**HANDBOOK**

**Google Developer Student Clubs Universitas Sumatera Utara**

**Database Fundamentals with MySQL**

1. **Google Developer Student Clubs**

Google Developer Student Clubs (GDSC) is a club community for students, designed to help them build skills and knowledge in mobile and web application development. This program is open and can be followed by all students, ranging from basic level developers, to advanced levels to improve their abilities. This program is intended to be a place for students to be able to learn and collaborate to solve problems in the development of mobile and web applications. Google Developers through the Developer Student Clubs (GDSC) program is looking for active students and students from various universities in Indonesia, both public and private. Some of the benefits obtained from this activity are getting the latest information about the Google Developers program in Indonesia, getting direct access to the Google Developer team in Indonesia and ASIA Pacific, having the opportunity to study with Googlers and Developer Experts, and collaborating with GDSC Leaders throughout Indonesia.

1. **Database Fundamentals with MySQL Workshop**

MySQL is the world's most popular open source database. With its proven performance, reliability and ease-of-use, MySQL has become the leading database choice for web-based applications, used by high profile web properties including Facebook, Twitter, YouTube, Yahoo! and many more.

Oracle drives MySQL innovation, delivering new capabilities to power next generation web, cloud, mobile and embedded applications. Why MySQL? Many of the world's largest and fastest-growing organizations including Facebook, Twitter, Booking.com, and Verizon rely on MySQL to save time and money powering their high-volume Web sites, business-critical systems and packaged software.

MySQL is becoming so popular because of many good reasons, such as :

* MySQL is released under an open-source license. So you have nothing to pay to use it.
* MySQL is a very powerful program in its own right. It handles a large subset of the functionality of the most expensive and powerful database packages.
* MySQL uses a standard form of the well-known SQL data language.
* MySQL works on many operating systems and with many languages including PHP, PERL, C, C++, JAVA, etc.
* MySQL works very quickly and works well even with large data sets.
* MySQL is very friendly to PHP, the most appreciated language for web development.

Database is part of learning materials on GDSC USU Web Development Learning Path. In this learning path, the members of GDSC USU will be provided with some learning materials such as Workshop and Task. In the workshop, GDSC USU will invite the experts in this field to become a speaker and also help GDSC USU to provide a task for the members that are taking this learning path

1. **Details**

In this workshop, students will learn about fundamentals of PHP :

1. DDL and DML

Data Definition Language (DDL) and Data Manipulation Language (DML) together form a Database Language. The Data Definition Language defines the database **structure** or database **schema**. The schema created by DDL is populated or filled using Data Manipulation Language. DDL fills the rows of the table, and each row is called **Tuple**. Using DML, you can insert, modify, delete and retrieve (CRUD) the information from the Table. In this workshop, members will learn about the commands of DDL (CREATE, ALTER, DROP, TRUNCATE, etc) and DML (SELECT, INSERT, UPDATE, DELETE).

1. Relational Database

Relational databases are a type of database that allows users to access data that is stored in various tables connected by a unique ID or “key.” Using this key, users can unlock data entries related to that key on another table, to help with inventory management, shipping, and more. In relational database management systems (RDBMS), users can input SQL queries to retrieve the data needed for specific job functions. In this workshop, members will learn how to design a relational database.

1. MySQL

MySQL is a widely used relational database management system (RDBMS) developed by Oracle that is based on structured query language (SQL). Using MySQL, you can design a relational database, including manipulating data. In this workshop, members will learn how to implement DDL and DML using MySQL.

1. PHP and MySQL

With PHP, you can connect to MySQL databases and manipulate the data. In this workshop, members will learn how to connect MySQL to PHP and retrieve data from the database. Members will also learn to implement CRUD (Create, Read, Update, Delete) using PHP.

1. **Task**

For each live workshop, the members will be given a task to do based on the topic of the workshop. In this workshop, participants will be asked to design a relational database based on the PHP website they have made at the last workshop. Then, members have to connect MySQL database tables to the website . Members will be asked to add the CRUD for manipulating the students list in the website.

The website should fulfill some criteria, such as :

1. Add students when submitting the form (Create)
2. Edit students’ data (Update)
3. Delete students (Delete)
4. Show the detail of each student (Read)

**Scoring System**

| Criteria | Ratings | | | Total Points |
| --- | --- | --- | --- | --- |
| Qualified | Half Qualified | Not Qualified |
| Meet the website’s criteria | 22-30 | 10-21 | <10 | 30 |
| The relational database design | 22-30 | 10-21 | <10 | 30 |
| Understanding of MySQL | 16-20 | 10-15 | <10 | 20 |
| Creativity | 16-20 | 10-15 | <10 | 20 |
| **Total Points** | | | | 100 |

1. **Workshop Schedule**

**“*Database Fundamentals with MySQL*”**

**Session Form :** Learning Basic Database for Members of GDSC USU  
 **Day/Date : Sunday, December 11th 2022**  
 **Duration :** Speaker Session 1.45 - 3.45 PM (120 minutes)

QnA Space 3.45 - 4.15 PM (30 minutes)

**Place :** Google Meet and Youtube

1. **Tools**

Here are the tools you need to prepare before attending this workshop :

* Text editor (Visual Studio Code, Sublime Text, etc)
* XAMPP

1. **Target Participant**

All members of GDSC USU

1. **Person In Charge**

Nama : Herzinanda Putra

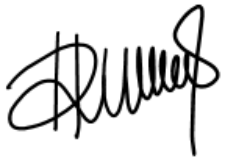
Contact : (+62) 81377491600

Email : [herzinanda31@gmail.com](mailto:herzinanda31@gmail.com)

**J. Closing**

This TOR is structured as a reference implementation of activities in general. As for the other technical matters that require revision, because of the needs of the effectiveness of activities in order to meet the maximum target of the activities that can make a positive impact on the target group, it will be arranged later.

Sincerely Yours,

******

***Herzinanda Putra***

***Technical of GDSC Universitas Sumatera Utara***