

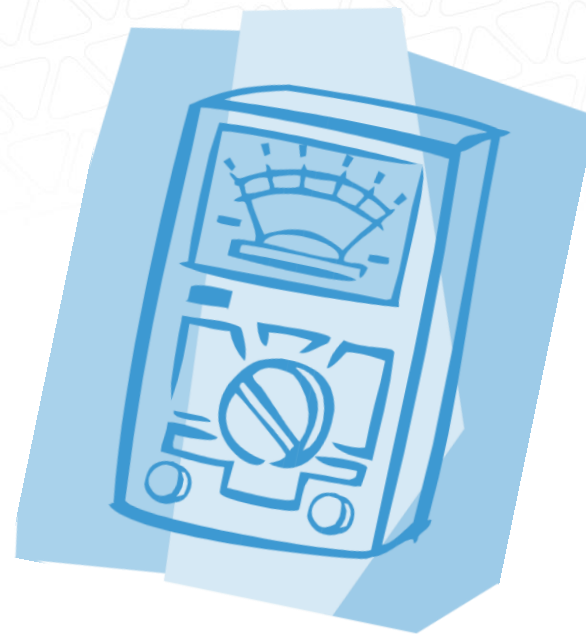
Silent Killers Lurking in Your Schema

Mickey Stuewe - MCP
Database Architect



Your Background

- DBA
- Database Developer
- Programmer
- Manager
- Just Checking Things Out



Objectives

- Data Types
- Smart Keys
- Naming
- Named Value Pairs
- Nullability
- Constraints
- Indexes
- Hard Coded Lists
- Minimal Auditing

Data Types

Data types can be data hogs

- Affects range of possible values
- Affects storage
- Affects behavior of functions

Data Types

	TINYINT	SMALLINT	INT	BIGINT
Size	1 Byte	2 Bytes	4 Bytes	8 Bytes
Range	0 to 255	-32,768 to 32,768	-2,147,483,648 to 2,147,483,648	-2^{63} to 2^{63}

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Bad Use	<ul style="list-style-type: none">• Year• PK of trans data	<ul style="list-style-type: none">• Age• PK of trans data	<ul style="list-style-type: none">• Number of dependents• PK of "click data"	<ul style="list-style-type: none">• Birth month• PK for a status tbl

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Functions	Demo (len(), DataLength)		

Data Types

- Homework:
 - Compare date data types

Smart Keys

Smart keys, why they're not so smart

Pro

- Easy to decipher
- Multiple pieces of information in one column

Con

- Fragmented indexes
- Can get out of hand
- Breaks Codd's rules

Naming

It shouldn't be a box of chocolates

- Generic columns named Column1...n
- Abbreviations
- Bit columns: Active vs isActive

Named Value Pairs

Long distance dating

Pro

- Easy to insert

Con

- Varchar only
- Breaks Codd's rules
- Hard for reporting
- Maintenance
- Lack of Foreign Keys

Nullability

To NULL, or not to NULL that is the question

- Has a purpose – represents “no data”
- Column of type BIT should not be nullable
- Be careful with ISNULL function

Constraints

Constrain the data, she's goanna blow!

- Protect against bad data
 - Check Constraints
 - Foreign Key Constraints
 - Unique Constraints

Indexes

So which phone number should I call?

- Not all Primary Keys should be clustered Indexes
- Add Indexes to heavily used columns
- Have a good balance of indexes

Resource: JasonStrate.com

Hard Coded Lists

Danger Will Robins!

- Unable to change them efficiently
- Unable to validate against them outside of application or stored proc
- Hard to maintain over time

Minimal Auditing

Who's on first. When's on second.

- Can provide quick insight as to when data was changed
- Can provide insight to bugs

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