

1096-06-2287

William DeMeo* (williamdemeo@gmail.com). *The Universal Algebra Calculator at the command line and in the cloud*. Preliminary report.

The Universal Algebra Calculator (UACalc) is a powerful computer algebra system used by researchers working in general (universal) algebra. It comes with an intuitive graphical user interface (gui) and runs on any computer with a Java runtime environment. For certain research objectives, however, it is inconvenient or impossible to use a gui, and we require a command line interface instead.

In this brief tutorial, we demonstrate the use of UACalc Java classes via the Jython command line interpreter on an ordinary Linux laptop. This allows us to exploit the power and speed of the UACalc library from the command line as well as from within Python programs. Moreover, a powerful local computer is not required, and we demonstrate that the computing can be done for free in the cloud (on Amazon EC2 servers) and controlled from any Android device.

Our demonstration of this cloud based computing solution for algebraic research will use examples that have contributed to progress on an important open problem in universal algebra and the theory of finite groups. (Received September 17, 2013)