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A graphical interface for the Plasma Apprentice: Easier access to plasma physics knowledge[1] B. WEINSTEIN, Case Western Reserve, J. LIU, U.Michigan, H. MYNICK, E. FEIBUSH, PPPL — Obtaining and evaluating relevant formulae for a given plasma physics problem is often tedious. PAP, the Plasma Apprentice, was developed [1] to automate this process. To provide easier access to the PAP "kernel," written in Mathematica, we have designed a graphical user interface in Java. To link Mathematica and Java, we used Mathematica's JavaLink (JLink) library and the Java Universal Network/Graph Framework (JUNG) to provide additional functionality. The Java client allows one to select and evaluate predefined quantities symbolically and numerically. To aid numerical computation, scientists can use parameter presets from existing machines (e.g. stellerators) when evaluating quantities. A command-line interface allows users direct access to the PAP kernel. PAP can easily be extended and offers templates to help users define new quantities. Presently, users can save their changes to the program locally. Future functionality may allow users to publish their changes to a "PAP Repository." Ultimately, the authors hope that PAP will gain widespread use and will be enhanced by others.

[1] H.E. Mynick, Physica Scripta <T16>, 133-142 (1987).

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