



SQL for the Skittish

Salvage your sanity beyond SELECT

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So what are we talkin' about here?

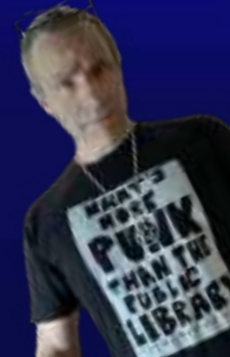
AKA - Should I bail out of this talk for something else?

- Directed at folks who are new or new-ish to T-SQL
 - Especially to queries that will write to the database
- Tips and tactics for safer queries
- Topics are ordered from easiest to more involved
- Our goals:
 - Calm coding and quiet queries
 - You feel better and safer
 - Two inches taller

Hello

My name is Dan.

- I like white text on dark backgrounds
- Useful Polaris SQL website and GitLab repo
- Almost 30 years working in and/or with libraries
 - Polaris beta tester
- Currently an ILS Administrator and SQL Hacker for LS&S
- Your little free Cyberpunk Librarian
- Mastodon – @cyberpunklibrarian@hackers.town



A Note on Notes

- Feel free to take notes but...
 - I've collected everything on my website
 - Slide deck
 - Outline
 - More info
 - Recording (after editing)
-

cyberpunklibrarian.com/iug2023

Take Your Time



Take your time

Slow down, Turbo.

- You are writing a query
- The operative word is *writing*
 - Writing takes time
 - Writing means editing
 - Writing means drafts
- Do everything possible to never code in a hurry
- Take breaks because SQL is stupid and it leads to brain fog
- Document *everything* and comment your code

SQL executes backwards - the first thing you write is often the last thing it does

Documenting your changes allows you to track down the methods you used, seek out reasons for something that's happening, and lets others know what's going on

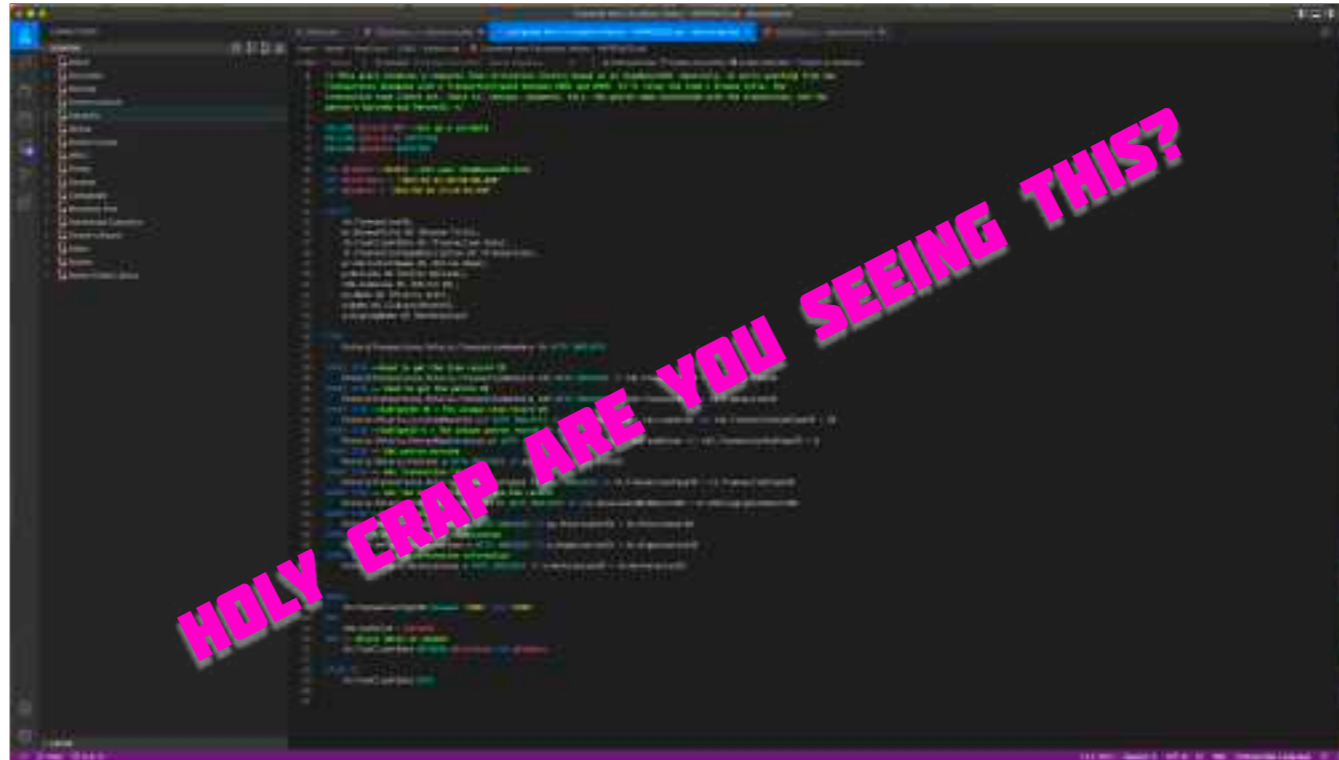
Eschew SSMS. Embrace ADS.



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Azure Data Studio freakin' rocks!

- Faster
- Cross platform (Windows, macOS, Linux)
- Themes!



Notice the first four lines at the top are commented out but that text defines and described what the query does. It also helps you find this query later on.

Eschew SSMS. Embrace ADS.

Did I mention that Azure Data Studio freakin' rocks?

- Faster
- Cross platform (Windows, macOS, Linux)
- Themes!
- Git integration
- Easy export to CSV, Excel, JSON, Markdown, and XML
- Helpful extensions



I encourage you to take an hour and learn basic git. Remember what I said about documenting your changes? That's exactly what git does.

Not only does it export to CSV and Excel, ADS does a *better* job than SSMS

Extensions that help with prettying the format of your query, admin pack allows for more SSMS-like functionality, and more

Disconnect and Comment



If you understand this, you might be as old as I am...

Disconnect and Comment

It's better than Like and Subscribe.

- Could this be a potentially dangerous query?
- Fraught with the possibilities of data loss?
 - Then why are you connected to the database server?
- Can't execute a query if the operator is commented out
 - --UPDATE or --DELETE can save you from a lot of fear

Comment out entire lines of code with `/* */`

We are here to read, never to write



We are here to read, never to write

RO RO RO your boat...

- Create a read-only user for yourself and others
 - Can't DELETE, INSERT, or UPDATE anything
 - Most of your queries are probably SELECT based anyway

In Linux, a normal user can do almost anything they want... except change the system. That requires elevated permissions.

But if you can do what you need most of the time without the elevated permissions, that's safer!

Use your testing/training server(s)



Use your testing/training server(s)

Data isn't real. Or at least, *that* data isn't.

- For a risky query, there's no reason to act upon live data at the outset
- It's like Diet Polaris: Close to the real thing but completely different
 - Without the weird aftertaste
- Contact your Site Manager to set up regular syncing from your production server

Always start with SELECT



Always start with SELECT

SELECT yourself before you wreck yourself.

- Before running an UPDATE or DELETE, write the query as a SELECT
 - With all of the clauses (WHERE, AND, OR, NOT, etc) you'll use in your UPDATE or DELETE
- Check those rows and the number of rows
 - Does the result set make sense?
 - Does the number of rows make sense?

Precise clauses are your friends



Precise clauses are your friends

You, you, not you, you, not you, hell no not you, you, and you.

- Use your clauses to make certain you're targeting only the rows you want
- In other words - try and design your query so it *can't* affect anything else

```
1 DELETE FROM
2   Polaris.Polaris.ItemCheckouts
3 WHERE
4   PatronID = 3141
5 AND
6   ItemRecordID = 2718
7 AND
8   CreatorID = 42
```

The ItemCheckouts table doesn't have a primary key, but these three clauses will make sure you can only target a single row.

No need to COMMIT right away



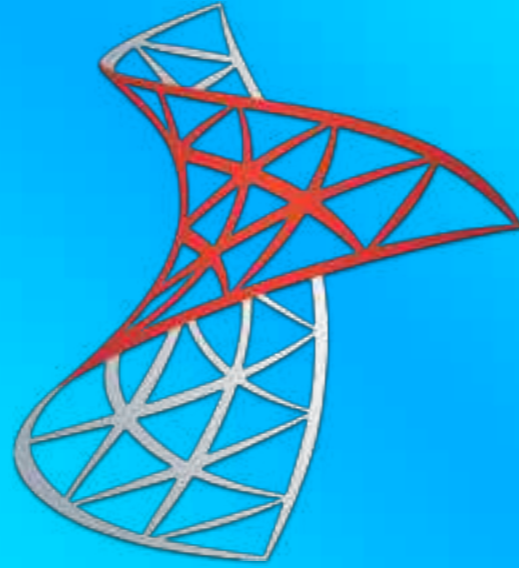
No need to COMMIT right away

⚠️ But there's a BIG caveat ⚠️

- BEGIN TRAN - stages your query before actually executing it
- Allows for a "dry run" to see what the results may be
- Like what you see?
 - COMMIT
- Wait, that's not right!
 - ROLLBACK
- The aforementioned **BIG** caveat

🔒 THIS LOCKS YOUR TABLE 🔒

Express yourself



Express yourself

Mining data? No, this data is mine.

- SQL Server Express
 - It's free
 - Works exactly the same as regular SQL Server
 - Run it on your computer
- Pull down copies of tables to your own computer
 - Make changes without fear
 - If anything goes sideways, who cares?
 - Blow away the table and pull down a new copy

There will be instructions on the website that shows how this is done.

Ask artificial intelligence!



Ask artificial intelligence!

Riding the bleeding edge

- The Polaris database is well constructed, standardized, and (for the most part) predictable
- Which makes it easier to ask an AI about it
- Keep in mind, ChatGPT can and will confidently give you the wrong information
- But maybe it gets you part (or most) of the way there

Ask genuine intelligence!



Ask genuine intelligence!

“We’re what you call ‘experts.’” ~Adam Savage, *Mythbusters*

- 🗨️ Join us on Discord!
- 📖 We’re librarians - Answering questions is kind of our thing!
- ❓ Ask questions!
- 🏠 Bounce ideas!
- 🗣️ Have a rant!

There will be a Discord invite link on the website

Thank You!

Questions?

Notes & Resources

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