

C++ as a programming language for CAS

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ABSTRACT

Calculator add-in applications, although effectively fulfill their purpose, usually present some drawbacks that could be overcome by a flexible and commonly known programming language like C++. With an appropriate software development kit to program and transfer the application to a calculator-embedded C++ interpreter, the customization and its usability will be boosted. Hence, both the user and the programmer experience are improved.

From the programmer side, the re-usage of third party code or modification of community-provided source code is a clear advantage, in consonance with the 2.0 philosophy. Moreover, due to the code organization in classes and objects, the comprehension in a lower level is easier, as it is the learning curve at initial programming stages. Although the application performance can be slightly decreased, the overall process is worth enough and the drawback is imperceptible in the adequate hardware.

From the user point of view, the advantages are also notorious. First of all, the graphical user interface (GUI) provides a much intuitive and easy-to-use application extensions. The inclusion of web inspired GUI elements (e.g., buttons, text fields, bitmaps, check boxes, lists) naturally drives the user to the correct application usage without practically any extra help or tutorial instructions. Furthermore, the automation of frequently used equations is envisaged to assist the user in several everyday tasks.

In this lecture, the aforementioned features will be highlighted and a typical application structure will be shown. After some developed examples explanation, a list of internet addresses containing both resources to develop C++ applications and directions to already implemented software will be provided.