THEME SHEET - L.EIC

2024 - 2025

Theme	**Programming languages performance and usability**	
	Programming languages are systems of symbols and rules which programmers use to write the instructions to be followed by the computer hardware in order to meet specific goals. Different languages were developed with different goals in mind: for example, performance (regarding the final, running code) or ease of use and rapid development (for the benefit of the programmer).	
Problems	**What is the impact on ease of use and rapid development that performance-optimised languages (such as C++) have?**	**What is the impact on performance that languages designed for ease of use and rapid development (such as Python) have?**
Learning outcomes	At the end of the work, regarding the topic and problem studied, students should be able to: • define the main underlying terms • present a clear, illustrated summary with clarifying examples of the underlying concepts • if possible, identify examples of the use of the underlying concepts in academic life (teaching and research) at FEUP (or U.Porto) • if possible, fit the underlying concepts into one or more of the UN Sustainable Development Goals* • present the group's vision, formed after the work has been carried out	
Biblio	Mere examples: • Prechelt, L. (2000). An Empirical Comparison of C, C++, Java, Perl, Python, Rexx, and Tcl for a Search/String-Processing Program. Software: Practice and Experience, 30(6), 615-636. • Wikipedia: Performance of programming languages	
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* https://sdgs.un.org/goals