Wholesale & Specialty Insurance Symposium: Risky Business

Hosted by Arizona State University

Phoenix, Arizona
April 6-7, 2018

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Programming in Actuarial Science

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The Actuary's Toolkit

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Can I Just Learn Excel?

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Advantages of Programming

- Reproducible
- Diffable
- Testable
- Open
- Readable

“Make easy things easy and hard things possible.”

- Larry Wall

Creator of the Perl Programming Language

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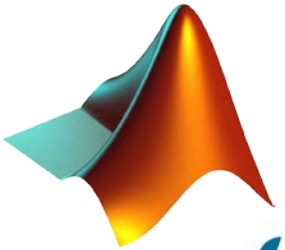
Choosing a Language



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Resources

- Data Camp
- Code Academy
- MOOCs (edX, Udacity, etc.)
- GitHub
- Stack Overflow

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Show Me What You've Got

- Share your code
  - Problem solving
  - Organization
  - Attention to Detail
  - Interests

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Case Study: Captive Pricing at GPW

- A captive insurance company insures the risks of its owner, often insuring risks that aren't covered in the commercial market.
- Priced using simulation models:
  - Reflect the variability around assumptions
  - Appropriate application of limits and retention levels

- Original simulation model was written in Excel
  - 5 – 7 minutes for a single simulation to run
  - Versioning was error prone (_v51, _v52, …)
  - Hard to track changes between versions

Case Study *(cont'd)*

- Migrated simulations to Python
  - Gains:
    - Major speed gains: simulations run in < 5 sec
    - Suite of tests
    - Clear record of changes
  - Losses:
    - Fewer people are able to make adjustments
    - Potential for fewer people to understand the model

Q & A

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