A Formal Semantics for the Spreadsheet Core

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Abstract

Spreadsheets are the most widely used computing environment in the world. We illustrate how a relatively minor extension of Christopher Strachey's model of computation can express the functional reactive behavior at the core of commercial and experimental spreadsheets. We define an operational semantic for a small language, named Zilly, and show that it captures the essence of spreadsheets computing. Our language-centered approach paves the way to extend spreadsheets, bringing them closer to more advanced computing environments.

Keywords

functional reactive computing, operational semantics, spreadsheets