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Jointly Learning Python Programming and Analytic Geometry

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Abstract : The paper presents an original Python-based application that outlines the advantages of combining some elementary notions of mathematics with the study of a programming language. The application support refers to some of the first lessons of analytic geometry, meaning conics and quadrics and their reduction to a standard form, as well as some related notions. The chosen programming language is Python, not only for its closer to an everyday language syntax – and therefore, enhanced readability – but also for its highly reusable code, which is of utmost importance for a mathematician that is accustomed to exploit already known and used problems to solve new ones. The purpose of this paper is, on one hand, to support the idea that one of the most appropriate means to initiate one into programming is throughout mathematics, and reciprocal, one of the most facile and handy ways to assimilate some basic knowledge in the study of mathematics is to apply them in a personal project. On the other hand, besides being a mean of learning both programming and analytic geometry, the application subject to this paper is itself a useful tool for it can be seen as an independent original Python package for analytic geometry.

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