Programming for Actuarial Work Working Party

Draft Terms of Reference

(To be revised at Working Party's initial meeting)

Overall Objective

A cross-practice Working Party established to explore and support the adoption of best practice computer programming concepts and techniques in daily actuarial work.

Purpose

The purpose of the working party is to:

- explore key programming concepts and techniques in the context of **actuarial work**
- **support** members with developing their programming skills
- provide a **platform** for members to collaborate in developing software that can be used as building blocks for actuarial applications.

Scope

A **cross-practice** group with initial focus on **in-memory** data sets, the size of data that the majority of actuarial practitioners need to work with most of the time. Using primarily **open-source** programming languages (such as, but not necessarily limited to, Python and R) the group will cover the following areas:

- application and comparison of key **programming** practices, concepts and techniques in the context of actuarial work
- effective and efficient access, manipulation and visualisation of **data**
- practical insights into mathematical, statistical, computational and actuarial **concepts** through programming
- practical application of programming techniques in actuarial **modelling**
- authoring of **dynamic**, reports and presentations by embedding code and narration into a single document.

Deliverables and workstreams

The working party will operate through a small number of individual workstreams, as outlined in the table below. The working party will deliver its output through webinars, papers, presentations in industry events and online collaboration platforms.

Workstream	Description
Programming Workstream	Comparison of key programming practices, concepts and techniques in the context of actuarial work Support members with developing their programming skills Provide a platform for members to collaborate in developing software that can be used as building blocks for actuarial applications
Data Workstream	Effective and efficient access, manipulation and visualisation of data Authoring of dynamic reports and presentations by embedding code and narration into a single document
Modelling Workstream(s)	Practical application of programming techniques in actuarial modelling Practical insights into mathematical, statistical, computational and actuarial concepts through programming One such workstream for each different case study / concept with the number of workstreams depending on resource available
All workstreams	Drawing from the work of the individual workstreams, the working party will author a free and open- source online book on Programming for Actuarial Work

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