Creating the ATM DBMS:

In this example, I had created a database using MySQL. I started by using the Create Database statement to create a database named "bank". I then created the database tables for bank........which incorporated the use of database table constraints (such as the addition of a primary key on the CustomerID column for the Customers table - I created a Foreign key on CustomerID for the accounts table in order to link the tables via the constraints)

```
mysql> CREATE DATABASE bank

mysql> USE bank

mysql> SHOW TABLES;

Creating MySQL Users:

Enabling and Viewing Log Files:

Bank Tables:

CREATE TABLE customers (CustomerID VARCHAR(7), FirstName VARCHAR(12), MiddleInitial CHAR(1), LastName
VARCHAR(12), BirthDay DATE, PhoneNumber VARCHAR(13), AddressOne VARCHAR(20), AddressTwo VARCHAR(20),
City VARCHAR(10), STATE VARCHAR(2), ZIP INT(5),CONSTRAINT CustomerPK PRIMARY KEY(CustomerID));

INSERT INTO customer
VALUES
(00150, 'Scott', 'C', 'Richardson', '1977-04-10', '555-555-5551', '222 Willowpond
Ln', null, 'Austin', 'TX', 78613);
VALUES
(00151, 'Nancy', 'B', 'Griffin', '1980-03-04', '555-555-5552', '451 Yellow Ct.',
null, 'Boston', 'MA', 02201);
VALUES
(00152, 'William', 'R', 'Robertson', '1977-04-10', '555-555-5553', '721 RollinghillsRd',
null, 'Owensboro', 'KY', 72301);

CREATE TABLE accounts (AccountNumber INT(12), AccountTYpe VARCHAR(12),
AccountBalance DOUBLE(10,2), AccountPercent INT(3), AccountOpening DATE),
CONSTRAINT accountPK PRIMARY KEY(AccountNumber),
CONSTRAINT customerFK FOREIGN KEY(CustomerID));

AccountNum INT(12), CustomerID VARHAR(12)

INSERT INTO accounts
VALUES
(123451, 'checking', 1400.00, 12, '2014-03-30');
INSERT INTO accounts
VALUES
(123452, 'checking', 800.00, 14, '2014-04-12');
INSERT INTO accounts
VALUES
(123453, 'checking', 5000.00, 12, '2014-04-22');

CREATE TABLE transact (TransactNumber INT(12) PRIMARY KEY, ToAccntNum INT(12), FromAccntNum INT(12),
TransactAmt DOUBLE(7,2), TransactDate DATE, Transact TIME, TransactType VARCHAR(10));

INSERT INTO transact
VALUES
(9999123, 000000123, 000000321, 253.00, '2014-04-20', '13:01:00', 'transfer')
VALUES
(9999124, null, 000000124, 20.00, '2014-05-10', '08:30:00', 'withdrawal')
VALUES
(9999125, 000000125, 000000521, 500.00, '2014-05-10', '07:20:00', 'transfer')

CREATE TABLE employee (EmpsID INT(12) PRIMARY KEY, EmpFirst VARCHAR(12), EmpMid
CHAR(1), EmpLast VARCHAR(12), EmpBirth DATE, EmpPhone VARCHAR(13), EmpAddOne
VARCHAR(20), EmpAddTwo VARCHAR(20), EmpCity VARCHAR(10), EmpSTATE VARCHAR(2), EmpZIP
INT(5), StartDate DATE, BaseSalary DOUBLE(7,2), HourlyWage DOUBLE(4,2));
```

```
INSERT INTO employee
VALUES
(01234, 'Sarah', 'M', 'Harrington', '1963-03-31', '555-555-5555', '222 Willow Lane',
 null, 'Roanoke', 'VA', 24016, '2014-02-25', 40000.00, 20.80);
VALUES
(01235, 'David', 'T', 'Barton', '1985-04-10', '555-555-5556', '4415 Gardens Rd',
null,'Austin', 'TX', 78641, '2014-04-15', 30000.00, 15.60);
VALUES
(01236, 'Taylor', 'J', 'Adams', '1959-10-31', '555-555-5558', '1264 Coffey Ln',
null,'Huntington', 'WV', 25705, '2014-05-12', 50000.00, 26.00);

CREATE TABLE emphours (EmpID INT(12) PRIMARY KEY, PunchIn TIMESTAMP, PunchOut TIMESTAMP, WrkDate
DATE))

INSERT INTO emphours
VALUES
(01234, '2014-06-12 09:24:00', '2014-06-12 17:30:00', '2014-06-12');
(01235, '2014-06-12 11:30:00', '2014-06-12 20:00', '2014-06-12');
(01236, '2014-06-12 16:30', '2014-06-12 21:30:00', '2014-06-12');


To view entries after entries have been populated:
SELECT * FROM customer;
SELECT * FROM accounts;
SELECT * FROM transact;
SELECT * FROM employee;
SELECT * FROM emphours;
```

After creating the database, I then created a database connection within MySQL Workbench. I used PHP,SQL, and HTML to enable web access for the database connection.

```
<html>
<body>
<?php
$conn = odbc_Connect('SampleODBC', 'admin', 'password');if (!$conn) {exit ("Connection failed.".
$conn);},

$sql = "SELECT * FROM customers"
$rs = odbc_exec ($conn, $sql);
echo "<table><tr>";
echo "<th>Customerid</th>";
echo "<th>Firstname</th>";
echo "<th>Middleinitial</th>";
echo "<th>Lastname</th>";
echo "<th>Birthday</th>";
echo "<th>Phonenumber</th>";
echo "<th>Addressone</th>";
echo "<th>Addresstwo</th>";
echo "<th>Citytown</th>";
echo "<th>Stateprovince</th>";
echo "<th>Zipcode</th></tr>";
WHILE (odbc_fetch_row($rs)) {
$custid = odbc_result($rs, "CustomerID");
$fstname = odbc_result($rs, "FirstName");
$mdinit = odbc_result($rs, "MidInit");
$lstname = odbc_result($rs, "LastName");
$bthdate = odbc_result($rs, "BirthDate");
$phnno = odbc_result($rs, "PhoneNum");
$adda = odbc_result($rs, "AddOne");
$addb = odbc_result($rs, "AddTwo");
$cityt = odbc_result($rs, "CustCity");
$statep = odbc_result($rs, "CustState");
$zipc = odbc_result($rs, "ZipCode");
 echo "<tr><td>$custid</td>";
echo "<tr><td>$fstname</td>";
echo "<tr><td>$mdinit</td>";
echo "<tr><td>$lstname</td>";
echo "<tr><td>$bthdate</td>";
echo "<tr><td>$phnno</td>";
echo "<tr><td>$adda</td>";
echo "<tr><td>$addb</td>";
echo "<tr><td>$cityt</td>";
echo "<tr><td>$statep</td>";
echo "<tr><td>$zipc</td>";}    #end While
```

```php
echo "</table>";

<p>
<b>Select customer:</b>
</p>
<select name="Customer">
<option value="scottRichardson">Scott Richardson</option>
<option value="nancyGriffin">Nancy Griffin</option>
<option value="WilliamRobertson">William Robertson</option>
</select>
if($_POST=='scottRichardson')
{
$scottRichardson = mysql_query("SELECT * FROM accounts WHERE customers.FirstName='Scott'");
echo "<opton value=".$scottRichardson.">".$scottRichardson."</option>";
}
if($_POST=='nancyGriffin')
{
$nancyGriffin = mysql_query("SELECT * FROM accounts WHERE
customers.FirstName='Nancy'");
echo "<opton value=".$nancyGriffin.">".$nancyGriffin."</option>";
}
if($_POST=='williamRobertson')
{
$williamRobertson = mysql_query("SELECT * FROM accounts WHERE
customers.FirstName='William'");
echo "<opton value=".$williamRobertson.">".$williamRobertson."</option>";
}

odbc_close
($conn);

?>
</body>
</html>
```
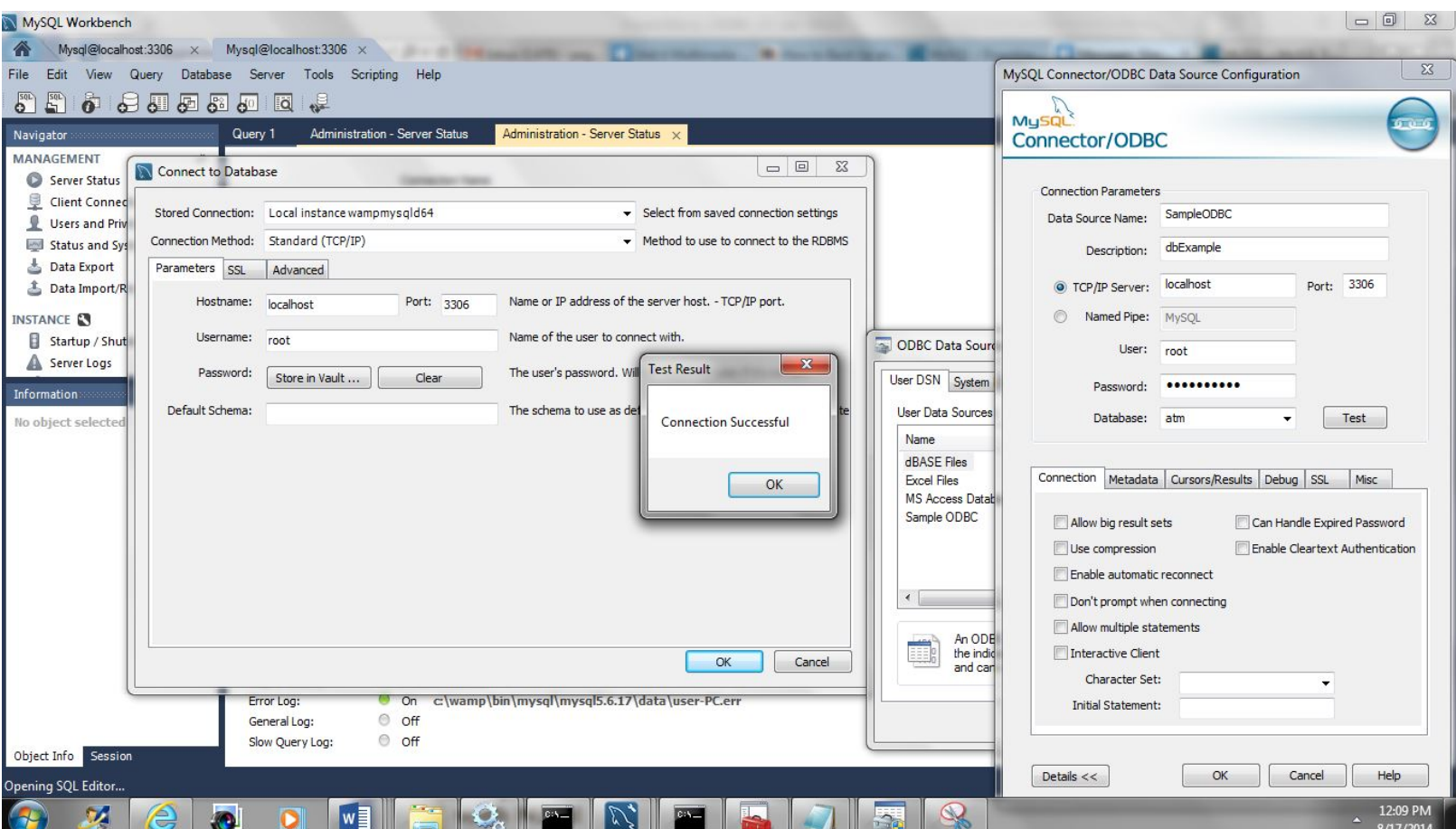
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