**Republic of the Philippines**

**Technological University of the Philippines**

**College of Science**

**Manila**

**WhiteSpace**:

Intranet Based MySQL and MSSQL Learning System with Interactive Progress and Ranking

Cruz, Aimee Lou D.  
De Vera, Jazelene Mae M.  
George, Donald Patrick C.

BSIT-4A

1. **INTRODUCTION**

Data, in the modern world, is one of the most essential things in how everything works nowadays. It’s in our government, our jobs, our bank and our accounts in them, and many more. We could even see it in our computers and phone without even noticing, as we view websites on desktops or use apps on our phone, raw data that’s collected is being transformed into readable information so that we, the average user, can use that information in our everyday decisions. Handling databases and keeping it organized as much as possible can be done in many ways, but the most popular is SQL.

Structured Query Language is one of the most widely used programming languages in the world specifically to manage data in databases. Many tech giants like Google, Facebook, Twitter, and even small companies all over use this. It would be very useful to have the knowledge of the in’s and out’s of the language, but to be able to use the language, we need an RDBMS.

A Relational Database Management System is like the IDE of SQL, there are many RDBMS to choose from, some are proprietary, like the most popular, Oracle Database and Microsoft SQL Server, etc., while others are freeware, like MySQL, and SQLite, and many more. Just like every IDE from other languages, it has its own set of unique features that not all IDE’s will have, and sometimes this makes it learning SQL a lot harder because you have to take into account that not every command or syntax in each RDBMS is the same.

E-learning is the use of multimedia tools in order to help with education. With more and more people using the internet, learning about these topics can be much easier to take up in the user’s spare time. Various exercises can help in getting the user’s attention and not make it seem boring to be self taught. Ranking in these exercises can also help motivate the user to do better in learning.

1. **BACKGROUND OF THE STUDY**

SQL Learners especially students and instructors need a tool where they can gain more knowledge in a very efficient manner without spending so much money. Upon learning, some difficulties arose, first and foremost they find the SQL and expensive learning materials and for the students. We all want something new, in order for us to learn on the field we chose. Majority of the lectures whether it was on the internet or in a book, most of us finds it uninteresting and end up not finishing the materials we used. Preferably, we move out directly to the hands on exercise, a trial and error approach to find out the functions of the SQL statements.

Researchers presented that there are lots of e-learning system invented throughout the years. Most of them were having a portal, exclusive in a certain vicinity. Just a few of them were focusing on one course.

With the correspondence of some incapabilities, our team came up to create a system focusing on one area only promoting a new way of learning, to show an interesting approach in learning.

**Problems:**

1. Stuck-up and tiresome SQL Lessons
2. Unaffordable learning materials

**Causes:**

1. Lesson comes in stereotyped method
2. Few learning tools with simulator

**Effects:**

1. Ineffective learning method
2. Hard time on finding the query test results
3. **OBJECTIVES OF THE STUDY**

The general objective of the study is to develop a SQL learning website that will be a learning tool for both students and/or instructors to be more familiar different SQL queries with corresponding rank exercises to be completed.

Specifically, the study aims to:

1. Design the system with the following features:
   1. Convenient SQL learning through intranet web lessons
   2. Distinguish differences of MySQL and MSSQL Server
   3. Practice learned lectures by exercises
   4. Activities randomly change for each user
   5. Executing SQL queries on its simulator
   6. Simulator informs user’s mistake
   7. Monitor one’s progress by ranking
2. Create the main system using web programming with multimedia, Atom text editor using the Laravel framework for the PHP coding, Bootstrap for design, CSS, Adobe Photoshop, Illustrator and Edge Animate for Multimedia features, MySQL for main system and simulator, Microsoft SQL server for simulator, and XAMPP as third party database server.
3. Test and improve the system in terms of:
4. Usability, attribute to be operated by user and use the application according to its features.
5. Portability, attribute to transfer the system from one type of computer to another with minimum expenditure of effort.
6. Reliability, attribute to function and maintain its features without crashing and doing an undesirable situation in line with its application’s consistency.
7. Functionality, attribute to perform the functions well as it is used by the user.

4. Determine the level of acceptability of the developed system using ISO 9126 instrument.

1. **SCOPE AND LIMITATIONS**

This study will focus on developing an intranet-based learning system. The system will provide a convenient knowledge enhancement in terms of learning MySQL and MSSQL. This proposed system will be designed for professors and students of College of Science who were taking up a database subjects such as Database Management System and Database Administration with the connection of MySQL and Microsoft SQL.

As regards to the professors, this system allows to enroll the students to have an access to the system. Once enrolled, the system generates a username and a temporary password. This also aims to view the students’ list as well as the scores registered and rankings of the students.

As for the students, this system allows to give lessons, exercises and activities along with the SQL statement simulator that let the students know their mistakes immediately. The activities will randomly change for each user, this will be their sum of everything learned in lessons and exercises. While taking exercises and activities, they will be earning points that leads them for ranking up. This rankings will determine their capacity and what have they learnt while using the system. Moreover, the system will help the students and learners to gain further knowledge in learning SQL in a pleasant approach that will commit to one’s mind.

The proposed system is limited only in what information will be gathered and cannot be managed by just anyone. Briefly, the data posted cannot be revised easily.

This system will only cover MySQL and Microsoft SQL Server syntaxes and the differences of their queries and commands. The Laravel framework will be used for the PHP coding and Bootstrap for the HTML, CSS, and JS formatting.

1. **SIGNIFICANCE OF THE STUDY**

The findings of this study will be deflected as for the advancement of learning approach of the students and teaching method by the instructors considering Structured Query Language or SQL depicts a vital role in programming, storing and maintaining data. As the computers and technology continuously rising and can be a learning paradigm, there are still larger students encounters stuck-up and tiresome SQL lessons. Nurturing one’s knowledge requires more learning materials which are effective but some of these is expensive and not everyone can afford it.

Implementing this system to the College of Science will help the students have more interest in learning SQL, by giving them lessons and activities that is visually eye catching. This will also assist professors in giving out activities or exercises to their students and also to keep track of the student’s performance with the use of the ranking system. This can also be easily accessed using the college’s computers.

With this proposed project, students and SQL learners will now have an entertaining and interesting training environment. Visual aid using multimedia aims to catch the attention of the student, this can be helpful especially if a student finds it difficult to learn the lessons on their own. Another benefit into having this system is to not have to spend money on reading and learning materials about SQL, sometimes these can be expensive so this will eliminate the cost to both the professors and to the students as well.