Fundamentals of Data Management

2019HS2 | 101624964 | Jimmy Trac

Pass Task 9.1.1

a)

Transaction T1 vs Transaction T2

Transaction T1	Transaction T2
SELECT * FROM Products WHERE ProductNumber=1; SELECT * FROM Orders WHERE OrderNumber=945; SELECT * FROM Order_Details WHERE OrderNumber=945;	UPDATE Products SET QuantityOnHand= QuantityOnHand-2 WHERE ProductNumber=1; INSERT INTO Orders (OrderNumber, OrderDate, ShipDate, CustomerID, EmployeeID) VALUES (945, '2015-09-04', '2015-09-05', 1004, 701); INSERT INTO Order_Details (OrderNumber, ProductNumber, QuotedPrice, QuantityOrdered) VALUES (945, 1, 1200.00, 2);

From the P9.1.1 Worksheet

T1

Transaction T1 simply reads the tables modified by Transaction T2. T1 does not influence the table in any way, and therefore T1 can be issued as three separate transactions or a single transaction.

T2

Transaction T2 must be a transaction due to the ACID principle of RDBMS. Notably, the 'A' and 'D' in ACID: Atomicity and Durability, refer to the following:

- Atomicity
    - The transaction itself is a unit of work: it alters the tables it requires and places the correct order, retaining integrity and limiting all the commands within the transaction to do only one thing.
- Durability
    - The database must be coherent and maintain integrity at all times, before, and after, a transaction. If T2 was not a transaction, the database would be inconsistent, which would cause all manner of problems.