

Querying Dynamics GP Data Using SQL Server Part 2



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INTRODUCTIONS



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Senior Managing Consultant

- More than 27 years experience
- Microsoft MVP



AGENDA

- Understanding GP SQL Objects Available
- The SELECT Statement in a Query
- Helpful Queries
- Using SSRS Report Builder to Create Queries
- Q&A



Understanding GP SQL Objects Available



How to Determine Tables

- GP Table Schema
- Dictionaries
- Series

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Table Types

Main Table Type	Physical Name Abbreviation	Technical Name Abbreviation
Master	000–099	MSTR
Work	100–199	WORK
Open	200–299	OPEN
History	300–399	HIST
Setup	400–499	SETP
Temp	500–599	TEMP
Relation	600–699	REL
Report Options	700–799	ROPT

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Table Names

- Display – Name that is easiest to understand, like RM Customer MSTR
- Physical – Name used for the physical table, like RM00101
- Technical – Name used in Report Writer & in Alert Messages, like RM_CUST_MSTR



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How to Understand a Physical Table Name

Sample abbreviations for module

GL – General Ledger	CM – Bank Reconciliation
RM – Receivables Management	PM – Payables Management
POP – Purchase Order Processing	SOP – Sales Order Processing
INV – Invoicing	IV – Inventory
UPR – US Payroll	PA – Project Accounting
BOM – Bill of Materials	AAG – Analytical Accounting
MOP – MFG Order Processing	BE – HR Benefits



How to Understand a Physical Table Name

- Table numbers
- Examples
 - RM00101 – Customer Master
 - PM20000 – PM Transaction OPEN File
 - GL30000 – Account Transaction History






The Select Statement

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THE SELECT STATEMENT

- Used to view data stored in a table or view
- Cannot update or delete data
- Can be used to create data in a new table

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THE SELECT STATEMENT

- A simple example
- This query displays customer master data from a table
- `SELECT * FROM RM00101`
 - Always start with `SELECT`
 - Use `*` to get all columns in a table

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THE SELECT STATEMENT

- Selecting specific columns
- `SELECT CUSTNMBR, CUSTNAME FROM RM00101`
- Renaming columns
- `SELECT CUSTNMBR as [CUSTOMER ID] FROM RM00101`
- Use brackets when a name includes a space
- Note: “as” is not required but aids in readability

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THE SELECT STATEMENT

- Calculated columns
- SELECT DEBITAMT – CRDTAMNT as NET
FROM GL20000
- SELECT XTNDPRCE – EXTDCOST as
MARGIN FROM SOP30300

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THE SELECT STATEMENT

- The Where Clause
- Defines conditions for retrieving data
- The column used for the condition does not
have to be selected
- Example
 - SELECT [VENDOR ID], [VENDOR NAME] FROM
VENDORS WHERE [Vendor Class ID] = 'USA-US-I'

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THE SELECT STATEMENT



- Ordering the data
- SQL Server data is not sorted by default
- You can sort by any column
- Select [Account Number], [Account Description] Order By [Account Description]
- Add DESC to sort in descending order
- Select [Item Number], [Qty on Hand] From ItemQuantities Order by [Qty On Hand] Desc

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THE SELECT STATEMENT



- Joining tables
- Multiple tables can be joined
- Join types
 - INNER – There must be common data between the tables
 - OUTER – Only data from one table is required
 - FULL JOIN – Data from both tables are combined
- You can use aliases for the tables being used

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THE SELECT STATEMENT



- Join examples
- Select hdr.SOPTYPE, hdr.SOPNUMBE, hdr.CUSTNMBR, det.ITEMNMBR, det.QUANTITY From SOP10100 hdr INNER JOIN SOP10200 det
- Select ee.[Employee Number], ee.[Last Name], chk.[Check Number] From Employees ee LEFT OUTER JOIN UPR30100 chk on ee.[Employee Number] = chk.EMPLOYID

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THE SELECT STATEMENT



- Grouping data
- Used to get aggregate values, like sums
- Only include columns that will be grouped or aggregated
- Example
 - Select [Customer Number], [Customer Name], Sum([Sales Amount]) as TotalSales From ReceivablesTransactions Group by [Customer Number]

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THE SELECT STATEMENT



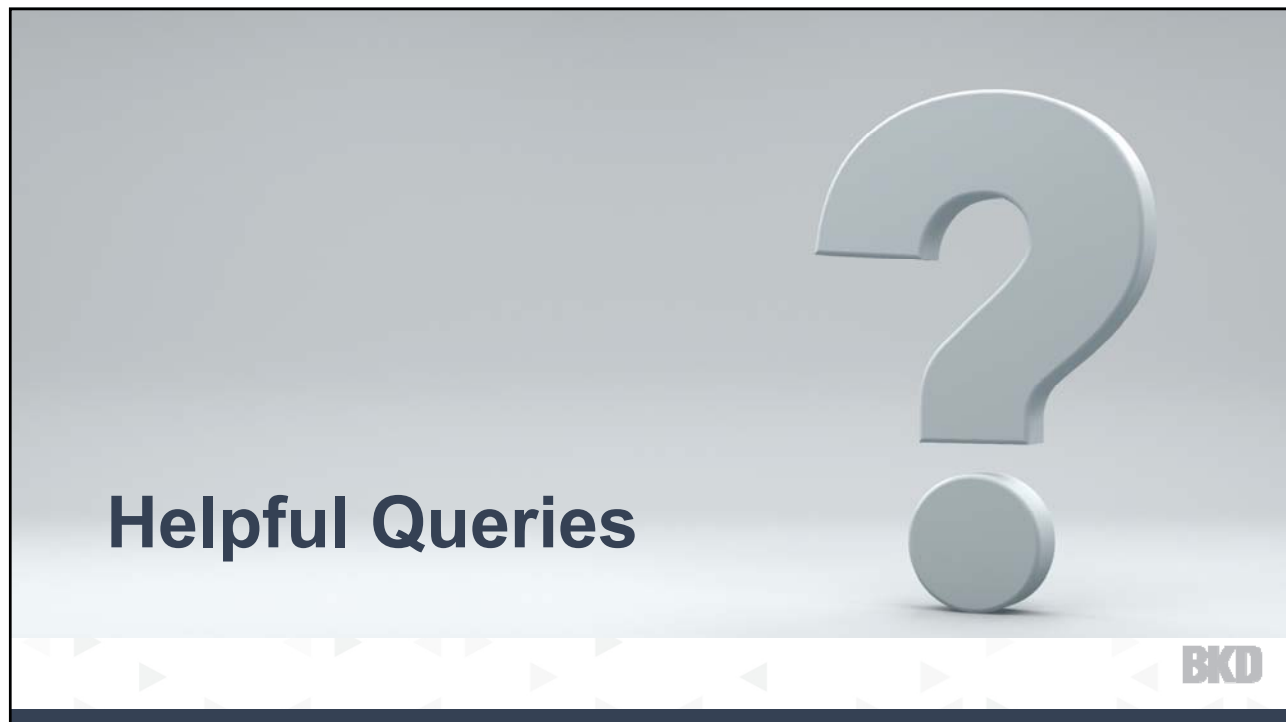
- Using the Having Operator
- Typically used with the Group By clause
- Used to add conditions
- Example
 - Select [Customer Number], Sum([Sales Amount]) as TotalSales From ReceivablesTransactions Group By [Customer Number] Having Sum([Sales Amount]) > 10000

THE SELECT STATEMENT


Order of Operation

Order	Clause	Function
1	From	Choose & join tables to get base data
2	Where	Filters the base data
3	Group By	Aggregates the base data
4	Having	Filters the aggregated data
5	Select	Returns the final data
6	Order By	Sorts the final data
7	Limit	Limits the returned data to a row count

<https://www.periscopedata.com/blog/sql-query-order-of-operations>



THE SELECT STATEMENT



- Searching for records containing a value
- Select [column list] where [column] like '%value%'
- Select [Customer Number] From Customers Where [Customer Class] Like '%USA%'

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HELPFUL QUERIES



- Restricting to a Group of Items
- Select [Vendor ID], [Document Number], [Document Type] From PayablesTransactions Where [Document Type] IN ('Invoice', 'Payment')

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THE SELECT STATEMENT



- Top N
- Gets a limited number of records
- Select Top 10 [Customer Name], Sum([Sales Amount]) as TotalSales From ReceivablesTransactions Group By [Customer Name] Order by Sum([Sales Amount]) desc

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THE SELECT STATEMENT



- Conditions
- CASE expression
- Select [SOP Number], [SOP Type], CASE [SOP Type] When 'Invoice' Then [Subtotal] Else - 1*[Subtotal] End as SaleAmount from SalesTransactions Where [SOP Type] In ('Invoice', 'Return')

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Using Report Builder for Querying Data

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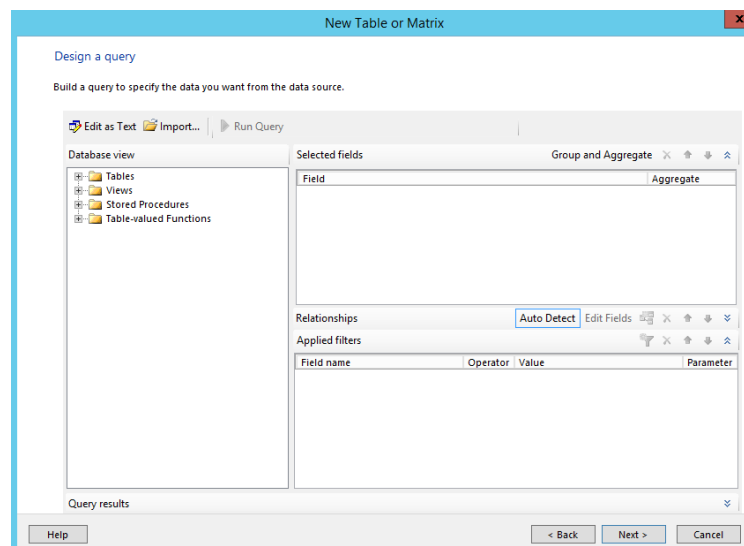
SSRS REPORT BUILDER

- Easier tool for querying data
- Includes a visual tool
- SQL code can be viewed & adjusted
- Query can be used to build a report

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SSRS REPORT BUILDER

SSRS Query Designer



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SSRS REPORT BUILDER

Query Example

New Table or Matrix

Design a query

Build a query to specify the data you want from the data source.

Edit as Text Import... Run Query

Database view

- AccountTransactions
 - Journal Entry
 - Series
 - TRX Date
 - Account Number
 - Account Description
 - Debit Amount
 - Credit Amount
 - Account Category Number
 - Account Description from

Selected fields

Field	Aggregate
Journal Entry	(none)
Account Number	(none)

Relationships: Auto Detect

Applied filters

Field name	Operator	Value	Parameter
Document Status	is	Work	<input type="checkbox"/>

Query results

Journal Entry	Account Number	Debit Amount	Credit Amount
1543	000-1100-00	0.00000	250.00000
1546	000-1100-00	0.00000	50.00000
1543	000-1100-00	250.00000	0.00000
1544	000-1100-00	0.00000	500.00000
3327	000-1100-00	0.00000	3615.11000
3328	000-1100-00	0.00000	99927.81000
3453	000-1100-00	0.00000	6501.78000

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SSRS REPORT BUILDER

Grouping Data

New Table or Matrix

Arrange fields

Arrange fields to group data in rows, columns, or both, and choose values to display. Data expands across the page in column groups and down the page in row groups. Use functions such as Sum, Avg, and Count on the fields in the Values box.

Available fields

- Journal_Entry
- Account_Number
- Debit_Amount
- Credit_Amount

Column groups

Row groups

- Journal_Entry

Values

- Account_Number
- Sum(Debit_Amount)
- Sum(Credit_Amount)

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Thank You!

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