*An Internship on sql*

CAUVERY COLLEGE FOR WOMEN (AUTONOMOUS)

*Affiliated to*

BHARATHIDASAN UNIVERSITY, TIRUCHIRAPALLI

*In partial fulfilment of Degree of*

**BACHELOR OF COMMERCE**

*Submitted by*

Ms.D.DHANISHKA

Reg .No 23111036

PG & RESEARCH DEPARTMENT OF COMMERCE

CAUVERY COLLEGE FOR WOMEN (AUTONOMOUS)

Nationally Accredited (III Cycle) with “A” Grade by NAAC

ISO 9001: 2015 Certified

Tiruchirappalli-620018

2024-2025

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**CERTIFICATE**

This is to certify that the Internship report entitled “SQL“ submitted to Cauvery College for Women (Autonomous), Affiliated to Bharathidasan University in partial fulfilment of the Bcom., Degree in Commerce is the work done by Ms.D.DHANISHKA with Register Number 23111036 during the period of 2023-2024 in the PG & RESEARCH Department of Commerce, Cauvery College for Women (Autonomous), Tiruchirappalli.

The Internship VIVA-VOICE was held on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Head of the Department Faculty Advisor Internal Examiner**

**DECLARATION**

I, D.DHANISHKA, declare that the INTERNSHIP REPORT is the result of original work done by me during the period 2024-2025 under the supervision of DR.D.Ramya, M.Com., M.Phil., MBA., Ph.D., Associate Professor of Commerce at Cauvery College for Women (Autonomous).I also acknowledge the ADVANCED ANALYTICS FOR RESEARCH & DEVELOPMENT, Chennai. To the best of Women (Autonomous) for the requirements of any course of study.

**Place**: **Signature**

**ACKNOWLEDGEMENT** Acknowledgement is not the full expression of once gratitude towards the person whose help is acknowledged. Though language is an inadequate medium to express one’s gratitude. It is the only way one can recall one’s gratitude indebtedness to once benefactor. I would like to thank our Principal, Dr. V.SUJATHA, M.Com., M.Phil., Ph.D., Cauvery College for Women (Autonomous), Tiruchirappalli for permitting me to do our internship successfully.

I wish to extend to my sincere thanks to Dr. \_\_\_\_\_\_\_, Ph.D., Professor & Head, PG & RESEARCH Department of Commerce, for giving me an opportunity to pursue this internship.

I deeply thankful to DR. D.Ramya, M.Com., M.Phil., MBA., Ph.D., Associate Professor, PG & RESEARCH Department of Commerce, who has guided me throughout the internship.

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I thank my PARENTS who were always with me, which gave me moral strength to complete this internship in an efficient manner. At last, I am thankful to all those people who directly or indirectly helped me to complete internship successfully.

**INTRODUCTION**

In today’s data-driven world, knowledge of SQL (Structured Query Language) has become essential for data professionals. Over the course of this 15-day internship, I have gained in-depth insights into SQL, learning to manage databases, perform queries, manipulate data, and analyze datasets effectively. This report documents the journey from basic SQL concepts to advanced data manipulation techniques, demonstrating how each day’s learning contributed to my understanding of database management.

**OBSERVATION**

**DAY 1: DATE: 13.11.2024**

**Introduction to SQL and Databases**

The internship began with an overview of SQL and relational database concepts. I was introduced to database management systems (DBMS) like MySQL, PostgreSQL, and SQL Server. The session focused on understanding the structure of databases, including tables, columns, rows, and relationships. Additionally, I explored how SQL is used to communicate with databases, retrieve data, and understand database design fundamentals.

**DAY 2: DATE:14.11.2024**

**Creating Databases and Tables**

On the second day, I learned to create databases and tables using SQL commands. This involved understanding the structure of CREATE DATABASE and CREATE TABLE statements, specifying data types, constraints, and setting up the schema. Practice included creating sample databases with different data types like VARCHAR, INT, and DATE.

**DAY 3: DATE:15.11.2024**

**Data Insertion and Basic Queries**

The focus was on data manipulation, specifically the INSERT INTO command for populating tables with data. Additionally, I practiced basic queries using the SELECT statement, understanding how to filter data using conditions such as WHERE, AND, and OR operators. This day was crucial in understanding how to retrieve and view data effectively.

**DAY 4: DATE:16.11.2024**

**Data Retrieval and Sorting**

Building on previous lessons, I worked on sorting and filtering data using ORDER BY and LIMIT clauses. This day also covered how to handle null values and how to use the IS NULL and IS NOT NULL conditions. The session concluded with exercises focusing on extracting specific data using advanced filtering techniques.

**DAY 5: DATE:18.11.2024**

**Advanced Filtering Using Operators**

The day focused on mastering advanced SQL operators, such as BETWEEN, IN, LIKE, and wildcard characters. I applied these operators to queries to retrieve more targeted data from complex datasets. This lesson was pivotal in understanding how to perform precise data analysis with complex conditions.

**DAY 6: DATE:19.11.2024**

**Data Updating and Deletion**

I learned about the UPDATE and DELETE commands, understanding how to modify existing data or remove unnecessary entries. Practice involved creating a backup of data before performing updates, a best practice to use accidental data loss. This session highlighted the importance of maintaining data integrity during updates.

**DAY 7: DATE:20.11.2024**

**Introduction to SQL Joins**

Joins are an essential concept in SQL, and I was introduced to different types of joins: INNER JOIN, LEFT JOIN, RIGHT JOIN, and FULL JOIN. The day involved connecting multiple tables and retrieving data from them. Real-life scenarios illustrated the importance of relationships between tables.

**DAY 8: DATE:21.11.2024**

**Mastering SQL Joins with Practical Examples**

I applied join concepts to various databases, understanding the difference between inner and outer joins. Practical exercises included joining multiple tables to fetch comprehensive datasets. Emphasis was placed on using JOIN to generate complex reports and analyzing relational data.

**DAY 9: DATE:22.11.2024**

**Grouping and Aggregating Data**

Day 9 introduced aggregation functions like COUNT(), SUM(), AVG(), MIN(), and MAX(). Additionally, I learned about grouping data using the GROUP BY clause, and filtering grouped data with HAVING. This session was essential for summarizing large datasets effectively.

**DAY 10: DATE:23.11.2024**

**Subqueries and Nested Queries**

The focus was on subqueries and nested queries, learning how to use a query within another query. I practiced writing subqueries in the WHERE clause, FROM clause, and SELECT clause. Subqueries are a powerful tool in SQL for fetching data when complex filtering is required.

**DAY 11:**  **DATE:25.11.2024**

**Database Functions and String Manipulation**

Day 11 involved learning about SQL functions, including string, date, and numerical functions. I practiced using CONCAT(), SUBSTRING(), UPPER(), and date manipulation functions like DATEADD and DATEDIFF. This session was about enhancing data readability and formatting

**DAY 12: DATE:26.11.2024**

**Managing Data Integrity with Constraints**

I learned about constraints such as PRIMARY KEY, FOREIGN KEY, UNIQUE, NOT NULL, and CHECK. These constraints ensure data integrity and enforce rules at the database level. Practice included adding constraints to existing tables and understanding the impact of constraints on Data insertion.

**DAY 13: DATE:27.11.2024**

**Transactions and Error Handling**

This day covered the concept of transactions in SQL using commands like BEGIN TRANSACTION, COMMIT, and ROLLBACK. I understood the importance of maintaining data consistency during multiple operations. Error handling and debugging techniques using TRY...CATCH were also practiced.

**DAY 14: DATE:28.11.2024**

**Views and Stored Procedures**

I explored SQL views to create virtual tables, which simplify complex queries. Additionally, I learned about stored procedures- predefined SQL code that can be saved and reused. These are beneficial for repetitive tasks and complex operations that involve multiple steps.

**DAY 15: DATE:29.11.2024**

**Data Security and Performance Optimization**

The final day focused on data security, including user management, setting permissions, and understanding roles. I also covered performance optimization techniques such as indexing, query optimization, and analyzing execution plans. This day wrapped up with best practices for writing efficient SQL code.

**CONCLUSION**

This 15-day SQL internship has been a transformative learning experience, providing me with a solid foundation in SQL. I have developed skills to mana XTge and manipulate data effectively, create complex queries, and ensure data integrity. With the knowledge gained, I am well-prepared to tackle real-world data challenges and support data-driven decision-making in any organization.

**CAUVERY COLLEGE FOR WOMEN (AUTONOMOUS), TRICY-18**

**PG & RESEARCH DEPARTMENT OF COMMERCE**

**INTERNSHIP EVALUATION FORM**

**YEAR: 2024-2025**

**Name of the Student :**

**Register Number :**

**Name of the Faculty Supervisor :**

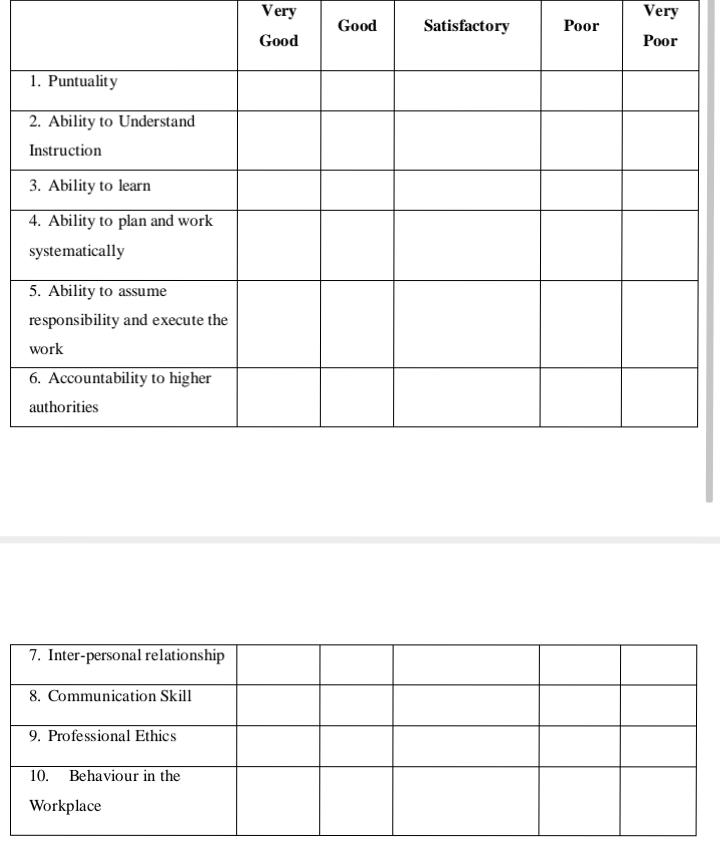
**Name of the Organization :**

**Period of Placement :**

**Name of the organization Supervisor :**

Kindly evaluate the student on each of the following points based on her performance during the placement using the five scale given and send it by post on the completion if the internship.

**Key**: Very Good: 5, Good:4, Satisfactory: 3, Poor:2, Very Poor: 1



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