

Database Connectivity and Access

Exceptions

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## Exception Handling

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- ▶ What should a user see?
  - ▶ Enough to fix or report a problem
  - ▶ NOT enough to gain schema information
- ▶ What should be handled?
  - ▶ Everything!
  - ▶ Never presume that "a user will never see your message"

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2

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## Exception Handling

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- ▶ **ALL** exceptions should be trapped
- ▶ Exception information and all other available information should be recorded to server log file
  - ▶ For debugging and monitoring
  - ▶ For knowing location of error
  - ▶ For knowing cause of error
  - ▶ Enough information for you or others to fix the error
- ▶ Minimal information should be passed up the chain
- ▶ Notify an administrator?

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3

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## Typical Exception Handling Process

1. We set up a try/catch block
2. We catch some Exception
3. We are now in control
  - ▶ Problem is over—maybe
  - ▶ Write any code you want
    - ▶ Just ignore it—bad
    - ▶ Try to clean up the mess—noble
    - ▶ Throw another exception—common
    - ▶ Crash the app—desperate



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## Custom Exceptions

- ▶ When catching SQL (or other) exceptions, throw a custom exception
  - ▶ Write info out to a log file (maybe)
  - ▶ Create a vague message attribute
- ▶ Who handles the exception?
  - ▶ Could pass from data layer all the way up to presentation layer
  - ▶ Could throw new custom exception at each level
    - ▶ Common with web services and large enterprise apps



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5

## Log Files

- ▶ Where should error logs be written?
  - ▶ “What happens on the server stays on the server”!
  - ▶ Notification might be sent to an administrator
- ▶ When should they be written?
  - ▶ Public constructor called by whoever catches the exception
  - ▶ Private method called within the exception constructor
- ▶ Who catches custom exception?
  - ▶ No different than the original exception—make sure it's not the user



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## Log Files

### ▶ What should be written?

- ▶ SQL statement and parameters
- ▶ Location in code
- ▶ Date and Time
- ▶ Stack trace if possible
- ▶ User id if possible
- ▶ Other status variables if possible

### ▶ What should not be written?

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