Fact Pattern, Master/Child Patterns

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Fact Table Pattern

- **Used to update metrics / measurements in data warehouse**

- **Pros**
  - Common pattern
  - Easy to implement

- **Cons**
  - Can require many lookups
  - Updates not always simple

Master / Child (Basic)

- **A master (parent) package which coordinates the execution of other packages (children)**

- **Pros**
  - Simple to implement

- **Cons**
  - Not always efficient when many packages are involved
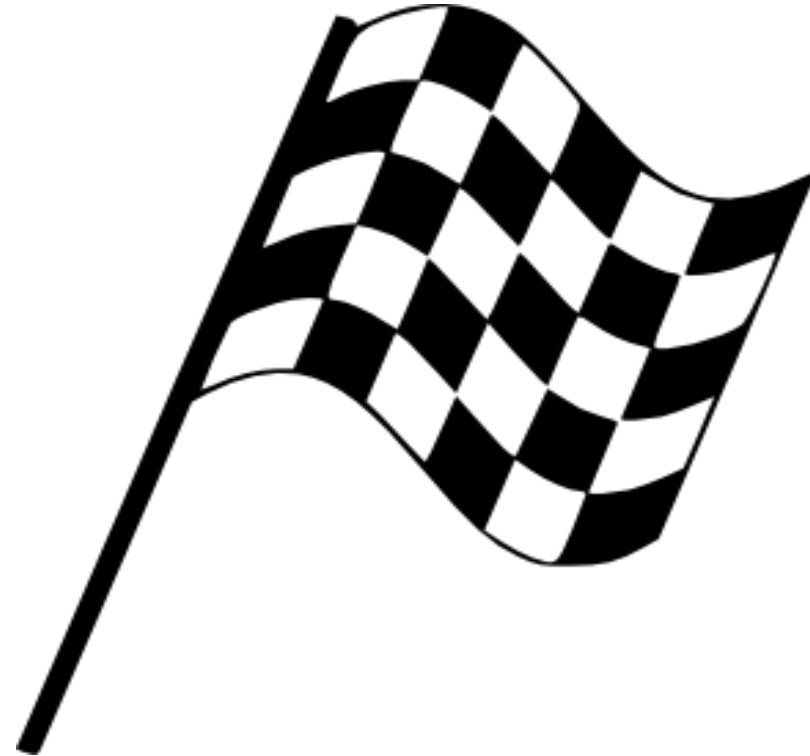
Master / Child (Parameters)

- **Passing values from master package to children**

- **Pros**
  - SQL Server 2012 / 2014 project deployment mode make it very easy to pass values
  - Easy to reuse values across multiple child packages

- **Cons**
  - In package deployment mode, or SQL Server 2008R2 and previous requires the more complex configurations

Master / Child (Load Balanced)

- **Uses a table to drive package execution**

- **Pros**
  - Easy to alter execution – just update a table
  - Can easily balance parallel execution of packages

- **Cons**
  - Needs many variables
  - Requires some manual effort and monitoring to effectively balance

Summary

- **Design Patterns Defined**

- **Software Requirements, module setup**

- **13 Design Patterns**
  - Basic Patterns
  - Advanced Patterns
  - Fact Pattern
  - Master / Child Patterns

Choosing a Pattern

- **Truncate and Load**
  - Low to moderate number of rows
  - No requirement to track changes
  - Good for staging tables

- **SCD Wizard, Type 1 & 2**
  - Very small number of rows (< 2000)
  - Packages that won't change
  - There is almost always a better pattern

Choosing a Pattern

- **Set Based Updates, Type 1 & 2**
    - Scales well
    - Good for limited number of columns
    - Extra ram required
- **Hashbytes**
    - Scales well
    - Good for large number of columns
    - Source systems needs to implement a form of the Hashbytes function
- **Change Data Capture**
    - Excellent pattern – SQL Server tells you all changes
    - Data source must be SQL Server

Choosing a Pattern

- **Merge**
  - Good for very simple ETL when no monitoring is required
- **Date Based**
  - Limits number of rows read in
  - Can be combined with other patterns
- **Fact Table Pattern**
- **Master / Child**
  - Basic
  - Passing Parameters
  - Load Balancing

Thanks for watching