Republic of the Philippines
POLYTECHNIC UNIVERSITY OF THE PHILIPPINES
College of Computer and Information Sciences
Sta. Mesa, Manila

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Section: BSIT 3-5

Database Administration

Activity 1: SQL DDL and DML

Instructions: Carefully read and analyze the statements. Write down the corresponding commands for each number to accomplish the tasks, and submit your answer in pdf format.

1. Create a new table using DDL:

   Create a new table called "Sales" with the following columns: "OrderID" (int) (unique) (primary key), "Product" (varchar), "Quantity" (int), "Price" (decimal), and "Date" (datetime).

   ```
   CREATE TABLE Sales (
       OrderID INT UNIQUE PRIMARY KEY,
       Product VARCHAR(255),
       Quantity INT,
       Price DECIMAL(10, 2),
       Date DATETIME
   );
   ```

2. Insert data using DML:

   Insert five new rows into the "Sales" table you just created. Each row should represent a sale (Feel free to choose products) and should include values for all five columns.

   ```
   INSERT INTO Sales (OrderID, Product, Quantity, Price, Date)
   VALUES
       (1, 'Graphics Card', 5, 25000, '2023-02-16 10:00:00'),
       (2, 'Processor', 3, 35000, '2023-02-17 13:30:00'),
       (3, 'Motherboard', 8, 15990, '2023-18-03 11:45:00'),
       (4, 'Cooling Fan', 2, 3490, '2023-02-19 10:15:00'),
       (5, 'Memory', 10, 15250, '2023-02-20 16:00:00');
   ```

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3. Update data using DML:

Update the price of the first sale in the "Sales" table to be 3,500.00.

```
UPDATE Sales
SET Price = 3500.00
WHERE OrderID = 1;
```

4. Delete data using DML:

Delete the row in the "Sales" table where the OrderID is 3.

```
DELETE FROM Sales
WHERE OrderID = 3;
```

5. Alter the table using DDL:

Add a new column to the "Sales" table called "Discount" (decimal) and set the default value to 0.00.

```
ALTER TABLE Sales
    ADD Discount decimal DEFAULT 0.00;
```

6. Modify the table using DDL:

Change the data type of the "Quantity" column in the "Sales" table to be smallint.

```
ALTER TABLE Sales
    ALTER COLUMN Quantity SMALLINT;
```

7. Use the SELECT command with WHERE clause:

Retrieve all the orders from the "Sales" table that were made on or after January 3, 2022, and have a quantity greater than or equal to 10.

```
SELECT * FROM Sales
WHERE Date >= '2022-01-03' AND Quantity >= 10;
```

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8. Use the SELECT command with ORDER BY and LIMIT:

   Retrieve the top 3 sales in the "Sales" table, ordered by price in descending order.

   SELECT * FROM Sales
   ORDER BY Price DESC
   LIMIT 3;

9. Use the SUM function to calculate the total sales:

   Calculate the total sales amount in the "Sales" table.

   SELECT SUM(Quantity * Price) AS Total_Sales FROM Sales;

10. Use the AVG function to calculate the average price:

   Calculate the average price of all products in the "Sales" table.

   SELECT AVG(Price) AS Average_Price FROM Sales;