MSDS 7330
File Organization and Database Management
Mini Project 4

This is a mini project for MSDS 7330, File Organization and Database Management. For this assignment, turn in a single pdf file containing all of your answers. The file should be named yourLastNameMiniProjectNumber.pdf. For example, the file name for my mini project 1 would be 'RafiqiMiniProject-1.pdf'.

Collaboration is expected and encouraged; however, each student must hand in their own homework assignment. To the greatest extent possible, answers should not be copied but, instead, should be written in your own words. Copying answers from anywhere is plagiarism, this includes copying text directly from the textbook. Do not copy answers. Always use your own words and your own code. Directly under each question list all persons with whom you collaborated and list all resources used in arriving at your answer. Resources include but are not limited to the textbook used for this course, papers read on the topic, and Google search results. Don't forget to place your name on the first page of the pdf document.

AWS

The objective of this lab is to gain familiarity with AWS (public cloud provider).

If you do not already have an AWS subscription, please sign up as a student. AWS provides you access to certain resources for free. Please be advised, NOT all of the services are free and it is your responsibility to ensure that you launch free resources and terminate them as soon as you are finished. Each instance in AWS states "free tier enabled." If you choose any other one, it could cost you money.

Once you are signed up to AWS, you will configure and launch an instance in the EC2 instance. You can choose the operating system of your choice. I usually work with Linux, but that does not mean you need to use that. Once an instance is launched, you need to connect to that instance from your local machine (laptop) using the secure shell.

At this time, you should have an instance up and running in AWS, and you should be able to log in from your laptop using SSH (putty), etc.

The next step is to download and install the MySQL Community Server database program on the EC2 instance. MySQL Community Server is a free download from https://www.mysql.com. Download and install MySQL Workbench on your local machine. Most of you should already have this from your previous course. MySQL Workbench is a visualization application for accessing MySQL databases.

Once you have installed MySQL, be sure to set the password for your user account on the MySQL database. And, be sure to give your account the privileges needed to create and modify

databases. The MySQL reference manual, available from https://www.mysql.com, provides in-depth instructions on how to install and configure your MySQL software.

Once you have installed and configured MySQL, select the MySQL database by executing the ``USE MySQL" command. Then, run the query ``SELECT User, Host FROM mysql.user;" from the command line.

Capture the resulting output as a screen capture or grab and turn in the resulting pdf showing both the query and the results.

This configuration is similar to what we did in the database class except that you are running MySQL on AWS instance.

- Create an instance on EC2
- Download and install MySQL on EC2
- Download (if you don't already have) MySQL Workbench on your local machine
- Connect MySQL Workbench to EC2 instance (you will need to create keys)
- Connect your local MySQL Workbench to MySQL on EC2

Submission: Submit different screenshots to show completion of each step

NOTE As stated earlier, please make sure to only use free resources on AWS and NEVER FORGET to terminate your instances. Everything that you get from your subscription is NOT FREE.

Collaborators:

Resources:

Question 2: One of the benefits of using the public Cloud is taking advantage of scalability. In this problem, you will Auto Scaling feature in AWS. Auto Scaling is used to ensure that you have the right number of resources (EC2 instances) available to handle the workload. You create a collection of EC2 instances into an Auto Scaling group. The auto-scaling group can be set up based upon different policies such as minimum, or the maximum number of EC2 instances or you can also specify desired capacity.

In this problem, you will set up the policy of having a minimum of 1 EC2 instance as it is easier to test the Auto Scaling feature.

- Create a launch group – This is a template for launching new EC2 instances. Use the smallest EC2 instance.
- Create an auto-scaling group – Here specify the minimum number of instances to 1.
- Verify the scaling group – As soon as you set this up, you will shortly see an EC2 instance show up in the EC2 dashboard. To validate the scaling group, terminate the EC2 instance, and since the policy is set up to have a minimum of 1 EC2 a new EC2 instance will be launched using the configuration set in the launch group.

Submission: Submit different screenshots to show completion of each step

NOTE: As stated earlier, please make sure to only use free resources on AWS and NEVER FORGET to terminate your instances. Everything that you get from your subscription is NOT FREE.

Collaborators:

Resources: