Part 58 – Transaction ACID Test

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In this session we will learn

- Transaction ACID Test

Prerequisite:
Part 57 - Transactions in SQL Server

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Transaction ACID Test

A transaction is a group of database commands that are treated as a single unit. A successful transaction must pass the "ACID" test, that is, it must be

Atomic - All statements in the transaction either completed successfully or they were all rolled back. The task that the set of operations represents is either accomplished or not, but in any case not left half-done.

Consistent – All data touched by the transaction is left in a logically consistent state. For example, if stock available numbers are decremented from **tblProductTable**, then, there has to be a related entry in **tblProductSales** table. The inventory can't just disappear.

tblProduct

ProductId	Name	UnitPrice	QtyAvailable
1	Laptops	2340	90
2	Desktops	3467	50

tblProductSales

ProductSalesId	ProductId	QuantitySold
1	1	10
2	1	10

```
Create Procedure spUpdateInventory_and_Sell
as
Begin
 Begin Try
  Begin Transaction
   Update tblProduct
   set QtyAvailable = (QtyAvailable - 10)
   where ProductId = 1

   Insert into tblProductSales values(3,1,10)
  Commit Transaction
 End Try
 Begin Catch
   Rollback Transaction
 End Catch
End
```

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Transaction ACID Test

Isolated : The transaction must affect data without interfering with other concurrent transactions, or being interfered with by them. This prevents transactions from making changes to data based on uncommitted information, for example changes to a record that are subsequently rolled back. Most databases use locking to maintain transaction isolation.

Durable : Once a change is made, it is permanent. If a system error or power failure occurs before a set of commands is complete, those commands are undone and the data is restored to its original state once the system begins running again.

Next Session : Isolation Levels in SQL Server

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Additional Resources

- ## PRAGIM Home Page:

  - www.PragimTech.com

- ## Resources:

  - ASP.NET Interview Questions
  - www.VenkatASPInterview.Blogspot.com
  - C# Interview Questions
  - www.VenkatCSharpInterview.Blogspot.com
  - SQL Server Interview Questions
  - www.venkatsqlinterview.Blogspot.com

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