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RMarkdown and Git for Collaborative Actuarial Research and Analysis

Submitter Email: dmurphy@trinostics.com

Track: Special Topics

Calculator Rating: 2

Session Description:

Collaboration between actuaries presents certain hurdles, including reproducibility of shared results, updating documentation, and file sharing and versioning. This session will discuss two open-source tools that help overcome these hurdles: RMarkdown and git.

RMarkdown provides two great benefits to an actuary

1. Literate programming -- The documentation of the analysis becomes integrated with the analysis itself
2. Reproducibility -- The analysis may be reproduced by someone other than the original author

When actuaries use spreadsheets (e.g., Excel), the documentation is usually in a different environment (e.g., Word or PowerPoint). The actuary must constantly update several documents to ensure consistency between exhibits and the narrative which supports them. Text which clarifies the intent and operation of complex calculations is often difficult to find or absent. This creates operating risk to the actuary and the Principal, as well as lost opportunity to both in meeting the emerging requirements of auditors, management, and regulatory regimes such as Solvency II.

Git, invented by Linus Torvalds to handle development of his more famous software, Linux, has become the most widely used version control system for software development. Graphical user interfaces (GUIs) have made git more accessible to less technical folks, and its Windows implementation is almost "magical."

People

Moderator

Brian A. Fannin

ACAS

Chief Actuary:

The Redwoods Group

The Redwoods Group

2801 Slater Road, Suite

110

Morrisville, NC 27650

Phone Number: 919-462-

4710

Email:

BFannin@RedwoodsGroup.com



Submission Concluded

Thank you for submitting to the online Casualty Actuarial Society system. Receipt of this notice does not guarantee that your submission was completed correctly or free of error. If necessary, changes can be made to your submission between now and the deadline of Friday, February 8, 2013.

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Topic: Session Topic

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Session Description

Collaboration between actuaries presents an immediate, ongoing opportunity of access to results, updating documentation, and the sharing and versioning. This session will discuss two open source tools that help overcome these hurdles. RMarkdown and Git.

RMarkdown provides two great benefits to an actuary.

1. Literate programming -- The documentation of the analysis becomes integrated with the analysis itself.

2. Reproducibility -- The analysis may be reproduced by someone other than the original author.

When actuaries use spreadsheets (e.g., Excel), the documentation is usually in a different environment (e.g., Word or PowerPoint). The actuary must constantly update several documents to ensure consistency between the text and the narrative which supports the text. Just what confuses the client and operation of complex calculations is often difficult to find or absent. This creates a gap in the actuary and the client, as well as lost opportunities to both in meeting the emerging requirements of auditors, management, and regulatory agencies such as Solvency II.

Git, invented by Linus Torvalds to handle development of his core Linux software, Linux, has become the most widely used version control system for software development. Graphical user interfaces (GUIs) are made Git more accessible to less technical folks, and thus Windows administration is almost "magical".

Modeler

Shan A. Tamm

ACAS

Chief Actuary

The Redwood Group

The Redwood Group

2801 State Road, Suite

110

Memphis, TN 38102

Phone Number: 901-483-

4310

Email:

Shan@RedwoodGroup.com



The session will walk through examples in the context of a reserve analysis.

Presentations

#4102: murphy

[Daniel Murphy](#), President, Trinostics, LLC

#4103: singer

[Kirsten Singer](#), Consulting Actuary, self-employed