

## Back to the Roots

### Abstract

Would the development of early twentieth century metamathematics have taken a completely different direction if computer aided proof verification had been available? Is the *modern algebra* notion of a function a category mistake?

We consider a simple formal system in which, as in set theory and type theory, it is possible to implement all of mathematics (at least all the mathematics that can be written down) and in which at least some mathematical notions have a very simple and natural implementation. We consider varieties of axioms of extensionality and axioms of existence. We introduce a useful abstraction notation, make many definitions and prove a few easy theorems. We outline a programme of further work in the theory itself, in category theory and in computing.