

# DATABASE-DRIVEN WEB APPLICATION INTRODUCTION

## 1. The Handout is available:

<http://www2.cs.arizona.edu/classes/cs460/spring17/prog04.pdf>

## ● Some Highlights:

### 1) There are three due dates for this assignment:

Team Members: April 19<sup>th</sup>, 2017, at the beginning of class. (URL: <https://goo.gl/ElciRI>)

E-R Diagram: April 24<sup>th</sup>, 2017, at the beginning of class

Final Product: May 1<sup>st</sup>, 2017, at the beginning of class

### 2) Application Domain. (In the Spec., check the models in the next page)

### 3) Required Functionalities:

- Record insertion/deletion/update;

- Record query: Your application should support querying your database via the web interface for the problem description given above. You are required to implement **at least five** different queries, each of your own design, but with the following restrictions: **At least one** must be constructed using at least one piece of information gathered from the user. **At least one** must involve at least two relations. And, there should **NO** trivial queries (for example, simply selecting everything from a table); your queries should be constructed to answer questions that real users would be expected to ask.

### 4) Team Size: 1– 4 people per group.

### 5) Late Days: Late days can be used on this assignment, but only on the third due date.

$$\text{Late Days} = \left\lfloor \frac{\text{Total Remaining Late Days}}{\# \text{ of members}} \right\rfloor$$

### 6) For details, please check the handout.

Example: You need to have the login window in the very beginning.

## Welcome to the Fake Dental Office

Username

Please Enter Username

Password

Please Enter Password

Login

Example: After that, you need different options upon logging in.  
You will need to implement the functions.

Today is: 4/12/2017 3:08:55

Good Night, **Yaswen!** Please select the option that you want to do: ( Log out )

Checkout

Appointments

Supplies

Find Patient

New Appointment






About us

New Patient

Laboratories

More...

### Example: One Possible Checkout Window

1		RIB STEAK	\$ 13.21
5		NABISCO HONEY MAID GRAHA	\$ 22.45
1		QUAKER INST OATMEAL REG	\$ 4.45
3		GLADE COUNTRY GARDN AERO	\$ 6.15
1		QUAKER CORNMEAL YELENRCH	\$ 2.75
Checkout 5 Items			Subtotal \$49.01 >

### 2. Where to Find the Resource to Start:

- /home/cs460/spring17/2017p4/

```
yawenchen@lectura:/home/cs460/spring17/2017p4$ ls
HowTo.txt  tomcat
yawenchen@lectura:/home/cs460/spring17/2017p4$
```

### 3. How to Run the Demo:

First of all, you have two choices to see the websites in the web browser when you don't have the access to use the lecture.cs.arizona.edu:

- Port Forwarding
- Remote Access
  - URL: <http://faq.cs.arizona.edu/index.php?action=artikel&cat=4&id=15&artlang=en&highlight=remote+access>
  - You can learn it by yourself.
- We will introduce the port forwarding here to run the demo.

### 3. How to Run the Demo:

In addition, read the HowTo.txt carefully.

- Some Highlights in HowTo.txt:
  - ❑ Copy the tomcat, HowTo.txt from /home/cs460/spring17/2017p4/ to your directory;
  - ❑ Edit the server.xml file in your conf subdirectory to set the port numbers for your tomcat server:
    - Port numbers have to be chosen carefully. If a port is in use by another process then the server will not be able to start. I suggest using the adding the last 4 digits of your CSID to 10000 and 20000 respectively to obtain your port numbers <last four digits of CSID> + 10000 for the last 'port=' setting and <last four digits of CSID> + 20000
  - ❑ Before you try to start/shutdown your tomcat, you should make sure the following environment variables are set:
    - export JAVA\_HOME=/usr/local/jdk
    - export CATALINA\_HOME=/home/username/tomcat/

❑ Compile the wrapper

- `cd $TOMCAT_HOME/webapps/ROOT/WEB-INF/classes/dbController`
- `/usr/local/jdk/bin/javac DatabaseController.java`
- IMPORTANT: Since we use the Java 1.7, so please really make sure that you exactly use the command above to compile your java program.

❑ Now, we can use the port forwarding application, and I use the “vSSH Lite” as the example. You can still find the information about the port forwarding application for Windows in the following link:

<https://goo.gl/k0OKvX>

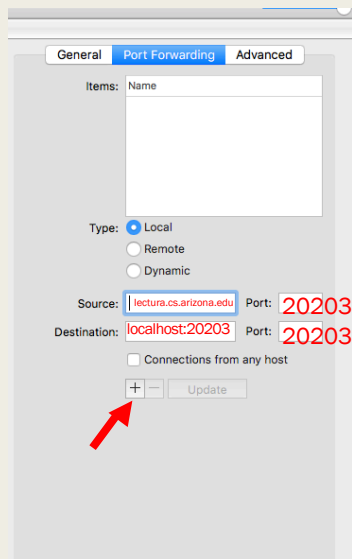
❑ Now you can start the Tomcat server.

- `$TOMCAT_HOME/bin/startup.sh`
- That should print out something like:

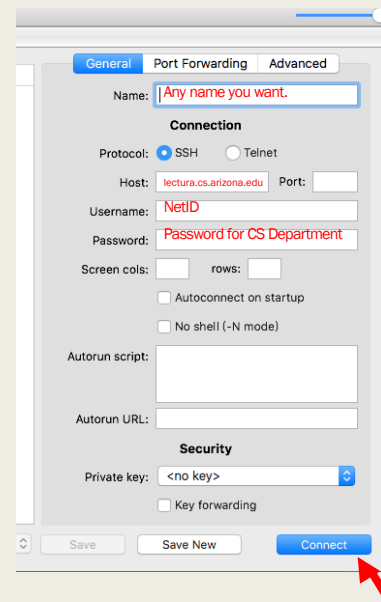
```
Using CATALINA_BASE: /home/username/tomcat
Using CATALINA_HOME: /home/username/tomcat
Using CATALINA_TMPDIR: /home/username/tomcat/temp
Using JRE_HOME: /usr/local/jdk
```

❑ Port Forwarding Application (Mac OS, vSSH Lite, I use “20203” as port number):

1.



2.



- ❑ Visit the demo application via web at:
  - Localhost:20203
- ❑ Shutdown the Tomcat server. In order to free up server resources, please remember that after testing, debugging and running your applications, you need to shutdown the Tomcat server
  - \$TOMCAT\_HOME/bin/shutdown.sh

```
Using CATALINA_BASE:  /home/username/tomcat
Using CATALINA_HOME:  /home/username/tomcat
Using CATALINA_TMPDIR: /home/username/tomcat/temp
Using JRE_HOME:       /usr/local/jdk
```

## 4. Now, Let's See the Demo:

## 5. Questions?