

I've just inherited 1,000,000 lines of code...
now what?

Michael Rozlog

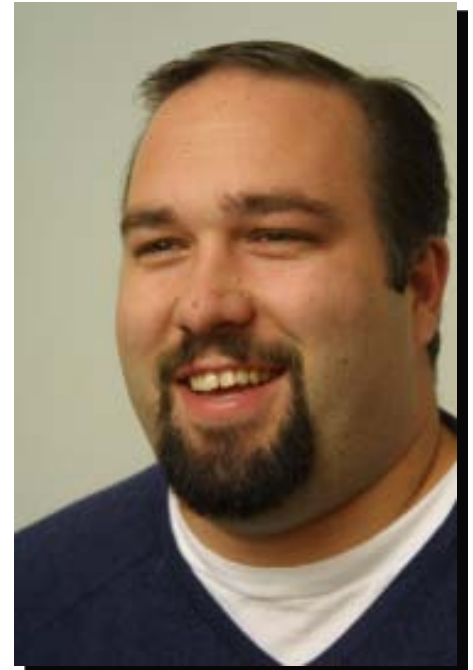
Product Manager, RAD Studio, Delphi for PHP, and 3rd Rail



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TECHNOLOGIES.

Who is Mike?

- You just said that
 - Product Manager – RAD Studio, Delphi for PHP, 3rd Rail
- Responsibilities
 - Helping to build the developer tools that help developers develop world class applications
- Current research areas
 - Software Archeology
 - Situational Applications
 - Pushing the RIEA approach – MS's Software+Services
- Prior Position at Borland
 - Chief Technical Architect – Borland
 - Creator of Mastering JBuilder – Wiley Books



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Agenda

- What is software Archeology?
- The process: Software Archeology?
- Demonstration
- Q&A

Current state of IT around the world

- Down economy means less new projects, but more maintenance and updating existing software
- However...
- The need for new or modernizing applications is not decreasing or going away
- U.S. had the lowest C/S graduation in 2007
 - Qualified individuals are not filling the market
- Outsourcing is not always a solution on the table?
 - Not allowed or applicable
 - Bigger issues around this area, latest data shows 50% for non-government organizations
- Knowledge transfer gap

Questions to you...

- How many have inherited code in the last 6 months that you are now responsible for?
- How many have either sent off or received outsourced projects in the last year?
- How many find it hard to retain and keep skilled employees?
- How many have new members on there team in the last 3 months?

What is Software Archeology?



What is Software Archeology?

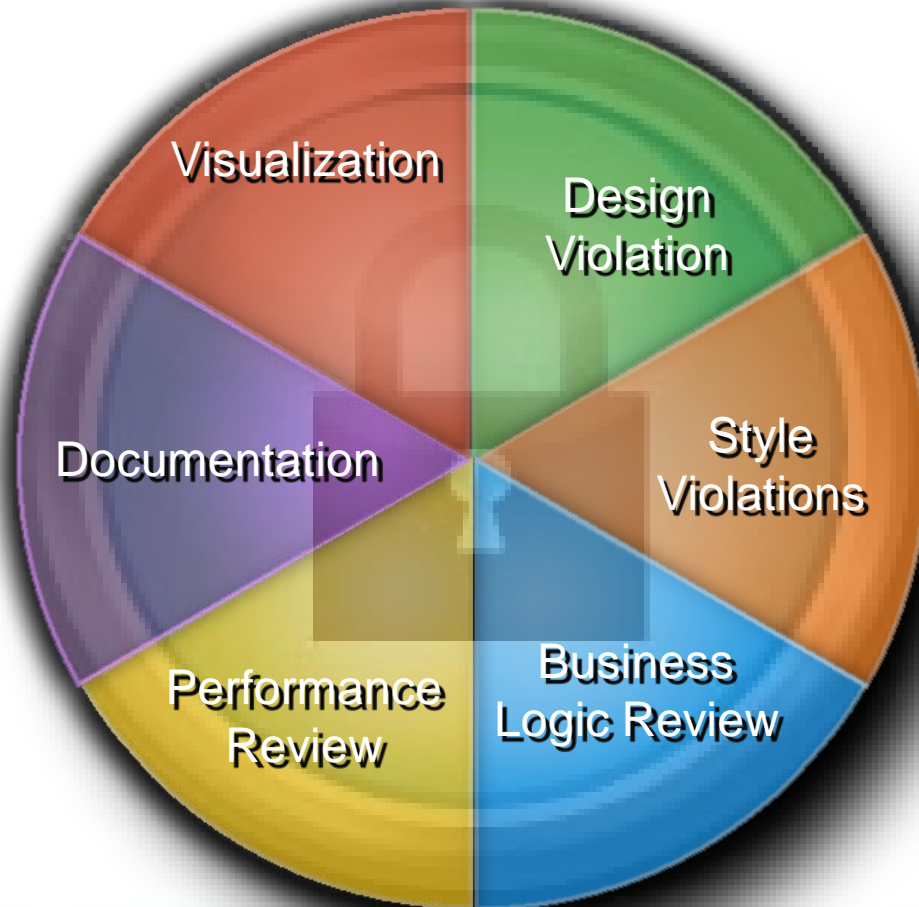
- A process for approaching unknown software that we have become responsible for...
- An approach to unraveling the complexities of an existing application
- The analysis of past applications to learn and understand why it was done that way



Software Archeology



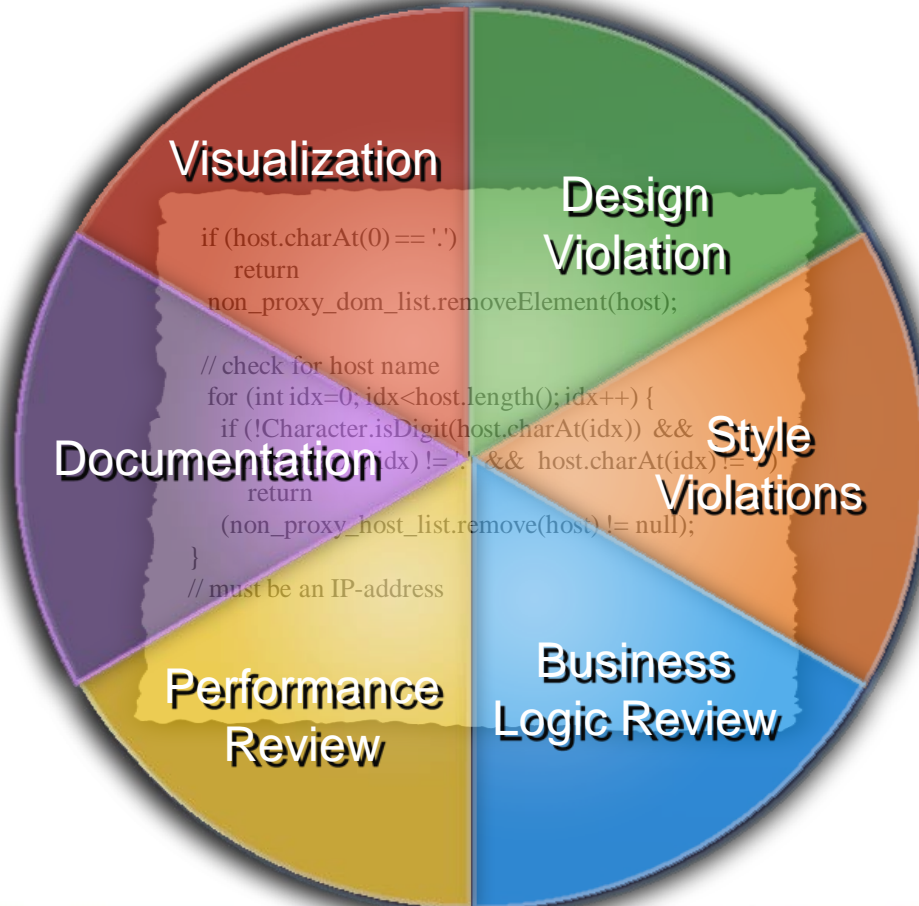
Software Archeology



Software Archeology



Software Archeology



Why is Software Archeology important?

- Always asked to rebuild the wheel
 - How many times have you been asked to recreate this current implementation, but better?
- Inheritance of code
- Outsourcing
- Graying of IT

Why is Software Archeology important?

- Always asked to rebuild the wheel
- Inheritance of code
 - How many times have you picked up someone else's code or project... to be enhanced?
- Outsourcing
- Graying of IT

Why is Software Archeology important?

- Always asked to rebuild the wheel
- Inheritance of code
- Outsourcing
 - Projects get outsourced, rural sourced, in-sourced, local sourced, and every other kind of sourced...
 - Do you understand the systems that were created?
 - Do the outsourcers understand the system they are inheriting?
- Graying of IT

Why is Software Archeology important?

- Always asked to rebuild the wheel
- Inheritance of code
- Outsourcing
- Graying of IT
 - By 2010... almost 37% of the software industry will consist of persons older than 50!
 - 60% of the federal workforce will be eligible to retire over the next 10 years
 - By 2010... 18.5 percent of the government workforce – about 290,000 employees – will retire
 - Do you understand the systems they have created?

What can be learned?

- High-level architectural understanding
- Weak-points in existing software
 - Maintenance nightmares
 - Performance bottlenecks
- Standards compliance or lack there of...
- The overall health and value of the application
- Architectural approaches or how not to solve a problem
- Finding and Harvesting of Algorithms and patterns

What tools are needed?

- Need to be able to get a picture
- Need to be able to do static analysis
- Need to be able to do Dynamic analysis
- Need to be able to test the system
- Can it be done by hand?
 - Yes... but very time consuming... code reviews, system tests, and primitive system performance models
- Is there a better way?
 - Use a software tool



What is the cost of code reviews

- Very controversial subject
- But for me tools can enhance the approach
- **Task**
 - Review by hand a small example set of code
 - 5 classes, 139 lines of code, 4 “experts” in 15 minutes
 - Average audit violations detected: **21** **time: 0.25 hr**
- **Comparison**
 - The same set of code analyzed by a machine:
 - Audit violations detected: **150** **time: 2 sec**
 - Humans @ 84/hr – U.S.
- **Real “sample” Project**
 - 187,600 violations in 100 minutes on a project with 1233 classes and 199,146 lines of code
 - **32,443** violations using the default set
 - Actual customer case studies show **~400 man/hour savings** per code review

Remember: remove the subjective and move to the objective

Demonstrations

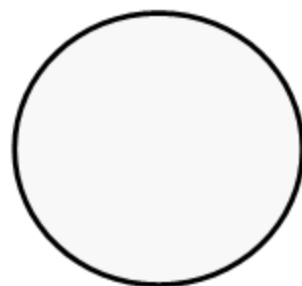
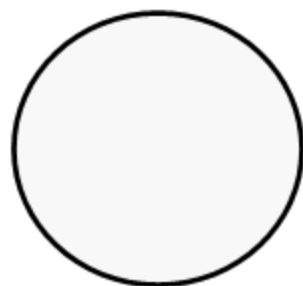
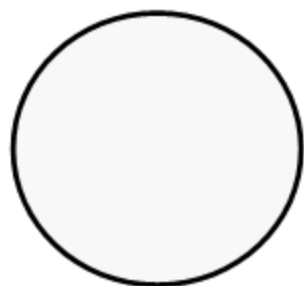
- Example Showing JBuilder
- Example Showing RAD Studio

Questions & Answers

クイズに答えて賞品を当てよう！

問題

「エンバカデロ、2010年は**ツール〇〇〇〇**」。
〇〇〇〇に入る4文字のカタカナは？



素敵な賞品が当たる！応募はこちらから

http://forms.embarcadero.com/forms/dcamp_quiz



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Marco Cantù氏の
Delphiハンドブック

応募締切は3月12日15時まで！



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Thank You

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