Some Bugs are Better than Others

Defensive Programming Tips and Tricks

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The Seven Types of Bugs

1. Syntax Errors
2. Compile Errors
3. Misunderstood Requirements (before writing code)
4. Failing Tests
5. Runtime Errors
6. Misunderstood Requirements (after writing code)
7. Logic Errors

Quick, Easy, and Cheap

Slow, Hard, and Expensive

Loading Context: The Plate Spinning Metaphor

Note: To keep the file size down for the slide deck, I'm omitting the animated .gif I used during the presentation and providing a URL to the original YouTube video:
https://www.youtube.com/watch?v=k44uoVm0lPI&t=225s

Turn Runtime Errors into Compile Errors

1. Use `Option Explicit`
2. Avoid `Variant` and `Object` types
3. Use constants in place of literals
4. Avoid "stringly-typed" code
5. Use early binding

Turn Logic Errors into Runtime Errors

1. Guard Clauses

2. Double Checks

3. Avoid Excessive Error Handling

4. Throw Errors via Case Else

5. Use an "Unset" Enum

Automated Double Checks

1. Test-Driven Development
2. Different Algorithms
3. Third-Party Code
4. Multiple Programming Languages
5. Data Validity Checks

Questions?

Links and Resources:

nolongerset.com/devcon-2023-bugs/