

Steps to deploy the backend:

1 INSTALL JAVA

Step 1, In instance's terminal, execute the following commands:

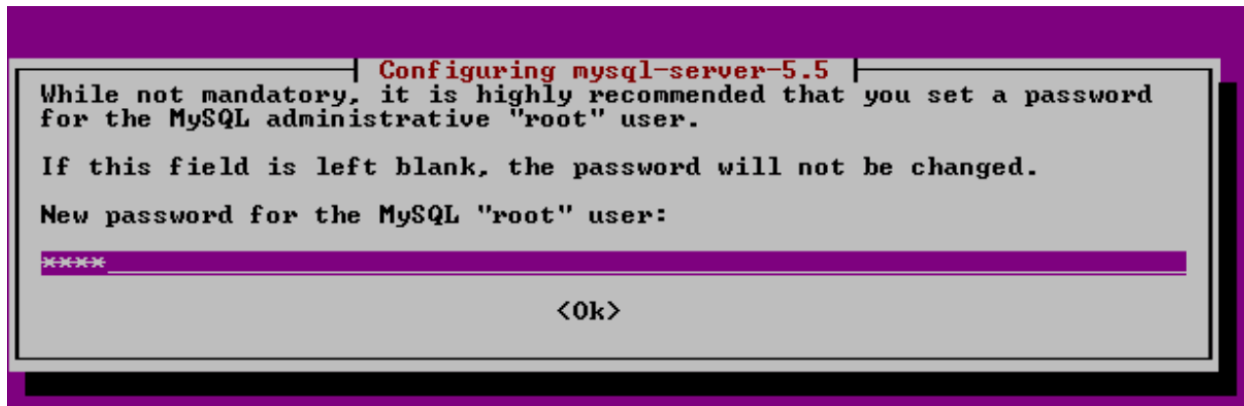
```
sudo add-apt-repository ppa:webupd8team/java
sudo apt-get update
sudo apt-get install oracle-java8-installer
```

Step 2, verify with
`java -version`

2 INSTALL MYSQL

Step 1, execute the following command, When you are asked for new mysql password, use "root".

```
sudo apt-get install mysql-server
```



Step 2, after installation, type `mysql -u root -p` in your terminal, then input the "root" as password.

Step 3, In the mysql shell, paste the following SQL statements to install the tables:

```
DROP DATABASE IF EXISTS 2Table;
CREATE DATABASE 2Table;
USE 2Table;
DROP TABLE IF EXISTS Capacity;
DROP TABLE IF EXISTS Reservations;
DROP TABLE IF EXISTS Restaurant;
DROP TABLE IF EXISTS User;
CREATE TABLE Restaurant (Restaurant_idRestaurant VARCHAR(255) NOT
NULL, Rname VARCHAR(255) NOT NULL, Rloc VARCHAR(255) NOT NULL, Rphone
VARCHAR(45), Remail VARCHAR(255), capacity INT NOT NULL, pwd
VARCHAR(255) NOT NULL, url VARCHAR(255) NOT NULL, PRIMARY KEY
( Restaurant_idRestaurant));
CREATE TABLE User (User_idUser VARCHAR(255) NOT NULL , " + "Uname
VARCHAR(255) NOT NULL, Uphone VARCHAR(225), Uemail VARCHAR(225), pwd
VARCHAR(255) NOT NULL,url VARCHAR(255) NOT NULL, PRIMARY KEY
(User_idUser));
```

```

ERROR 1064 (42000): You have an error in your SQL syntax; check the
manual that corresponds to your MySQL server version for the right
syntax to use near "'" + "Uname VARCHAR(255) NOT NULL, Uphone
VARCHAR(225), Uemail VARCHAR(225), pw' at line 1
mysql> CREATE TABLE User (User_idUser VARCHAR(255) NOT NULL ,Uname
VARCHAR(255) NOT NULL, Uphone VARCHAR(225), Uemail VARCHAR(225), pwd
VARCHAR(255) NOT NULL,url VARCHAR(255) NOT NULL, PRIMARY KEY
(User_idUser));
CREATE TABLE Reservations (idReservation VARCHAR(255) NOT NULL,
User_idUser VARCHAR(255), Restaurant_idRestaurant VARCHAR(255), psize
INT(11), pdatetime DATETIME, PRIMARY KEY ( idReservation ), FOREIGN
KEY (User_idUser) REFERENCES User(User_idUser), FOREIGN KEY
(Restaurant_idRestaurant) REFERENCES
Restaurant(Restaurant_idRestaurant));
INSERT INTO User VALUES ("1111", "Joe", "3478653212", "fa@cooper.edu",
"12345", "https://i.loli.net/2019/04/25/5cc1189daf60d.png");INSERT
INTO User VALUES ( "1112", "Mary", "3479023333", "mary@cooper.edu",
"12345", "https://i.loli.net/2019/04/25/5cc118d5cea03.png");
INSERT INTO Restaurant VALUES ( "2222", "Amelie Pizza", "103 West 8th
Street", "3478763298", "Amelie@gmail.com", "25", "12345", "https://
i.loli.net/2019/04/25/5cc1159b45c69.png");
INSERT INTO Restaurant VALUES ("2223", "Mcdonalds", "102 1st Avenu",
"3472763322", "mc@gmail.com", "15", "12345", "https://i.loli.net/
2019/04/25/5cc113d4f06ee.png");
INSERT INTO Restaurant VALUES ("2444", "Sunburst Espresso Bar", "206
3rd Avenue", "2126741702", "bar@gmail.com", "20", "12345", "https://
i.loli.net/2019/04/25/5cc115efbd279.png");
INSERT INTO Restaurant VALUES ("999", "Lucky Lee's", "67 University
Pl", "6467797123", "lee@gmail.com", "30", "12345", "https://
i.loli.net/2019/04/25/5cc116549d4c8.png");
INSERT INTO Reservations VALUES ("3333", "1111", "2222", "3",
"2019-03-26 19:00:00");
INSERT INTO Reservations VALUES ("3334", "1112", "2222", "5",
"2015-03-27 18:00:00");
INSERT INTO Reservations VALUES ("3335", "1111", "2223", "10",
"2015-03-29 19:00:00");

```

Step 4, Type "exit" to quit mysql shell.

Install Tomcat 9

Step 1, Execute the following commands

```
cd /opt/
```

```
sudo wget http://mirrors.ocf.berkeley.edu/apache/tomcat/tomcat-9/v9.0.4/bin/apache-
tomcat-9.0.4.tar.gz
```

```
sudo tar xzf apache-tomcat-9.0.4.tar.gz
```

```
sudo ln -s apache-tomcat-9.0.4 tomcat
```

```
echo "export CATALINA_HOME=\"/opt/tomcat\"" >> ~/.bashrc
```

```
source ~/.bashrc
```

```
cd /opt/tomcat
```

```
sudo bin/startup.sh
```

Step 2, Verify with http://YOUR_INSTANCE_IP:8080/

Run 2Table on EC2

WAR file (or Web application ARchive) is a JAR file used to distribute a collection of JavaServer Pages, Java Servlets, Java classes, XML files, tag libraries, static web pages (HTML and related files) and other resources that together constitute a web application.

Step 1, Open Eclipse and MAMP, verify your website works correctly on local environment:

<http://localhost:8080/2Table/>

Step 2, open your MySQLDBUtil.java, make sure that port is 3306, and username and password are root.

Step 3, In Eclipse, select File -> Export -> Web->war File, save the war file to disk.

Step 4, Copy the war file to your instance.

MAC:

Open a new terminal window and type:

```
scp -i ~/Downloads/mykey.pem ~/Desktop/2Table.war ubuntu@YOUR_INSTANCE_IP:~/
```

Windows:

use WinSCP, <https://winscp.net/download/WinSCP-5.9.4-Setup.exe>

Click Advanced->SSH->Authentication->Private key file: choose your ppk.

Drag the 2Table.war from left to right (into /home/ubuntu/).

Step 5, Both Mac and Windows, back to your terminal/putty, type the following command

```
sudo cp ~/2Table.war /opt/tomcat/webapps/
```

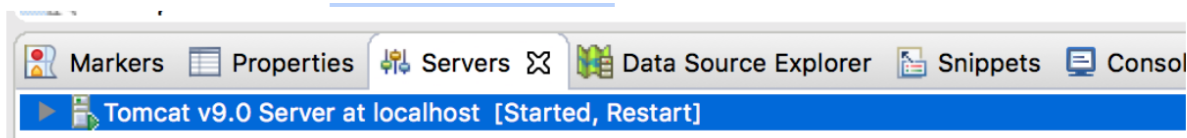
Step 6, Wait for a few seconds, then you can verify the server on your browser:

http://YOUR_INSTANCE_IP:8080/2Table/

Steps to Run the Java servlet backend in Local

1 START SERVER

Open with Eclipse and Start Tomcat server:



2 CREATE OUR DATABASE BY USING MAMP

MAMP stands for Macintosh, Apache, MySQL, and PHP. MAMP is an integrated platform you can install on your machine which allows you to have access to a local MySQL server and its PHP server.

More questions about MAMP (<https://www.mamp.info/en/documentation/>)

Step 1.1, Install MAMP: <http://www.mamp.info/en/downloads/>

Step 1.2, Open MAMP:

In our class, MAMP is enough, DON'T use MAMP PRO (Just ignore it, it doesn't hurt to use pro version but it will expire).

Click Preferences -> Ports. Make sure Apache Port is 8081 and MySQL port is 3306. Don't worry about the Nginx port.

Navigate to PHP tab, change PHP version to 7.0.x

Click OK and then click Start Servers.

Step 1.3, If everything goes well, both Apache Server and MySQL Server will be started. Then click Open Web Start Page button, a start web page [link] will be opened where you can interact with MySQL in a web UI instead of terminal. When it opens, choose Tools->phpMyAdmin. NOT phpLiteAdmin.

Step 1.4, under phpMyAdmin, you should be able to see a list of databases. Let's create a new database called 2Table. And use utf8_general_ci as the collation.

Click the newly created database and 'Structure' will show that it has no tables.

3 RUN MYSQLTABLECREATION.JAVA

