Cmpt 470 - Assignment 3/4

Due: Nov 25, 2020. Midnight.

Overview

In this assignment, you will be creating a fully functioning CRUD application using the MVC architecture. This is an individual assignment and will be hosted on the same project as assignment 2:

- Database: you should create a database called “cmpt470”. In the using this database create a model called “Rectangle” to collect information about a series of Rectangles. The minimum attributes for the squares are width, height, and color (you may decide what these attributes are for). In addition, you may add as many other rectangle attributes as you’d like (Be creative, there will be a creative component to the mark :P). You must decide on a primary key for your table so that the CRUD operations can be executed.

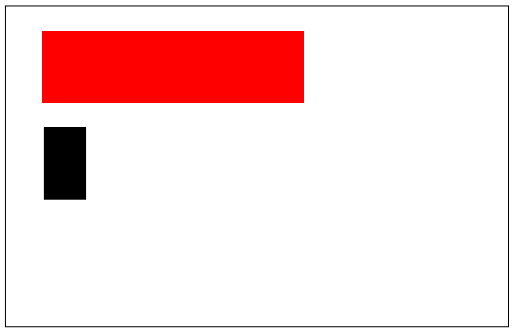
- Your app should have the following features:
  1. The ability to add new rectangles (with corresponding attributes).
  2. The ability to delete existing rectangles.
  3. The ability to change attributes of any of the rectangles.
  4. The ability to display (draw) all rectangles currently in the database (including any other information you collect). For example, if you currently have two rectangles in your database as follows:

Rectangle Database

	width	height	color
1	90	30	red
2	15	30	black

The display page *could* look something like this:

View:



In addition, you may also add or display any other attributes you wish. For example, you could choose to display the area of the rectangle. Please note that the requirements stated above is a minimum list, you may add to them as you see fit. Please be creative, part of your grade will be based on effort and creativity.

Architecture

Your application must use the Model View Controller architecture and you may use existing PHP framework or NodeJS package to accomplish this. You may send back a rendered page from the server **OR** send a JSON object from the server for the client-side code to display it on the browser (it is totally up to you).

Your main application should be served from either Windows Server 2016 or a linux-based virtual machine (compute engine) called "asn3-4":

- Use a new 50GB standard persistent disk
- Allow HTTP traffic

You must run a separate database MySQL server on a Linux Ubuntu instance called "asn3-4-DB" with the following properties:

- 1 vCPUs (3.75 GB memory)
- Ubuntu 16.04 LTS
- Allow traffic on port 3306

Your main application should connect to the database instance through the internal IP address, otherwise, the connection will not be guaranteed each time you renew your external IP. For more information on connecting to a MySQL instance on GCP, see the following article:
https://cloud.google.com/solutions/mysql-remote-access
For more information on setting up Nodejs on Compute engine:
https://cloud.google.com/nodejs/docs/tutorials/getting-started-on-compute-engine
For more information on setting up IIS and PHP on Compute engine:
https://vlemon.com/blog/google-cloud-platform/compute-engine-create-your-windows-server-2016-instance/

Submission

Be sure to turn off your virtual machines before the submission date. Similar to assignment 2, we will simply turn on the virtual machines for your application and the database server instances, then click on the external IP of your application. We should then be able to view your application. Please add the following emails as Owners of your project:

- bobbyctchab@gmail.com (NO typo)
- sumukhabharadwaj21@gmail.com

Similar to assignment 2, please also submit your PHP/NodeJS code to coursys: https://courses.cs.sfu.ca/. If for any reason, you cannot get the database connections working, you may still receive marks for any work that you have completed.

Marking Scheme

Adding, Deleting, and Editing rectangles: 14 Marks
Displaying Rectangles properly: 10 Marks
Creativity (relative): 4 Marks
Proper deployment and submission: 6 marks

THE END