

## **Programming as a soft skill for project managers: How to have a computer take over some of your work**

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Large part of the project manager's work can be described in terms of retrieving, processing analysing and synthesising various types of data from different sources. The types of data become more and more diverse and volumes continue to increase, especially for large international collaborations. There are software solutions that help to cope with data management and analysis tasks, but their functionality is either not flexible enough to satisfy the ever-changing needs of scientific project management or extremely complicated with steep learning curves. We explore the possibility of using python programming language as a main tool for solving typical scientific project management data related tasks. Python is a general-purpose programming language with a very rich set of libraries. In recent years python experienced explosive growth especially in the data sciences. This led to the development of several libraries that help to efficiently solve many data-related tasks without very deep knowledge of programming in general and python in particular. Associated rapid growth of the python programming environments and visualization tools make it possible to perform most of the tasks in the web browser. In this paper we present several case studies that deal with data handling, analysis and visualization for project management tasks. In particular, we cover cases related to task management, human resources management, stakeholder management and dissemination.