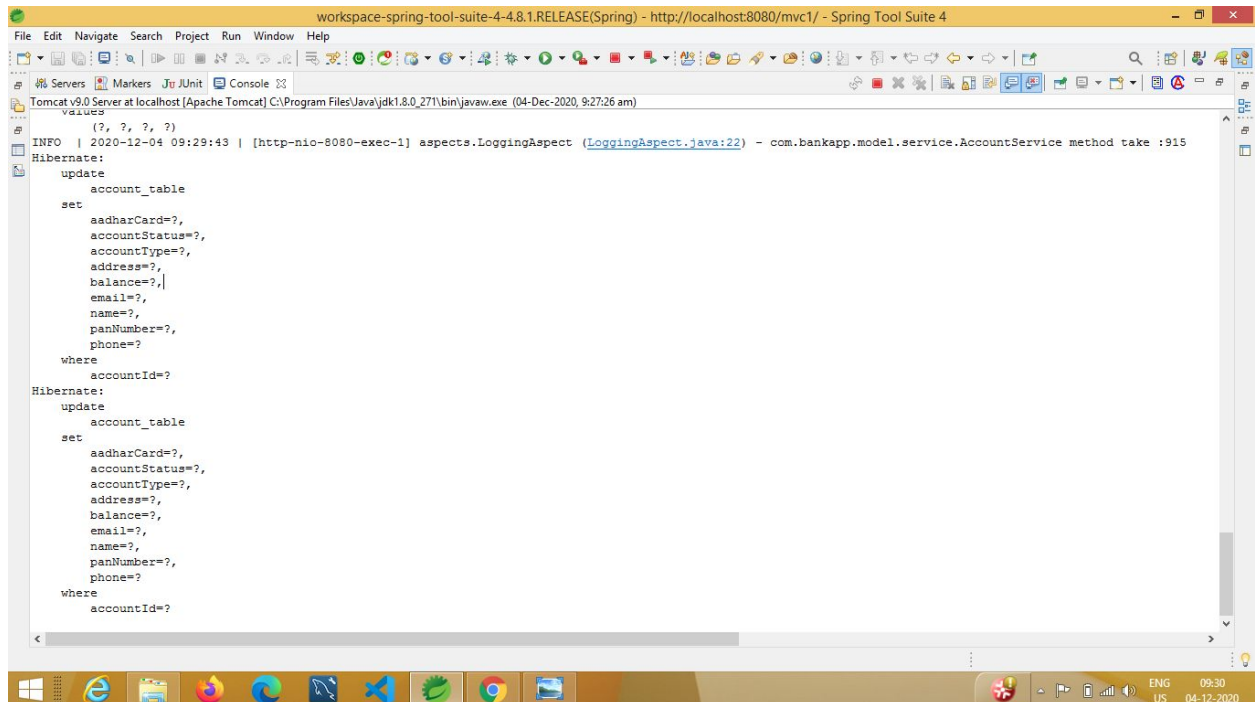


The screenshot shows the Spring Tool Suite 4 IDE with a web browser displaying the 'All the accounts' page. The page contains a table with the following data:

accountid	name	address	phone	email	accountType	balance	updateaccount	deleteaccount
1	sri	SKLM	9653559246	bhavani@gmail.com	CURRENT	1100 88999999999999	Update Account	Delete Account
2	Sravanthi	BLR	9576596562	sri@gmail.com	SAVING	7800.9	Update Account	Delete Account
11	Harry	Mumbai	7876543212	harry@mail.com	CURRENT	10000.0	Update Account	Delete Account
12	Geetha	Vizag	876545674	geet@mail.com	SAVING	40000.0	Update Account	Delete Account
13	Jay	Chennai	9876765678	jay@mail.com	CURRENT	3000.0	Update Account	Delete Account

Below the table is a link: [Add Account](#).

Log Message after Transfer:



The screenshot shows the Spring Tool Suite 4 IDE with the console window open. The log message is as follows:

```
INFO | 2020-12-04 09:29:43 | [http-nio-8080-exec-1] aspects.LoggingAspect (LoggingAspect.java:22) - com.bankapp.model.service.AccountService method take :915  
Hibernate:  
update  
account_table  
set  
aadharCard=?,  
accountStatus=?,  
accountType=?,  
address=?,  
balance=?,  
email=?,  
name=?,  
panNumber=?,  
phone=?  
where  
accountid=?  
Hibernate:  
update  
account_table  
set  
aadharCard=?,  
accountStatus=?,  
accountType=?,  
address=?,  
balance=?,  
email=?,  
name=?,  
panNumber=?,  
phone=?  
where  
accountid=?
```

Deposit Page:

workspace-spring-tool-suite-4-4.8.1.RELEASE(Spring) - http://localhost:8080/mvc1/ - Spring Tool Suite 4

Project Explorer: BankAppSpringHib, Deployment Descriptor: BankAppSpringHib, Spring Elements, Java Resources, src/main/java, com.bankapp.config, com.bankapp.model.dao, com.bankapp.model.dao.exception, com.bankapp.model.dao.impl, com.bankapp.model.entity, com.bankapp.model.service, com.bankapp.model.service.aspects, com.bankapp.web.controller, AccountMgtController.java, LoginController.java, TestMain.java, UserController.java, com.bankapp.web.formbeans, src/main/resources, src/test/java, src/test/resources, target/generated-sources/annotations, target/generated-test-sources/test-annotations, Libraries, Deployed Resources, src, main, java, resources, webapp, resources, WEB-INF.

allaccounts.jsp | AccountMgtController.java | HCL Bank Application

http://localhost:8080/mvc1/deposit

Deposit Money

Enter To Account: 2

Enter Amount: 1.0

Minimum amount should not be less than \$0

Submit Query

Servers: Tomcat v9.0 Server at localhost [Apache Tomcat] C:\Program Files\Java\jdk1.8.0_271\bin\javaw.exe (03-Dec-2020, 5:19:54 pm)

```
txLog_table
(amount, timestamp, txInfo, txType)
values
(?, ?, ?, ?)
INFO | 2020-12-03 17:28:29 | [http-nio-8080-exec-1] aspects.LoggingAspect (LoggingAspect.java:22) - com.bankapp.moc
Hibernate:
update
account_table
set
```

After Deposit:

workspace-spring-tool-suite-4-4.8.1.RELEASE(Spring) - http://localhost:8080/mvc1/ - Spring Tool Suite 4

Project Explorer: 08_HibernateBasics, apptogather.zip_expanded, BankApp, bankapp.zip_expanded, BankAppSpringHib, BankWebApplication, BookStore_Spring, BookStoreSpringServerV, code_spring_mock, HCLLabAssignment_Spring, hib_demo.zip_expanded, MockitoDemo, mvc1, Servers, Spring_Hibernate, spring_hib_int.zip_expanded, spring_MVC, SpringDemo, SpringHibWebBookStore, springmvcdemo, UpdatedWebBOOKAPP.

AccountMgtController.java | Show All Accounts

http://localhost:8080/mvc1/allaccounts

All the accounts

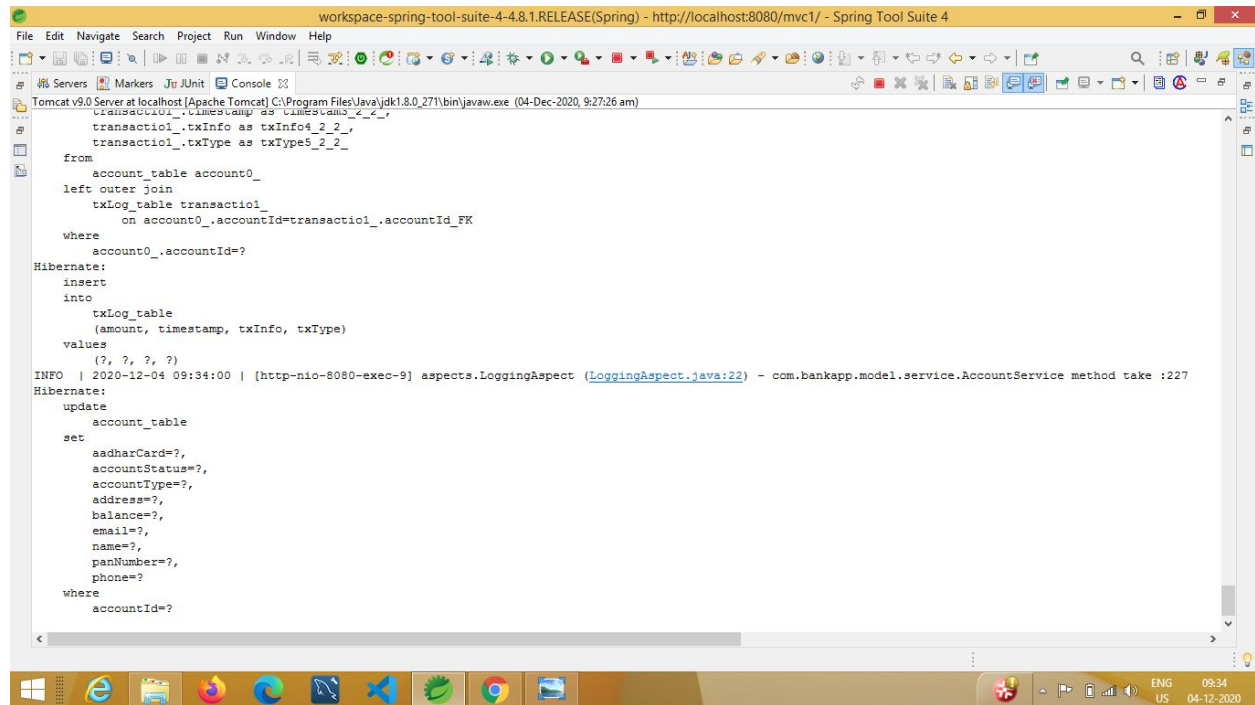
accountid	name	address	phone	email	accountType	balance	updateaccount	deleteaccount
1	sri	SKLM	9653559246	bhavani@gmail.com	CURRENT	5100.889999999999	Update Account	Delete Account
2	Sravanthi	BLR	9576596562	sri@gmail.com	SAVING	7300.9	Update Account	Delete Account
11	Harry	Mumbai	7876543212	harry@mail.com	CURRENT	10000.0	Update Account	Delete Account
12	Geetha	Vizag	876545674	geet@mail.com	SAVING	40000.0	Update Account	Delete Account
13	Jay	Chennai	9876765678	jay@mail.com	CURRENT	3000.0	Update Account	Delete Account

[Add Account](#)

Servers: Tomcat v9.0 Server at localhost [Apache Tomcat] C:\Program Files\Java\jdk1.8.0_271\bin\javaw.exe (04-Dec-2020, 9:27:26 am)

```
transaction0_txId as txId1_2_1_,
transaction0_amount as amount2_2_1_,
transaction0_timestamp as timestamp3_2_1_,
transaction0_txInfo as txInfo4_2_1_,
transaction0_txType as txType5_2_1_
from
txLog_table transaction0_
where
transaction0_.accountId_FK=?
```

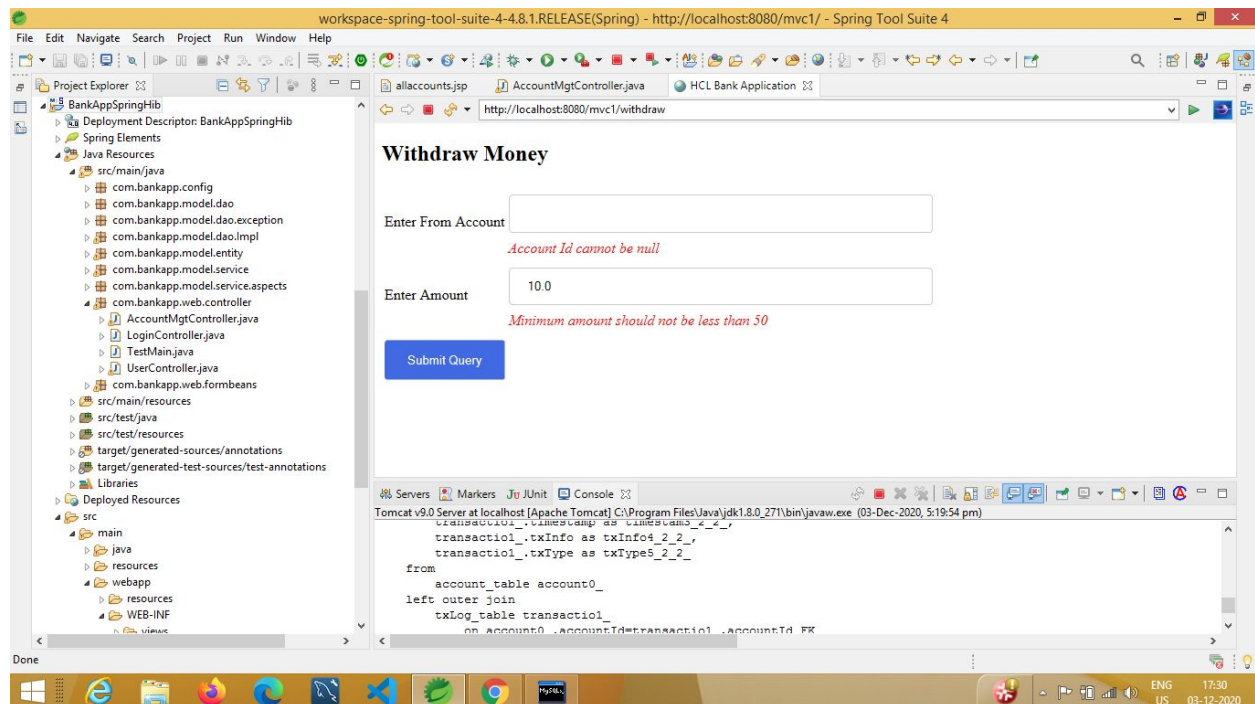
Log Message after Deposit:



The screenshot shows the Spring Tool Suite 4 IDE with the Tomcat v9.0 Server at localhost console open. The console displays a log message from the `com.bankapp.model.service.AccountService` class, specifically the `take` method. The log message is an INFO level message with the timestamp `2020-12-04 09:34:00` and the message `[http-nio-8080-exec-9] aspects.LoggingAspect (LoggingAspect.java:22) - com.bankapp.model.service.AccountService method take :227`. The log message is preceded by a Hibernate SQL statement that inserts a record into the `txLog_table` and updates the `account_table`.

```
Tomcat v9.0 Server at localhost [Apache Tomcat/C:\Program Files\Java\jdk1.8.0_271\bin\javaw.exe (04-Dec-2020, 9:27:26 am)]
transaction1_.timestamp as timestamp_2_2_,
transaction1_.txInfo as txInfo4_2_2_,
transaction1_.txType as txType5_2_2_
from
  account_table account0_
left outer join
  txLog_table transaction1_
  on account0_.accountId=transaction1_.accountId_FK
where
  account0_.accountId=?
Hibernate:
insert
into
  txLog_table
  (amount, timestamp, txInfo, txType)
values
  (?, ?, ?, ?)
INFO | 2020-12-04 09:34:00 | [http-nio-8080-exec-9] aspects.LoggingAspect (LoggingAspect.java:22) - com.bankapp.model.service.AccountService method take :227
Hibernate:
update
  account_table
set
  aadharCard=?,
  accountStatus=?,
  accountType=?,
  address=?,
  balance=?,
  email=?,
  name=?,
  panNumber=?,
  phone=?
where
  accountId=?
```

Withdraw Page:



The screenshot shows the Spring Tool Suite 4 IDE with the `allaccounts.jsp` file open. The page displays a "Withdraw Money" form with two input fields: "Enter From Account" and "Enter Amount". The "Enter From Account" field has a red error message below it: `Account Id cannot be null`. The "Enter Amount" field has a red error message below it: `Minimum amount should not be less than 50`. A blue "Submit Query" button is located below the input fields. The background of the page is a light blue gradient. The Spring Tool Suite 4 IDE interface is visible around the page, showing the Project Explorer on the left and the Console on the right.

allaccounts.jsp | AccountMgtController.java | HCL Bank Application

http://localhost:8080/mvc1/withdraw

Withdraw Money

Enter From Account

Account Id cannot be null

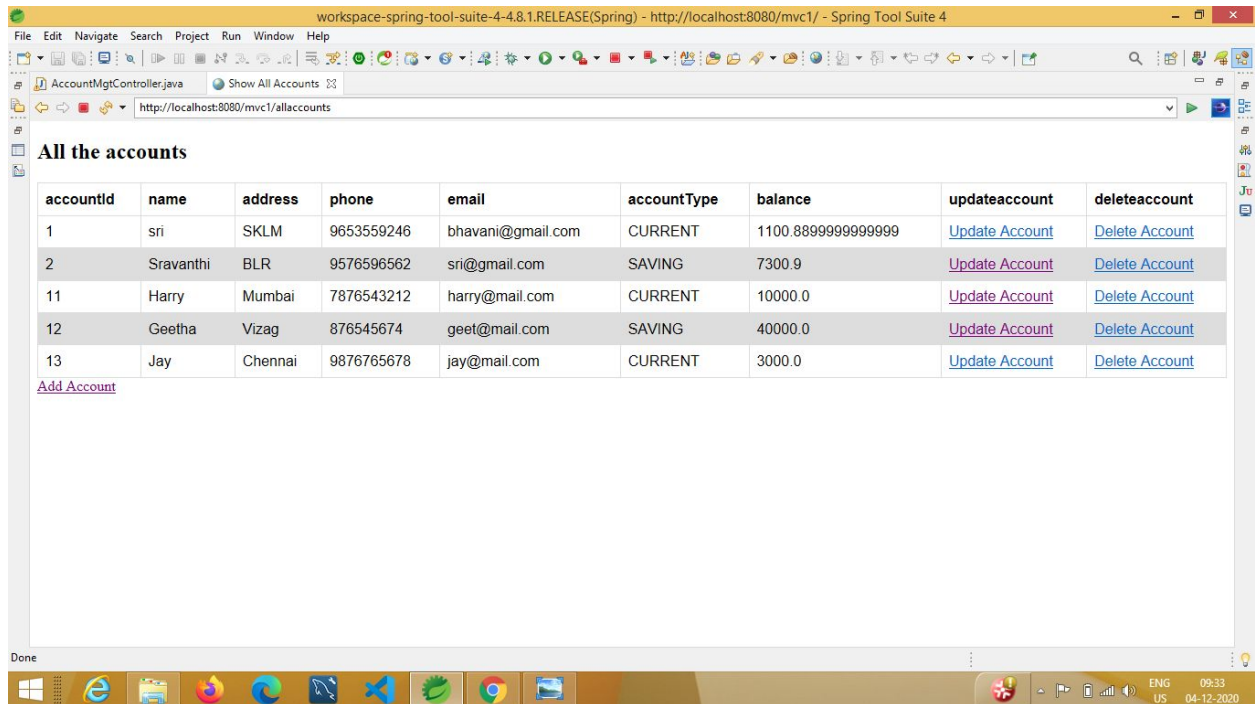
Enter Amount

Minimum amount should not be less than 50

Tomcat v9.0 Server at localhost [Apache Tomcat/C:\Program Files\Java\jdk1.8.0_271\bin\javaw.exe (03-Dec-2020, 5:19:54 pm)]

```
transaction1_.timestamp as timestamp_2_2_,
transaction1_.txInfo as txInfo4_2_2_,
transaction1_.txType as txType5_2_2_
from
  account_table account0_
left outer join
  txLog_table transaction1_
  on account0_.accountId=transaction1_.accountId_FK
```

After withdraw:

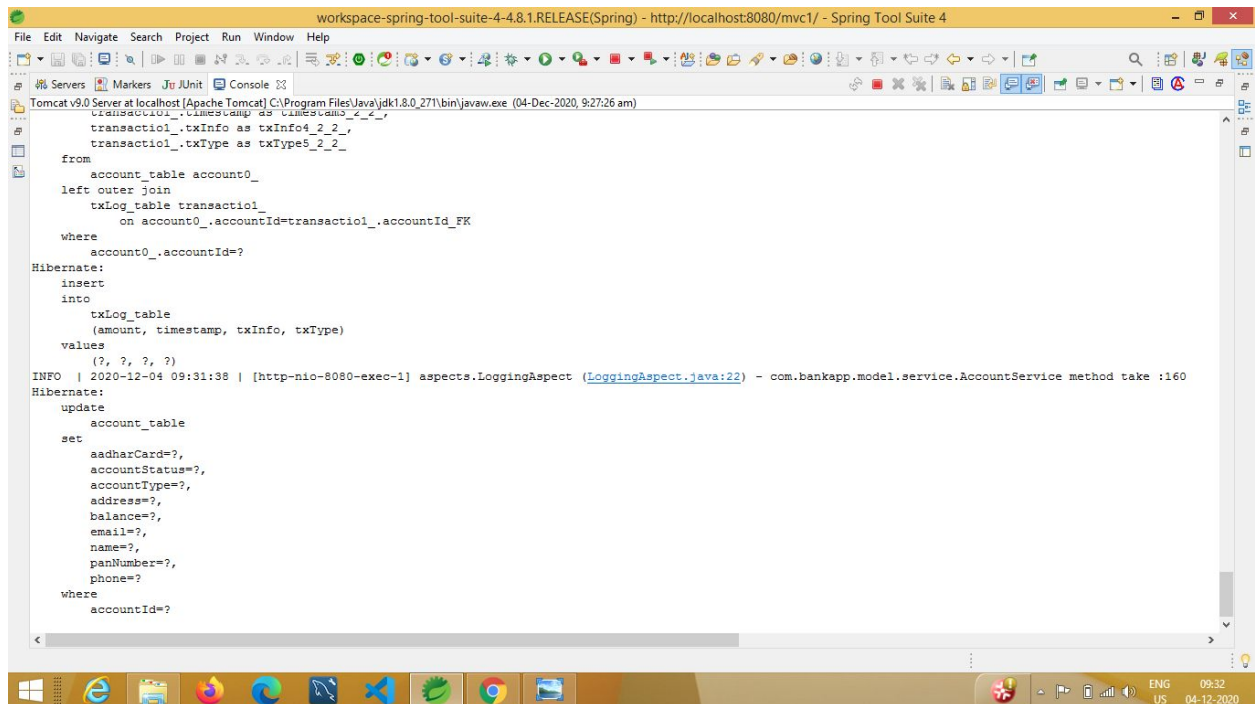


The screenshot shows the Spring Tool Suite 4 IDE with a web browser displaying the 'All the accounts' page. The page title is 'All the accounts'. Below the title is a table with 9 columns: accountid, name, address, phone, email, accountType, balance, updateaccount, and deleteaccount. The table contains 6 rows of account data. Below the table is a link labeled 'Add Account'.

accountid	name	address	phone	email	accountType	balance	updateaccount	deleteaccount
1	sri	SKLM	9653559246	bhavani@gmail.com	CURRENT	1100 8899999999999	Update Account	Delete Account
2	Sravanthi	BLR	9576596562	sri@gmail.com	SAVING	7300.9	Update Account	Delete Account
11	Harry	Mumbai	7876543212	harry@mail.com	CURRENT	10000.0	Update Account	Delete Account
12	Geetha	Vizag	876545674	geet@mail.com	SAVING	40000.0	Update Account	Delete Account
13	Jay	Chennai	9876765678	jay@mail.com	CURRENT	3000.0	Update Account	Delete Account

[Add Account](#)

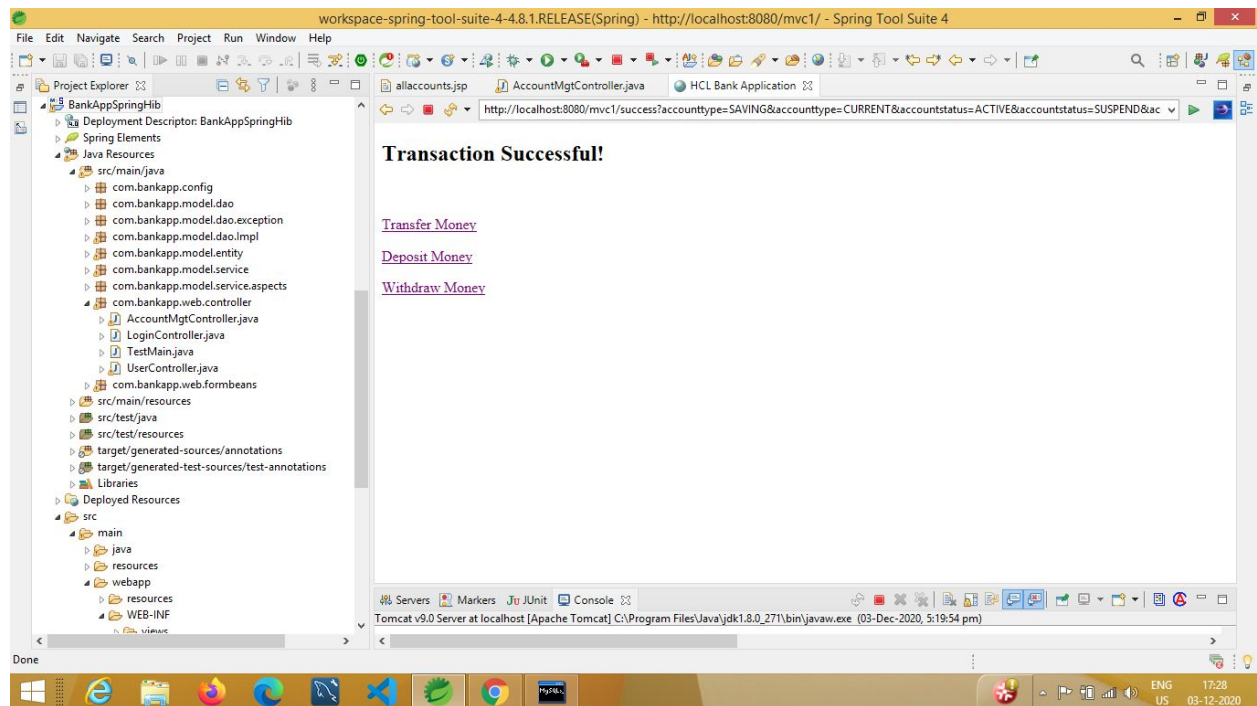
Log Message after Withdraw:



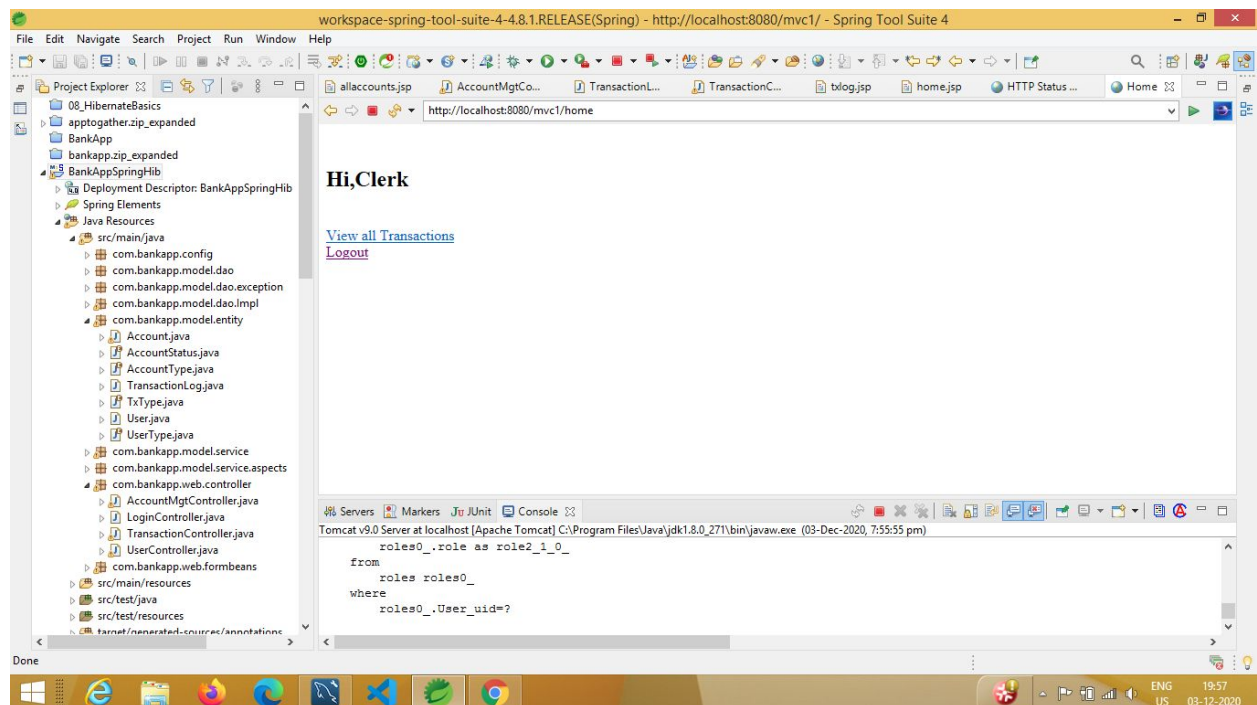
The screenshot shows the Spring Tool Suite 4 IDE with the console window open. The console displays a log message from the Tomcat v9.0 Server at localhost [Apache Tomcat/C:\Program Files\Java\jdk1.8.0_271\bin\javaw.exe (04-Dec-2020, 9:27:26 am)]. The log message is a Hibernate SQL statement for inserting a transaction log entry. The statement is as follows:

```
transaction1.txInfo as txInfo4_2_2_,
transaction1.txType as txType5_2_2_
from
account_table account0_
left outer join
txLog_table transaction1_
on account0_.accountId=transaction1_.accountId_FK
where
account0_.accountId=?
Hibernate:
insert
into
txLog_table
(amount, timestamp, txInfo, txType)
values
(?, ?, ?, ?)
INFO | 2020-12-04 09:31:38 | [http-nio-8080-exec-1] aspects.LoggingAspect (LoggingAspect.java:22) - com.bankapp.model.service.AccountService method take :160
Hibernate:
update
account_table
set
aadharCard=?,
accountStatus=?,
accountType=?,
address=?,
balance=?,
email=?,
name=?,
panNumber=?,
phone=?
where
accountId=?
```


Success Page:



Clerk Page:



Transactions:

workspace-spring-tool-suite-4-4.8.1.RELEASE(Spring) - http://localhost:8080/mvc1/ - Spring Tool Suite 4

File Edit Navigate Search Project Run Window Help

allaccounts.jsp AccountMgtController.java TransactionLog.java TransactionController.java txlog.jsp home.jsp HTTP Status 500 - Internal Server Error Transactions

http://localhost:8080/mvc1/txlog

All the transactions

txid	txInfo	timestamp	amount	txType
1	Withdraw amount	2020-12-02 22:12:34.655	50.0	WITHDRAW
2	Transfer amount	2020-12-02 22:12:35.168	50.0	TRANSFER
3	Withdraw amount	2020-12-03 17:10:53.687	500.0	WITHDRAW
4	Deposite amount	2020-12-03 17:10:54.401	500.0	DEPOSITE
5	Transfer amount	2020-12-03 17:10:54.42	500.0	TRANSFER
6	Deposite amount	2020-12-03 17:11:20.253	100.0	DEPOSITE
7	Withdraw amount	2020-12-03 17:28:28.879	100.0	WITHDRAW
8	Deposite amount	2020-12-03 17:28:29.13	100.0	DEPOSITE
9	Transfer amount	2020-12-03 17:28:29.336	100.0	TRANSFER
10	Deposite amount	2020-12-03 17:29:48.917	1000.0	DEPOSITE
11	Withdraw amount	2020-12-03 17:30:58.474	300.0	WITHDRAW
12	Transfer Money	2020-12-03 19:22:14.405	500.01	TRANSFER
13	Deposite Money	2020-12-03 19:22:16.011	100.5	DEPOSITE
14	Withdraw Money	2020-12-03 19:22:16.715	2000.6	WITHDRAW
15	Transfer Money	2020-12-03 19:22:16.949	50.9	TRANSFER
16	Deposite Money	2020-12-03 19:22:17.315	150.6	DEPOSITE

[Logout](#)

Done

19:57 03-12-2020