

**Project: Inventory management system**

**Submitted By:**

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**Discipline : CS 4 A**

**Subject : Database**

**Submitted to:**

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Source code and screen shots

CREATE DATABASE InventoryDB;

USE InventoryDB;

CREATE TABLE Categories(Category\_id INT PRIMARY KEY, CategoryName VARCHAR (50));

CREATE TABLE Product(Product\_id INT PRIMARY KEY, Product\_Name VARCHAR(55), Category\_id INT, Unit\_price DECIMAL(10,2), Units\_instock INT,

FOREIGN KEY (Category\_id) REFERENCES Categories(Category\_id));

CREATE TABLE Sales(SaleID INT PRIMARY KEY, Product\_id INT, SaleDate DATE, QuantitySold INT, FOREIGN KEY (Product\_id) REFERENCES Product(Product\_id));

INSERT INTO Categories(Category\_id, CategoryName) VALUES

(101, 'Electronics'),

(102, 'Mobile Devices'),

(103, 'Audio Accessories'),

(104, 'Televisions'),

(105, 'Cameras'),

(106, 'Appliances'),

(107, 'Home Cleaning'),

(108, 'Kitchen Appliances'),

(109, 'Personal Care'),

(110, 'Laundry Appliances'),

(111, 'Furniture'),

(112, 'Office Furniture'),

(113, 'Home Decor'),

(114, 'Wall Art'),

(115, 'Outdoor Living'),

(116, 'Sports Equipment'),

(117, 'Sporting Goods'),

(118, 'Accessories'),

(119, 'Stationery'),

(120, 'Computer Accessories'),

(121, 'Storage Devices'),

(122, 'Mobile Accessories'),

(123, 'Kitchenware'),

(124, 'Dining & Serving'),

(125, 'Bathroom Accessories'),

(126, 'Cleaning Supplies'),

(127, 'Pet Supplies'),

(128, 'Gaming'),

(129, 'Health & Fitness'),

(130, 'First Aid & Medical'),

(131, 'Personal Care & Beauty'),

(132, 'Weather Gear'),

(133, 'Travel Accessories');

INSERT INTO Product(Product\_id, Product\_Name, Category\_id, Unit\_price, Units\_instock) VALUES

(1, 'Laptop', 101, 1200.00, 50),

(2, 'Smartphone', 102, 800.00, 100),

(3, 'Tablet', 102, 500.00, 75),

(4, 'Desktop Computer', 101, 1500.00, 30),

(5, 'Headphones', 103, 100.00, 200),

(6, 'Portable Speaker', 103, 150.00, 150),

(7, 'Television', 104, 2000.00, 40),

(8, 'Digital Camera', 105, 600.00, 80),

(9, 'Microwave Oven', 106, 300.00, 120),

(10, 'Refrigerator', 106, 1200.00, 60),

(11, 'Vacuum Cleaner', 107, 250.00, 100),

(12, 'Toaster', 108, 50.00, 150),

(13, 'Coffee Maker', 108, 100.00, 100),

(14, 'Blender', 108, 80.00, 120),

(15, 'Electric Kettle', 108, 40.00, 200),

(16, 'Iron', 109, 30.00, 180),

(17, 'Hair Dryer', 109, 25.00, 250),

(18, 'Washing Machine', 110, 800.00, 70),

(19, 'Dishwasher', 110, 700.00, 60),

(20, 'Sofa', 111, 600.00, 25),

(21, 'Bed', 111, 800.00, 20),

(22, 'Dining Table', 111, 400.00, 40),

(23, 'Office Chair', 112, 150.00, 80),

(24, 'Bookshelf', 112, 200.00, 60),

(25, 'Curtains', 113, 50.00, 300),

(26, 'Carpet', 113, 80.00, 150),

(27, 'Wall Clock', 114, 20.00, 500),

(28, 'Painting', 114, 300.00, 30),

(29, 'Outdoor Grill', 115, 150.00, 70),

(30, 'Garden Hose', 115, 30.00, 200),

(31, 'Patio Furniture Set', 115, 800.00, 15),

(32, 'Bicycle', 116, 400.00, 50),

(33, 'Treadmill', 116, 1000.00, 20),

(34, 'Dumbbell Set', 116, 150.00, 100),

(35, 'Yoga Mat', 116, 20.00, 150),

(36, 'Basketball', 117, 30.00, 80),

(37, 'Football', 117, 25.00, 100),

(38, 'Golf Clubs', 117, 200.00, 40),

(39, 'Tennis Racket', 117, 80.00, 60),

(40, 'Running Shoes', 118, 100.00, 150),

(41, 'Backpack', 118, 50.00, 200),

(42, 'Sunglasses', 118, 30.00, 250),

(43, 'Watch', 118, 150.00, 100),

(44, 'Fountain Pen', 119, 20.00, 300),

(45, 'Notebook', 119, 5.00, 500),

(46, 'Desk Lamp', 119, 40.00, 150),

(47, 'Calculator', 119, 15.00, 200),

(48, 'Printer', 120, 200.00, 50),

(49, 'Scanner', 120, 150.00, 80),

(50, 'Projector', 120, 500.00, 25),

(51, 'External Hard Drive', 121, 100.00, 100),

(52, 'USB Flash Drive', 121, 20.00, 300),

(53, 'Keyboard', 121, 50.00, 150),

(54, 'Mouse', 121, 30.00, 200),

(55, 'Power Bank', 122, 40.00, 200),

(56, 'Charger Cable', 122, 10.00, 300),

(57, 'Wireless Earbuds', 122, 80.00, 150),

(58, 'Phone Case', 122, 15.00, 250),

(59, 'Kitchen Knife Set', 123, 50.00, 100),

(60, 'Cutting Board', 123, 20.00, 150),

(61, 'Cookware Set', 123, 100.00, 80),

(62, 'Blender', 123, 80.00, 120),

(63, 'Tea Set', 124, 30.00, 200),

(64, 'Coffee Mug', 124, 10.00, 300),

(65, 'Water Pitcher', 124, 20.00, 250),

(66, 'Dinnerware Set', 124, 150.00, 100),

(67, 'Bathroom Towel Set', 125, 40.00, 150),

(68, 'Shower Curtain', 125, 15.00, 250),

(69, 'Toothbrush Holder', 125, 10.00, 300),

(70, 'Soap Dispenser', 125, 12.00, 200),

(71, 'Laundry Detergent', 126, 20.00, 250),

(72, 'Fabric Softener', 126, 15.00, 200),

(73, 'Bleach', 126, 10.00, 300),

(74, 'Cleaning Wipes', 126, 8.00, 400),

(75, 'Dog Food', 127, 30.00, 150),

(76, 'Cat Litter', 127, 25.00, 200),

(77, 'Pet Bed', 127, 50.00, 100),

(78, 'Fish Tank', 127, 80.00, 75),

(79, 'Gaming Console', 128, 400.00, 50),

(80, 'Video Games', 128, 60.00, 200),

(81, 'Gaming Headset', 128, 80.00, 150),

(82, 'Gaming Chair', 128, 200.00, 80),

(83, 'Digital Watch', 129, 150.00, 100),

(84, 'Fitness Tracker', 129, 100.00, 120),

(85, 'Smart Scale', 129, 50.00, 150),

(86, 'Bluetooth Earphones', 129, 70.00, 180),

(87, 'First Aid Kit', 130, 30.00, 200),

(88, 'Thermometer', 130, 10.00, 300),

(89, 'Pain Reliever', 130, 15.00, 250),

(90, 'Bandages', 130, 8.00, 400),

(91, 'Sunscreen', 131, 12.00, 200),

(92, 'Moisturizer', 131, 15.00, 250),

(93, 'Facial Cleanser', 131, 10.00, 300),

(94, 'Shampoo', 131, 8.00, 400),

(95, 'Umbrella', 132, 20.00, 300),

(96, 'Raincoat', 132, 40.00, 150),

(97, 'Winter Jacket', 132, 80.00, 100),

(98, 'Gloves', 132, 10.00, 500),

(99, 'Backpack', 133, 50.00, 200),

(100, 'Travel Pillow', 133, 15.00, 300);

-- Update Product: SQL queries to update product information (e.g., update unit price or units in stock).

-- Update based on the Unit Price

UPDATE Product

SET Unit\_price = Unit\_price \* 0.95 -- Unit\_Price decrease of 5% for Electronics and Mobile Devices due to New Year Offers.

WHERE Category\_id = 102 OR Category\_id = 101;

-- Update based on the Unit Stock after New Year

UPDATE Product

SET Units\_instock = Units\_instock - 5

WHERE Category\_id = 101 OR Category\_id = 102 AND Units\_instock >= 5;

-- Update the Product Name (Desktop Computer) to Personal Computer

SET SQL\_SAFE\_UPDATES = 0;

UPDATE Product

SET Product\_Name = "PC"

WHERE Product\_Name = "Desktop Computer";

-- Delete Product: SQL queries to delete a product (Thermometer) from the Products table.

DELETE FROM Product

WHERE Product\_Name = "Thermometer";

-- Record Sales: SQL queries to record product sales in the Sales table.

-- Inserting sample sales data into the Sales table

INSERT INTO Sales(SaleID, Product\_id, SaleDate, QuantitySold) VALUES

(1, 1, '2024-01-01', 3), -- Laptop sold on January 1, 2024, 3 units

(2, 5, '2024-01-02', 2), -- Headphones sold on January 2, 2024, 2 units

(3, 10, '2024-01-03', 1), -- Refrigerator sold on January 3, 2024, 1 unit

(4, 17, '2024-01-04', 4), -- Hair Dryer sold on January 4, 2024, 4 units

(5, 22, '2024-01-05', 2), -- Dining Table sold on January 5, 2024, 2 units

(6, 31, '2024-01-06', 1), -- Patio Furniture Set sold on January 6, 2024, 1 unit

(7, 40, '2024-01-07', 3), -- Running Shoes sold on January 7, 2024, 3 units

(8, 48, '2024-01-08', 2), -- Printer sold on January 8, 2024, 2 units

(9, 55, '2024-01-09', 5), -- Power Bank sold on January 9, 2024, 5 units

(10, 63, '2024-01-10', 1), -- Tea Set sold on January 10, 2024, 1 unit

(11, 71, '2024-01-11', 4), -- Laundry Detergent sold on January 11, 2024, 4 units

(12, 79, '2024-01-12', 2), -- Gaming Console sold on January 12, 2024, 2 units

(13, 86, '2024-01-13', 3), -- Bluetooth Earphones sold on January 13, 2024, 3 units

(14, 94, '2024-01-14', 1), -- Shampoo sold on January 14, 2024, 1 unit

(15, 100, '2024-01-15', 2), -- Travel Pillow sold on January 15, 2024, 2 units

(16, 5, '2024-01-16', 3), -- Headphones sold on January 16, 2024, 3 units

(17, 17, '2024-01-17', 2), -- Hair Dryer sold on January 17, 2024, 2 units

(18, 22, '2024-01-18', 1), -- Dining Table sold on January 18, 2024, 1 unit

(19, 31, '2024-01-19', 4), -- Patio Furniture Set sold on January 19, 2024, 4 units

(20, 40, '2024-01-20', 2), -- Running Shoes sold on January 20, 2024, 2 units

(21, 48, '2024-01-21', 1), -- Printer sold on January 21, 2024, 1 unit

(22, 55, '2024-01-22', 3), -- Power Bank sold on January 22, 2024, 3 units

(23, 63, '2024-01-23', 2), -- Tea Set sold on January 23, 2024, 2 units

(24, 71, '2024-01-24', 1), -- Laundry Detergent sold on January 24, 2024, 1 unit

(25, 79, '2024-01-25', 5), -- Gaming Console sold on January 25, 2024, 5 units

(26, 86, '2024-01-26', 2), -- Bluetooth Earphones sold on January 26, 2024, 2 units

(27, 94, '2024-01-27', 3), -- Shampoo sold on January 27, 2024, 3 units

(28, 100, '2024-01-28', 1), -- Travel Pillow sold on January 28, 2024, 1 unit

(29, 5, '2024-01-29', 2), -- Headphones sold on January 29, 2024, 2 units

(30, 17, '2024-01-30', 3), -- Hair Dryer sold on January 30, 2024, 3 units

(31, 22, '2024-01-31', 1), -- Dining Table sold on January 31, 2024, 1 unit

(32, 31, '2024-02-01', 4), -- Patio Furniture Set sold on February 1, 2024, 4 units

(33, 40, '2024-02-02', 2), -- Running Shoes sold on February 2, 2024, 2 units

(34, 48, '2024-02-03', 1), -- Printer sold on February 3, 2024, 1 unit

(35, 55, '2024-02-04', 5), -- Power Bank sold on February 4, 2024, 5 units

(36, 63, '2024-02-05', 2), -- Tea Set sold on February 5, 2024, 2 units

(37, 71, '2024-02-06', 3), -- Laundry Detergent sold on February 6, 2024, 3 units

(38, 79, '2024-02-07', 1), -- Gaming Console sold on February 7, 2024, 1 unit

(39, 86, '2024-02-08', 4), -- Bluetooth Earphones sold on February 8, 2024, 4 units

(40, 94, '2024-02-09', 2), -- Shampoo sold on February 9, 2024, 2 units

(41, 100, '2024-02-10', 1), -- Travel Pillow sold on February 10, 2024, 1 unit

(42, 5, '2024-02-11', 3), -- Headphones sold on February 11, 2024, 3 units

(43, 17, '2024-02-12', 2), -- Hair Dryer sold on February 12, 2024, 2 units

(44, 22, '2024-02-13', 1), -- Dining Table sold on February 13, 2024, 1 unit

(45, 31, '2024-02-14', 4), -- Patio Furniture Set sold on February 14, 2024, 4 units

(46, 40, '2024-02-15', 2), -- Running Shoes sold on February 15, 2024, 2 units

(47, 48, '2024-02-16', 1), -- Printer sold on February 16, 2024, 1 unit

(48, 55, '2024-02-17', 3), -- Power Bank sold on February 17, 2024, 3 units

(49, 63, '2024-02-18', 2), -- Tea Set sold on February 18, 2024, 2 units

(50, 71, '2024-02-19', 1); -- Laundry Detergent sold on February 19, 2024, 1 unit

-- Using Join Operation and CASE(WHEN, ELSE) to update the Units\_instock in the Products table based on the QuantitySold in the Sales table.

UPDATE Product

LEFT JOIN Sales ON Product.Product\_id = Sales.Product\_id

SET Product.Units\_instock =

CASE

WHEN Sales.QuantitySold IS NOT NULL THEN Product.Units\_instock - Sales.QuantitySold

ELSE Product.Units\_instock

END;

SELECT \* FROM Product

/\* Remaning Work to Complete

Data Integrity: Implement data integrity constraints such as foreign key constraints between Products.CategoryID and Categories.CategoryID.

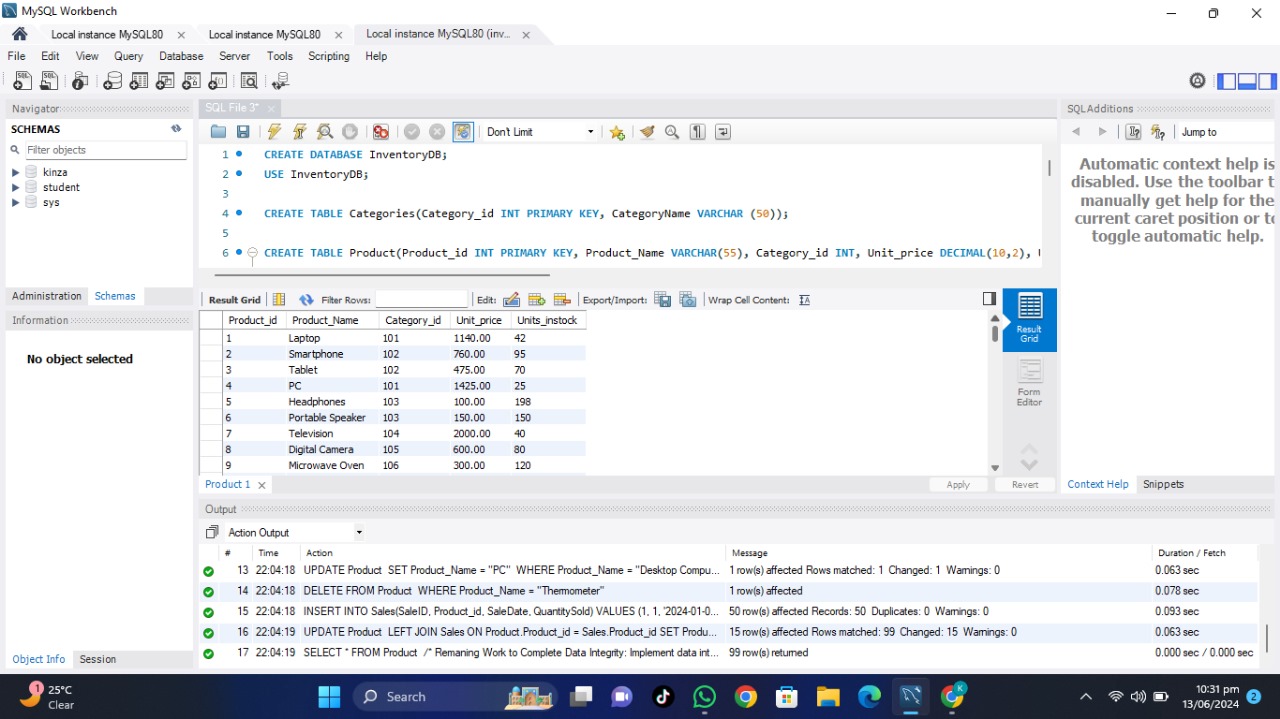
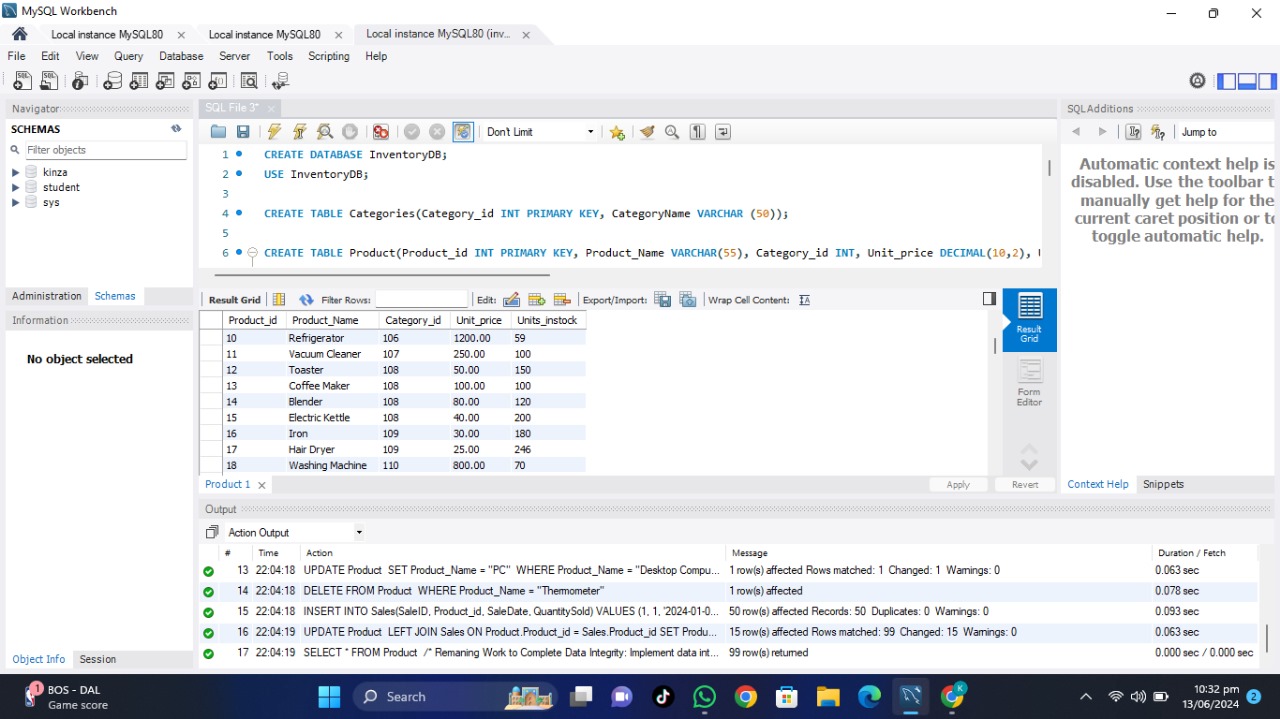
Data Validation: Include basic data validation checks (e.g., ensuring unit price is positive, quantity sold is non-negative).

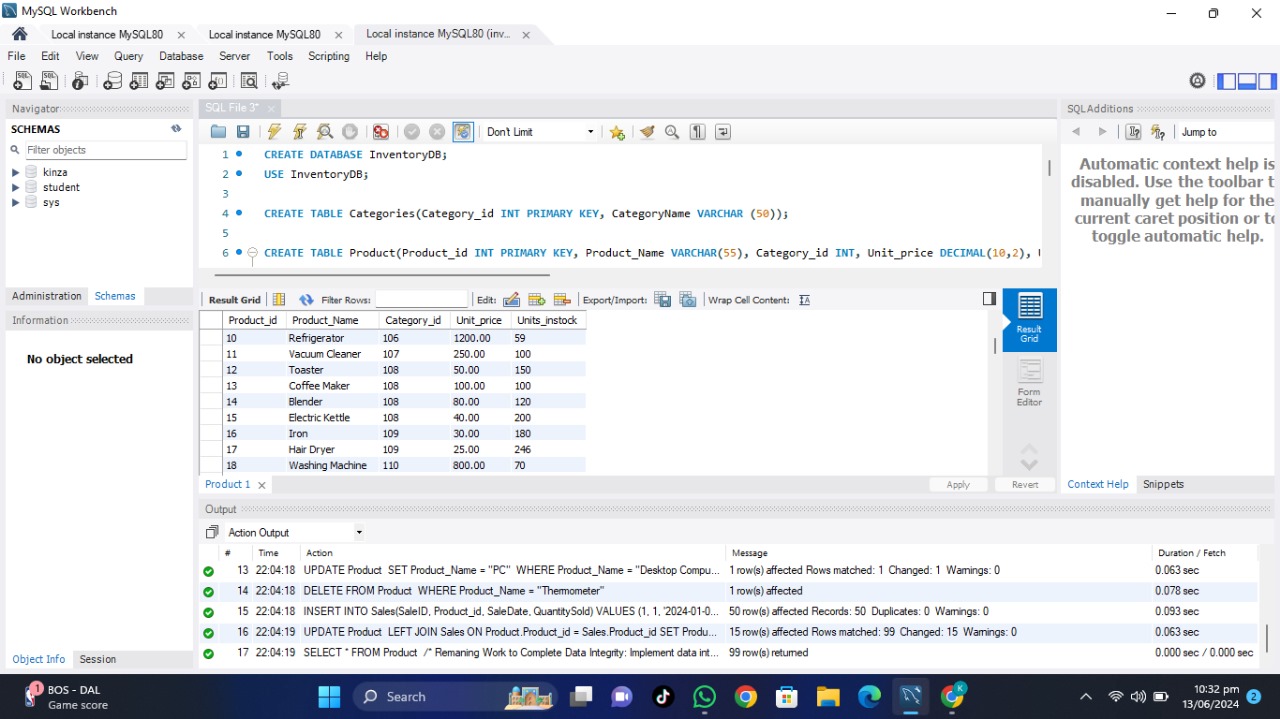
Reports: Create SQL queries to generate basic reports such as total sales by product or category, current inventory status, etc.

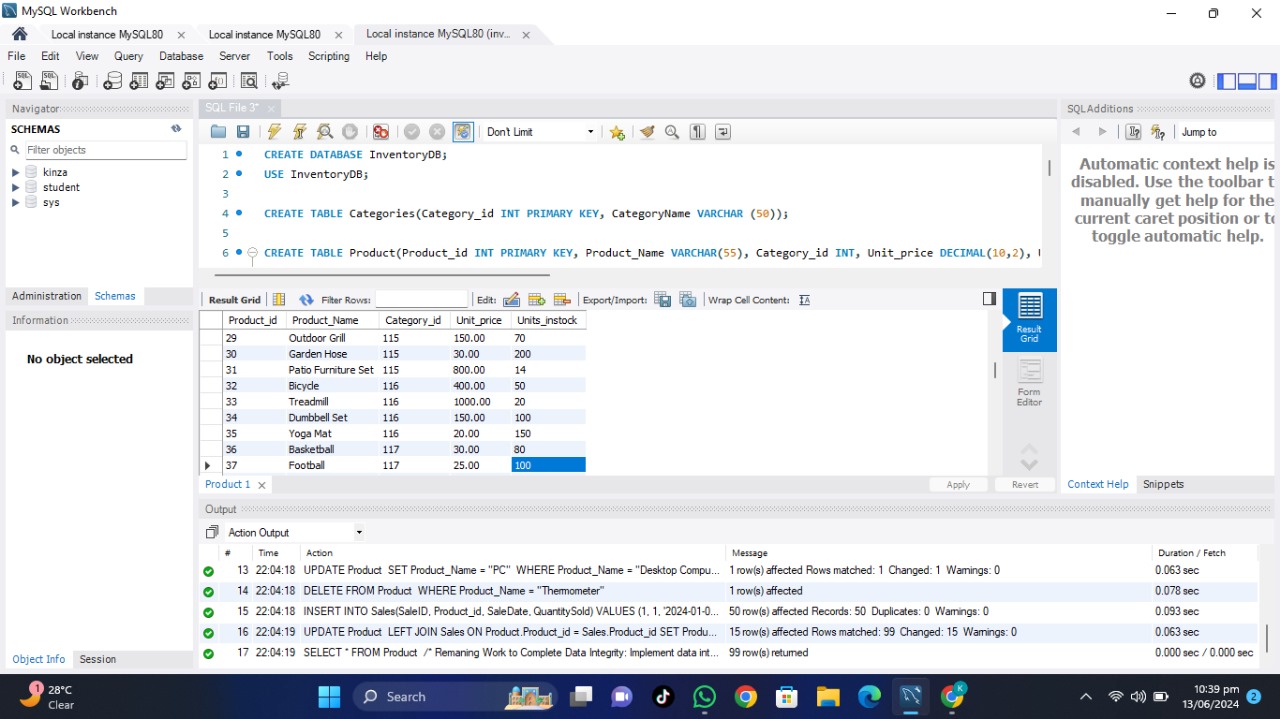
Documentation: Provide documentation for your database schema, explaining the purpose of each table and its columns, along with sample queries for basic operations and reports.

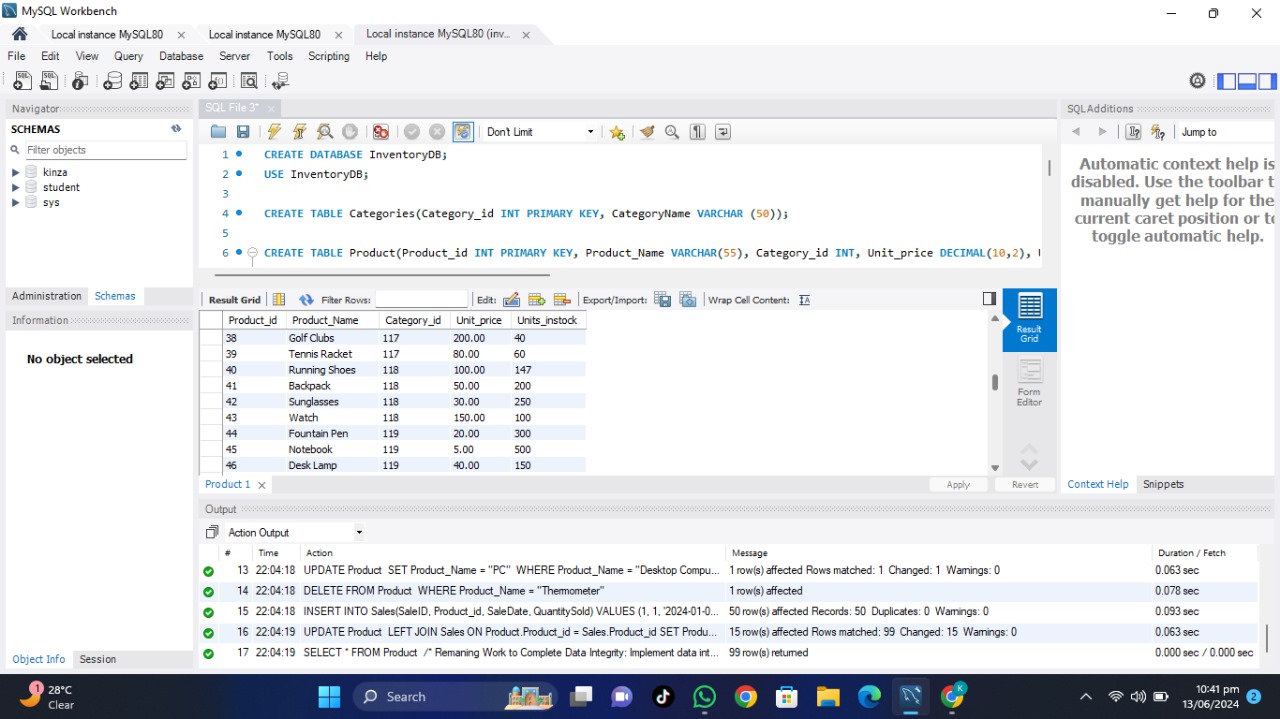
Testing: Test your SQL queries thoroughly to ensure they perform as expected and handle edge cases gracefully (e.g., attempting to sell more units than available in stock).\*/

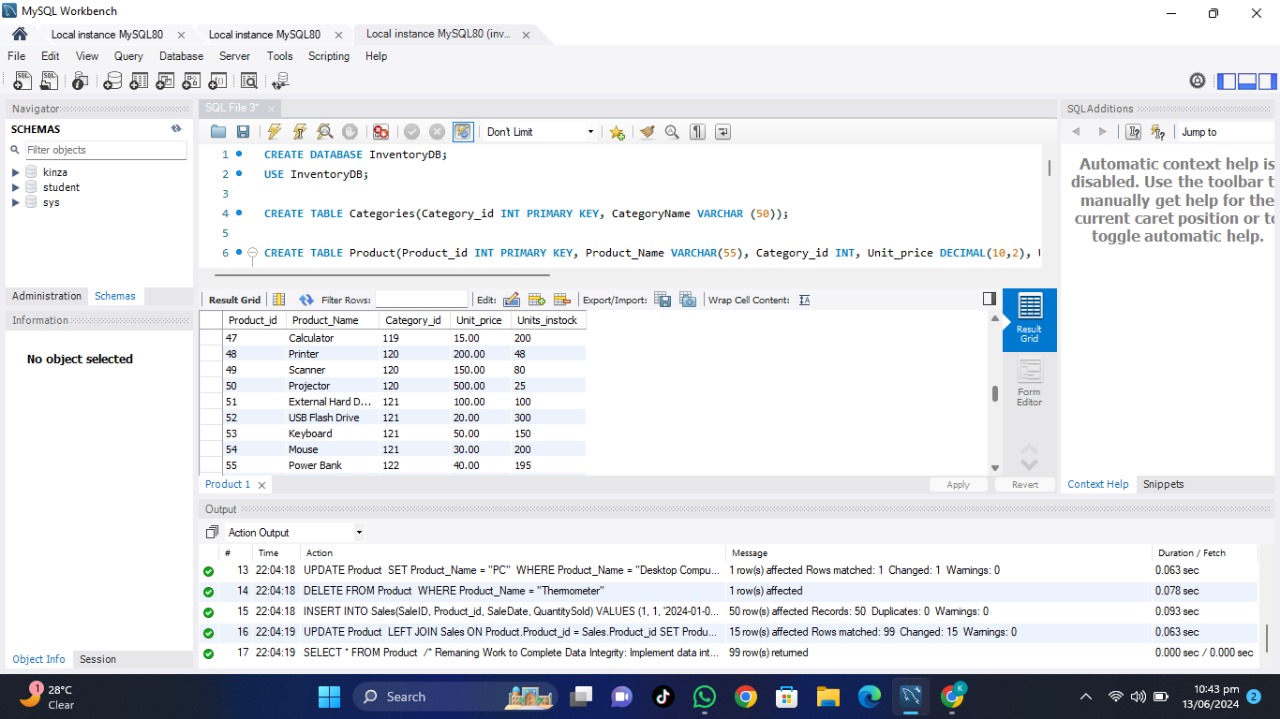
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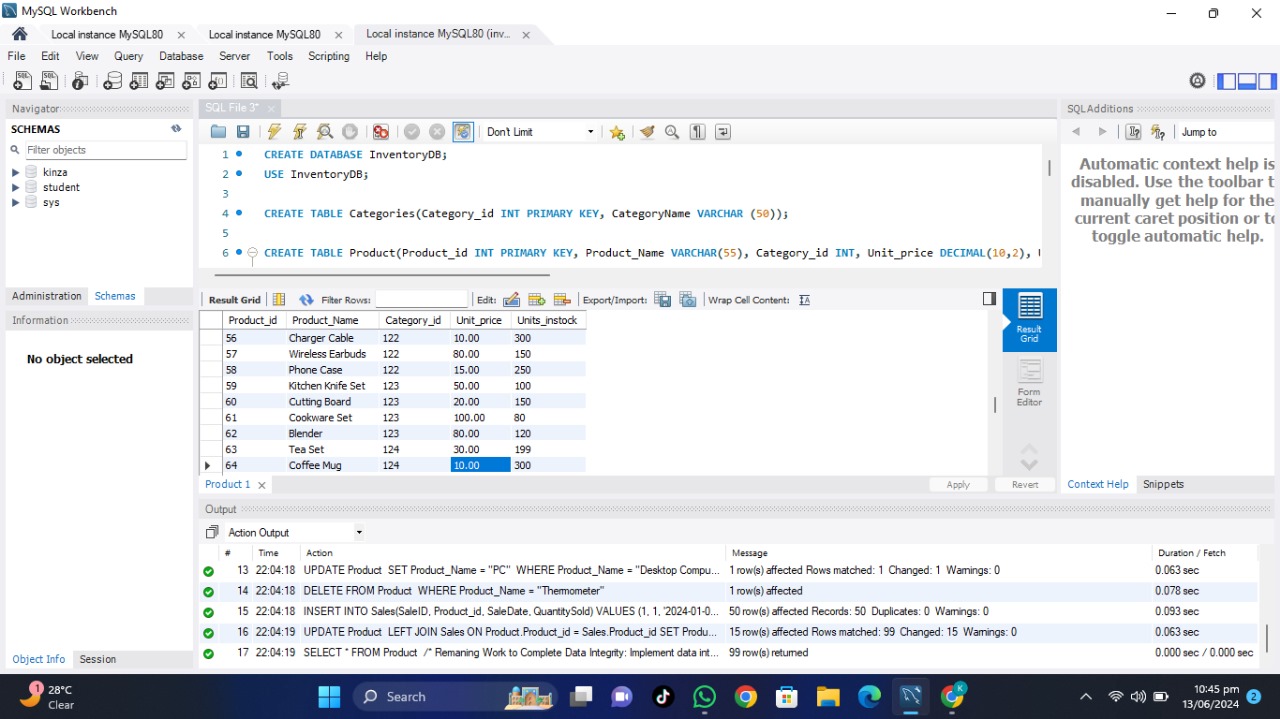
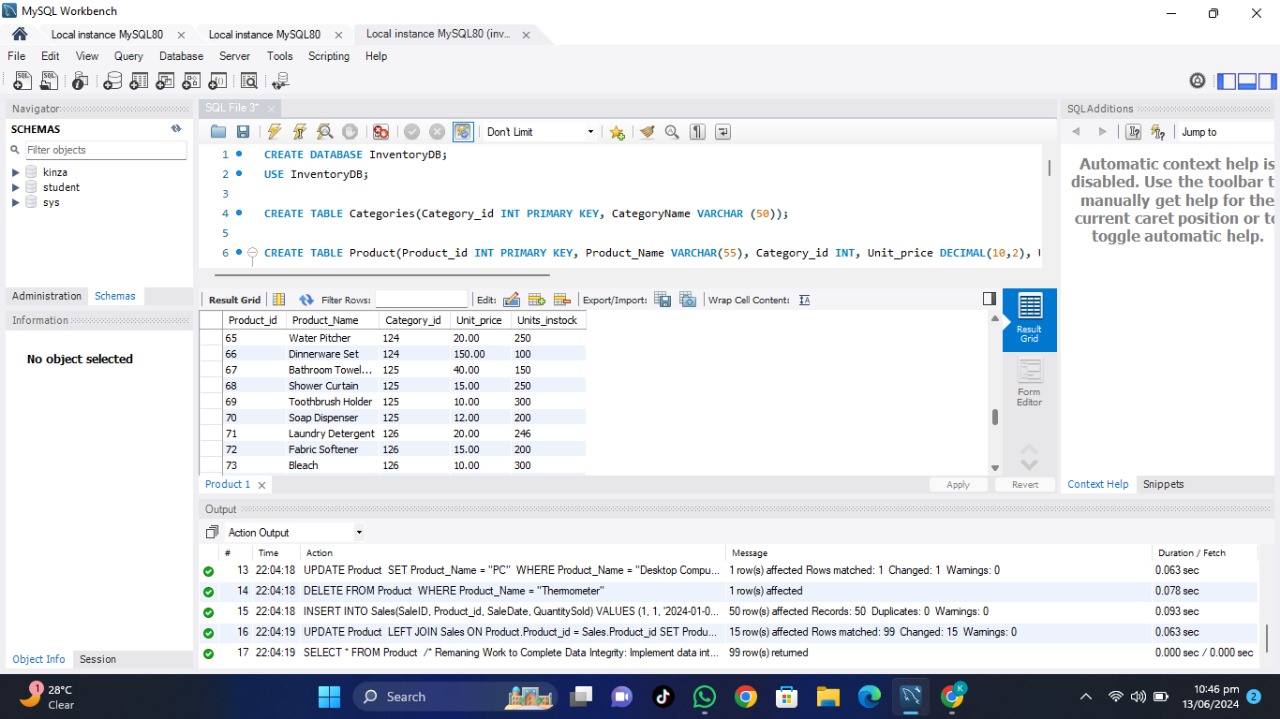
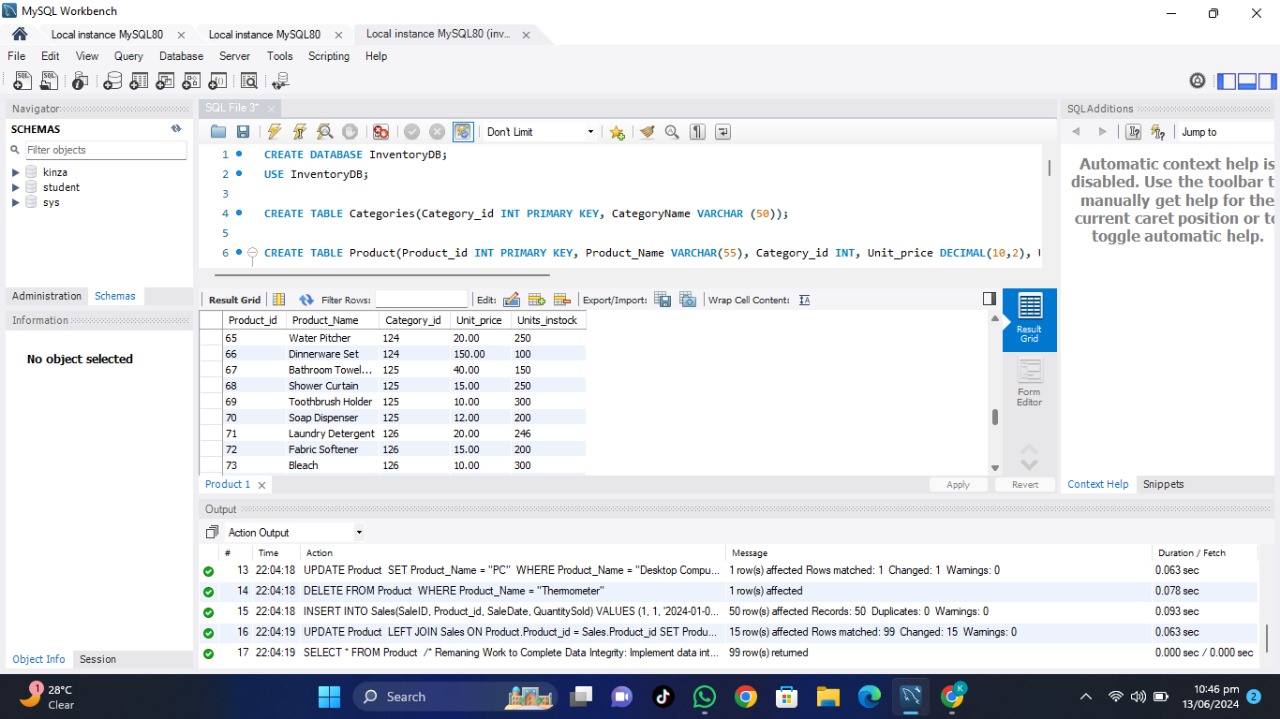
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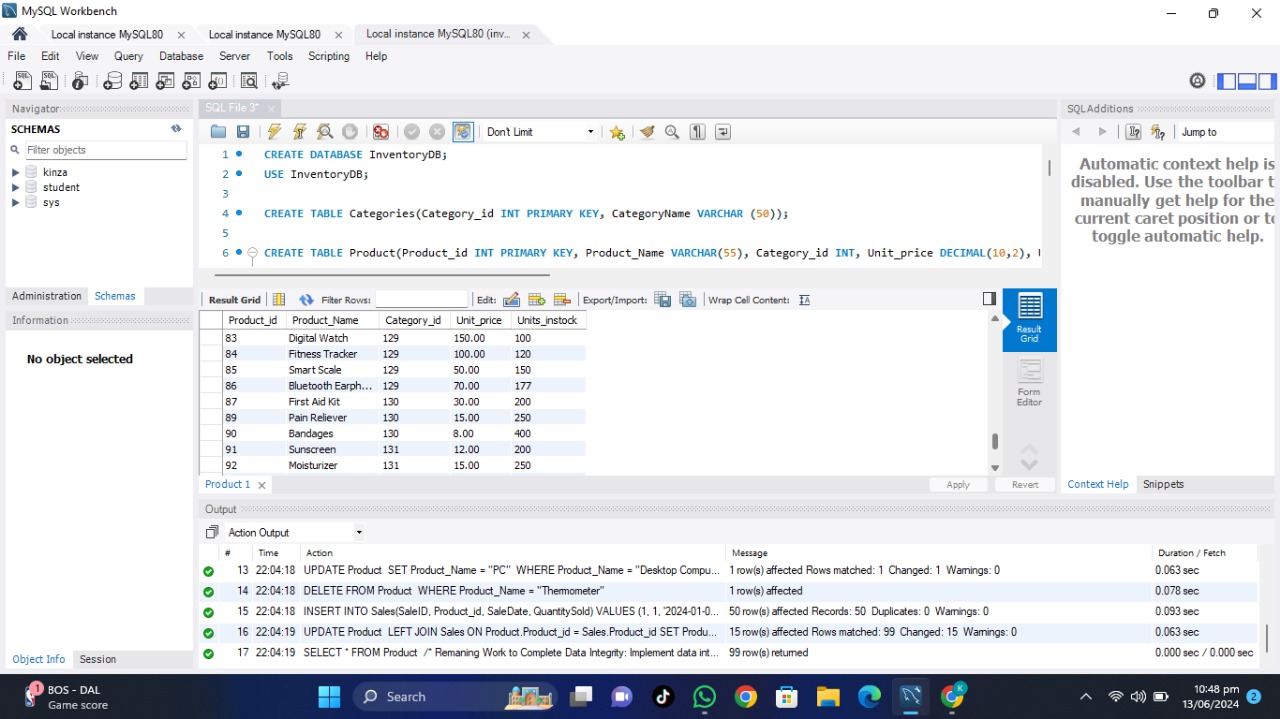
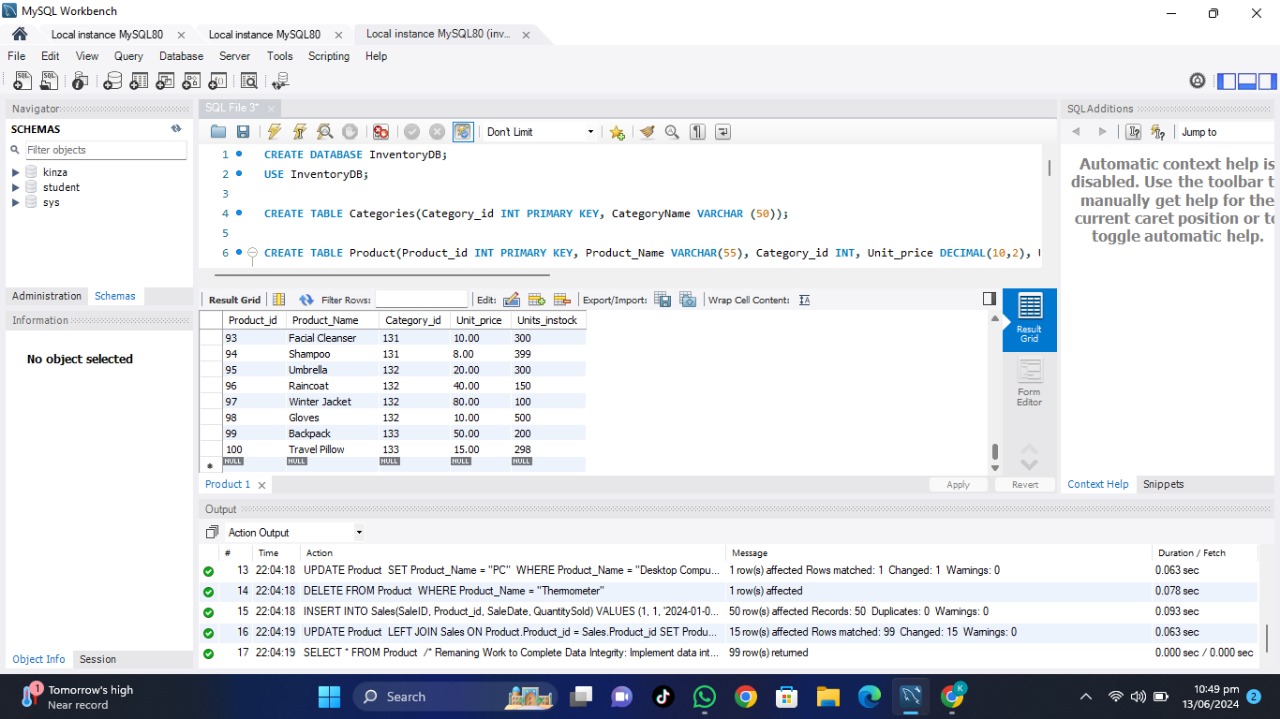
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