

# Identify Poorly Performing Query Plan Operators

---



**Pinal Dave**

SQL SERVER PERFORMANCE TUNING EXPERT

<https://blog.sqlauthority.com>



# Agenda



**Query execution plan**

**Interpretation of query plans**

**Slow performing operators**

- Root cause
- Resolutions

**Demos**



“A **good** plan, violently executed now is **better** than a **perfect** plan tomorrow.”

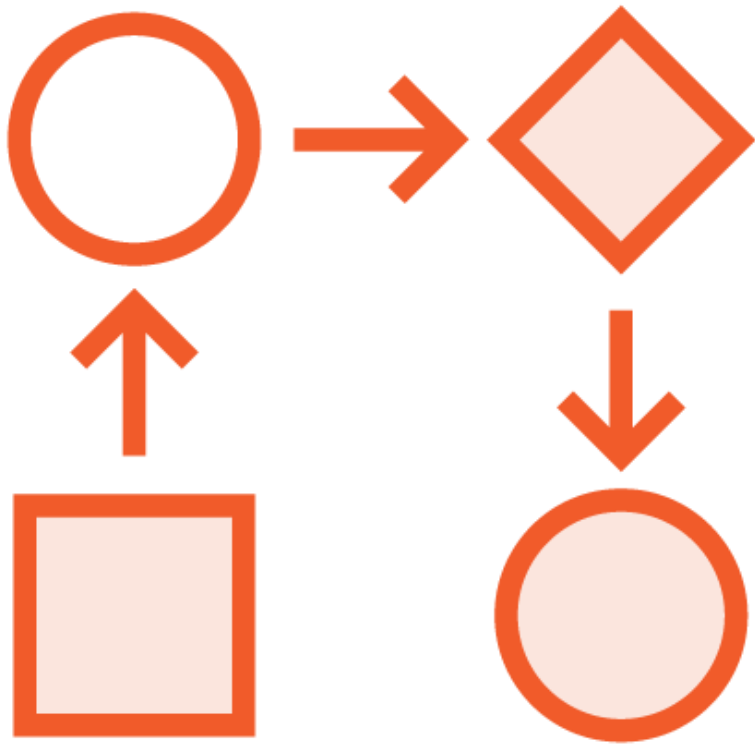
George Patton



# What is a query execution plan?

A query execution plan is a visual representation of operations performed by SQL Server engine to return the valid data for the query.





## Interpreting query execution plan

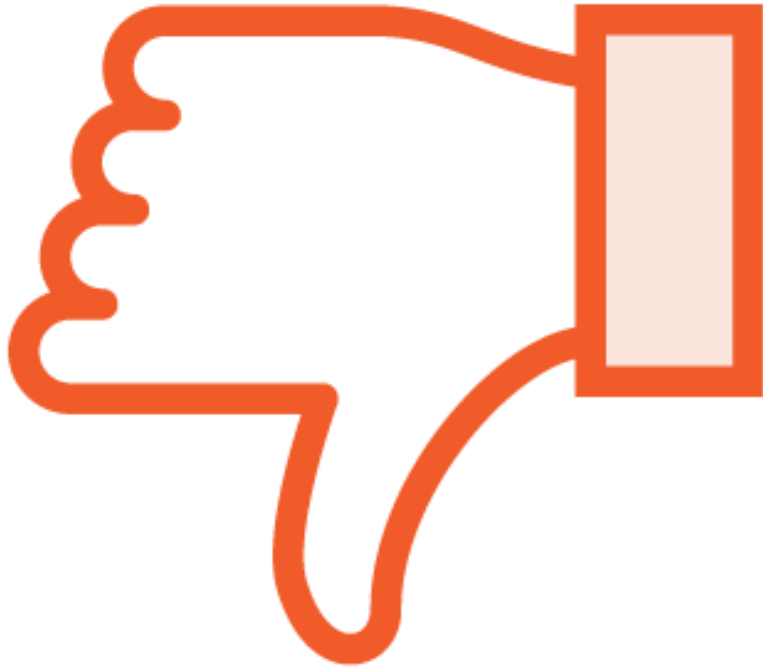
- Read it from right-to-left
- Operator costs
- Data flow
- Warnings
- Suggestions / Hints
- Query cost in batch
- Statistics IO and Statistics TIME

# Demo



## Interpreting execution plans





## Slow performing operators

- Scan (vs. Seek)
- Parallelism
- Implicit conversion

# Demo



## Slow performing operators

- Scan
- Parallelism
- Implicit conversion





# Summary



Always check query execution plan before deploying query on a production environment

The best way to overcome poorly performing query plan operators is to re-write queries and use efficient indexes

