



**MYSQL END OF MODULE CHALLENGE ANSWER SHEET**

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| **Assessors** | Joel and Matthew |
| **Moderators** | Joel / Ryan / Matthew |
| **Due Date** | 02 Feb 2024 |
| **Total Mark** | 120 |
| **Pass Mark** | 60 |
| **Student Name** | Zukisa Eric Maza |

**ANSWER SHEET**

**1. CREATING DATABASE AND MANIPULATING DATA (90 Marks)**

1.1

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| CREATE DATABASE FruitMarketDBsql;  USE FruitMarketDBsql; |

[3]

1.2

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| --- |
| CREATE TABLE Suppliers (  SupplierID VARCHAR(10) PRIMARY KEY NOT NULL,  Companyname VARCHAR(30) NOT NULL,  ContactPerson VARCHAR(30) NOT NULL,  ContactNo VARCHAR(13) NOT NULL,  ProductCategory VARCHAR(55)  ); |

[8]

1.3

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| --- |
| CREATE TABLE Products (  ProductID INT NOT NULL,  ProductName VARCHAR(30),  Price DECIMAL(10, 2),  Weight VARCHAR(10),  Stock INT,  SupplierID VARCHAR(10),  FOREIGN KEY(SupplierID) REFERENCES Suppliers(SupplierID)  ); |

[4]

1.4

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| Is One-to-many relationship |

[1]

1.5

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| Is SupplierID |

[1]

1.6

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| INSERT INTO Suppliers  VALUES('SUPP0001', 'Fruit City', 'Themba', '0115062089', 'Fruit'),  ('SUPP0002', 'Vegan Veggie Xpress', 'Chinyere', '0137228936', 'Vegetables'),  ('SUPP0003', 'The Nut House', 'Sam', '0216965133', 'Nuts'),  ('SUPP0004', 'The Lazy Cow', 'Angelo', '0216964157', 'Dairy'); |

[4]

1.7

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| INSERT INTO Products  VALUES('1001', 'Lady Finger Bananas', '17.95', '750 g', '45', 'SUPP0001'),  ('1002', 'Pink Lady Apples', '18.95', '1,5 kg', '15', 'SUPP0001'),  ('1003', 'Red Anjou Pears', '22.99', '1 kg', '24', 'SUPP0001'),  ('1004', 'Cavendish Bananas', '12.65', '900 g', '18', 'SUPP0001'),  ('2001', 'Tenderstem Broccoli', '35.90', '400 g', '8', 'SUPP0002'),  ('2002', 'Portabellini Mushrooms', '18.99', '250 g', '16', 'SUPP0002'),  ('3001', 'Raw Almonds', '99.00', '1 kg', '6', 'SUPP0003'),  ('3002', 'Macaroon Butter', '32.95', '410 g', '9', 'SUPP0003'),  ('3003', 'Organic Coconut Oil', '89.95', '500 ml', '15', 'SUPP0003'),  ('4001', 'Ayrshire Milk', '33.95', '3 l', '23', 'SUPP0004'),  ('4002', 'Simonzola Blue Cheese', '27.65', '270 g', '4', 'SUPP0004'); |

[4]

1.8

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| SELECT p.ProductID, p.ProductName, p.Price, p.Weight, p.Stock, s.ProductCategory as ProductCategory  FROM Products p  JOIN suppliers s ON p.SupplierID = s.SupplierID  WHERE stock < 20  ORDER BY price DESC; |

[6]

1.9

|  |
| --- |
| CREATE VIEW Q9 AS  SELECT ProductID, ProductName, Price, Weight, Stock, (Price \* Stock \* 1.15) AS TotalPrice  FROM Products  WHERE stock < 20  ORDER BY price DESC; |

[6]

1.10

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| CREATE USER ‘ericZukisa\_maza’@’localhost’ IDENTIFIED BY ‘zukisam@za’;  GRANT INSERT ON FruitMarketDBsql.Suppliers TO ‘ericZukisa\_maza’@’localhost’;  SELECT User, Host FROM mysql.user;  DROP USER ‘zukisaproctor\_maza’@’localhost’;  FLUSH PRIVILEGES;  CREATE USER ‘zukisaa\_maza’@’localhost’ IDENTIFIED BY ‘maz@proctor7’;  GRANT INSERT ON FruitMarketDBsql.Suppliers TO ‘zukisaa\_maza’@’localhost’;  FLUSH PRIVILEGES;  REVOKE SELECT ON FruitMarketDBsql.\* FROM ‘zukisaa\_maza’@’localhost’;  GRANT PROCESS ON \*.\* TO ‘zukisaa\_maza’@’localhost’;  GRANT LOCK TABLES ON \*.\* TO ‘zukisaa\_maza’@’localhost’;  FLUSH PRIVILEGES; |

[3]

1.11

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| SHOW TABLES; |

[1]

1.12

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| INSERT INTO FruitMarketDBsql.Suppliers  VALUES ('SUPP006', 'Fruit&Veg', 'Abdu', '0216965111', 'Nuts'); |

[1]

1.13

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| SELECT \* FROM FruitMarketDBsql.Suppliers; |

[2]

1.14

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| CREATE VIEW Q114 AS  SELECT \*  FROM FruitMarketDBsql.Suppliers  WHERE SupplierID = 'SUPP006' OR SupplierID = 'root'; |

[2]

1.15

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| CREATE TABLE NewProducts AS  SELECT \*  FROM Products  WHERE SupplierID = 'SUPP0001' OR SupplierID = 'SUPP0002' OR SupplierID = 'SUPP0003' OR SupplierID = 'SUPP0004'  ORDER BY Stock ASC; |

[3]

1.16

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| CREATE VIEW Q1\_16 AS  SELECT s.CompanyName, s.ContactNo, p.ProductName, p.Price  FROM Suppliers s  JOIN Products p ON s.SupplierID = p.SupplierID; |

[3]

1.17

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| CREATE VIEW Q1\_17 AS  SELECT SUM(Price) AS Total\_Unit\_Price, AVG(Price) AS Average\_Price, COUNT(\*) AS Number\_Of\_Products  FROM Products; |

[6]

1.18

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| CREATE VIEW Q1\_18 AS  SELECT COUNT(DISTINCT SupplierID) AS NumSuppliers  FROM Products; |

[3]

1.19

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| CREATE VIEW Q1\_19 AS  SELECT COUNT(ProductID) AS NumberOfProducts, SupplierID  FROM Products  GROUP BY SupplierID; |

[4]

1.20

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| CREATE VIEW Q1\_20 AS  SELECT COUNT(p.ProductID) AS NumberOfProducts, p.SupplierID, SUM(p.Price \* p.Stock) AS TotalValue  FROM Products p  GROUP BY p.SupplierID; |

[5]

1.21

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| Q1.21  SET AUTOCOMMIT = 0;  UPDATE Products  SET ProductName = 'Cavendish Banana', Price = 15.95, Weight = '1Kg', Stock = 18, SupplierID = 'SUPP0001'  WHERE ProductID = 1004;  ROLLBACK;  COMMIT;  SET AUTOCOMMIT = 1; |

[2]

1.22

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| Q1.22 mysqldump -u root -p FruitMarketDBsql > FruitMarketDBsqlZukisa\_Maza.sql |

[1]

1.23

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| -- Q1.23 Applying ON DELETE CASCADE in a foreign key constraint is to ensure referential integrity and maintain consistency in the database. When a record in the parent table is deleted, the ON DELETE CASCADE option automatically deletes all the related records in the child table.alter |

[2]

1.24

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| Q1.24 Between the two – composite key and candidate key is that a composite key is a key that consists of two or more columns to uniquely identify a record in a table, while a candidate key is a key that can uniquely identify a record in a table. |

[2]

1.25

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| Q1.25 Between the two – SQL and DBMS is that SQL (Structured Query Language) is a language used to communicate with and manipulate databases, while a DBMS (Database Management System) is a software that provides an interface for users to interact with the database, and it also includes the database engine that allows data to be stored, retrieved, and manipulated. In summary, SQL is a language, while a DBMS is a software system. |

[2]

1.26 EER Diagram(Paste screenshot below) [3]



1.27

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| SELECT \*  FROM Products  WHERE Stock IN (23, 18, 16, 15)  ORDER BY Stock DESC  LIMIT 4; |

[3]

1.28

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| SELECT SupplierID, SUM(Price), GROUP\_CONCAT(DISTINCT ProductName)  FROM Products  WHERE SupplierID IN ('SUPP0003', 'SUPP0002', 'SUPP0004', 'SUPP0001')  GROUP BY SupplierID  ORDER BY CASE SupplierID  WHEN 'SUPP0003' THEN 1  WHEN 'SUPP0002' THEN 2  WHEN 'SUPP0004' THEN 3  WHEN 'SUPP0001' THEN 4  ELSE 5  END; |

[5]

**QUESTION 2 NORMALISATION (30 Marks)**

2.1 First Normal Form (9 marks)

2.2 Second Normal Form (10 Marks)

2.3 Third Normal Form (11 Marks)

**GRAND TOTAL: 120 MARKS**