In this session we will learn

- What is a transaction
- The problems that might arise when transactions are run concurrently
- The different transaction isolation levels provided by SQL Server to address concurrency side effects

Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series
http://www.youtube.com/user/kudvenkat/playlists

Suggested Videos
Part 67 - Alter database table columns without dropping table
Part 68 - Optional parameters in sql server stored procedures
Part 69 - Merge in SQL Server

http://csharp-video-tutorials.blogspot.com

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SQL Server Concurrent Transactions

What is a transaction

A transaction is a group of commands that change the data stored in a database. A transaction, is treated as a single unit of work

Id	AccountName	Balance
1	Mark	1000
2	Mary	1000

```
-- Transfer $100 from Mark to Mary Account
BEGIN TRY
    BEGIN TRANSACTION
        UPDATE Accounts SET Balance = Balance - 100 WHERE Id = 1
        UPDATE Accounts SET Balance = Balance + 100 WHERE Id = 2
    COMMIT TRANSACTION
    PRINT 'Transaction Committed'
END TRY
BEGIN CATCH
    ROLLBACK TRANSACTION
    PRINT 'Transaction Rolled back'
END CATCH
```

SQL Server Concurrent Transactions

Common concurrency problems
- **Dirty Reads**
- **Lost Updates**
- **Nonrepeatable Reads**
- **Phantom Reads**

SQL Server Transaction Isolation Levels
- **Read Uncommitted**
- **Read Committed**
- **Repeatable Read**
- **Snapshot**
- **Serializable**

Isolation Level	Dirty Reads	Lost Update	Nonrepeatable Reads	Phantom Reads
Read Uncommitted	Yes	Yes	Yes	Yes
Read Committed	No	Yes	Yes	Yes
Repeatable Read	No	No	No	Yes
Snapshot	No	No	No	No
Serializable	No	No	No	No

Upcoming Videos : Concurrency problems in detail with examples

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Additional Resources

PRAGIM Home Page:

www.PragimTech.com

Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists
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Code samples and text version of all the videos on my blog
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