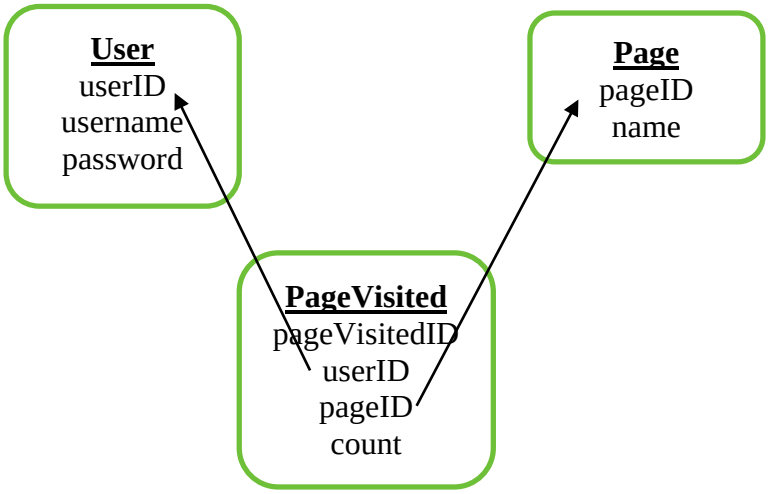
**Lab #11**
**CSCI 201**

Title
Number of Page Accesses

Lecture Topics Emphasized
HTML
Java Servlets
JSP
Databases
SQL
JDBC

Introduction
Accessing a database from back-end web code is a very common characteristic of dynamic web sites. Most of the data stored in the hidden web ultimately resides in databases on the servers hosted by web site organizations. In this lab, you will get experience writing back-end web code to access a database and return the results to the front-end.

Description
For this lab, you will create a few pages on a web site that access a database for data insertion and retrieval. The application for this lab will be to display how many times a user has visited each page of the site. Before we can utilize the database, we need to create it though. Create a database in MySQL with the following schema.




We need to populate this database now. You will have three users – Barack, GeorgeW, and Donald. Create whatever passwords you want for them. You will also have the following pages – `login.jsp`, `authenticate.jsp`, `cat.jsp`, `dog.jsp`, and `fish.jsp`. The `PageVisited` table will be populated as the users log into the site and visit different pages.

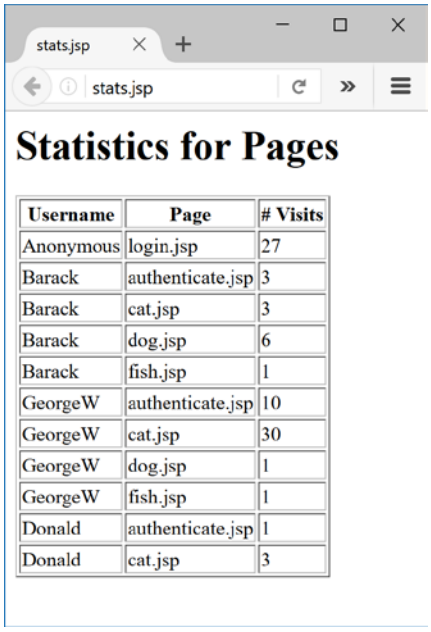
Create a web site that has five pages on it. All of the pages should be either JSPs or servlets so they are able to validate that the user has logged in before proceeding. There should be one page, `login.jsp`, that must be accessed to authenticate a user. The `login.jsp` should submit to a page `authenticate.jsp`, which will validate that the username and password submitted exists in the `User` table of the database.

If the username and password do not match any in the `User` table, direct the user back to the `login.jsp` with a message that says "Invalid username and password." Otherwise, direct the user to `cat.jsp`.

You will have three different JSPs with content in your site – `cat.jsp`, `dog.jsp`, and `fish.jsp`. On each of these pages, link to the other two pages (i.e. `cat.jsp` should link to both `dog.jsp` and `fish.jsp`). You should also add one or more images of the specific animal to each page. Before displaying the page, though, make sure that the user has been authenticated. You can do this by setting a value in the session when the user logs in. As long as the session is valid, you can display the page. If the session becomes invalid, redirect the user to `login.jsp`.

On all of the pages, you need to be updating the database since the user is visiting different pages. We want to keep track of how many times each user has visited each page of the site.

There will be one more page that does not require any authentication to access – `stats.jsp`. On this page, you will display all of the usernames with the pages he has accessed and the number of times he has visited each page. Since we don't know the identity of the user when visiting `login.jsp`, we will include a row for "anonymous". A sample of the page is as follows.



Feel free to format the page however you would like, as long as it is displaying all the usernames, pages, and number of visits.

Grading Criteria

Labs are not graded based on any given criteria but are instead graded on effort and attendance. If you arrived to lab within the first 10 minutes and worked on it the for the entire duration of the lab, you will receive full credit regardless of whether you completed it. TAs will not grade labs until after at least half the lab period has elapsed. Use the lab time as an opportunity to more fully understand the course material and ask your TA questions.