Software Regression Testing

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COMOPTEVFOR
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Congratulations!

- Computer Controlled Power Steering
- Computer Controlled Fuel Regulation
- Computer Controlled Anti-Lock Brakes
- Computer Controlled Secure Remote Entry
- Computer Controlled Environmental Monitoring
Testing …

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- Computer Controlled Power Steering
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Troubleshooting …
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Premise

The degree of regression testing required for a system is not proportional to the failure corrected, but to the extent of the change applied to correct the failure.
Measuring Extent of Change

• Traditional Methods
  – SLOC
  – SPR Opening/Closure Rate
  – Interface Tracing

• Proposal
  – Functional Decomposition and Synthesis
  – Total Architectural Change
Functional Dependency

• Functional Entities Exist at Multiple Levels of Resolution
• Entity-Relationship Views are Isomorphic with Hierarchies
• Hierarchies Can Establish “Order of Effect” Relationships Among Entities
Substantive Change

- Changes in Scope
- Changes in Nature
- Changes in Range
- Changes in Behavior
Tracing Change to Test Cases

• Dimensions of Testing
  – Breadth
  – Depth

• Dimensions of Change
  – Order
  – Substance

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Questions

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