Multi- Paradigm Programming

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This report aims to compares the solutions achieved using a procedural approach versus an Object-oriented approach to the project at hand.

In this project the developer is asked to create a shop program in both C programming language and Python, in the case of procedural programming, and in python for the Object-Oriented programming. We will compare the similarities and differences between the 2 approaches in programming.

C is a general-purpose computer programming language, created in the 1970’s by Dennis Richie at Bell Labs in the USA. It was designed to provide low-level access to memory and language constructs that can map efficiently to machine instructions with minimal runtime support; and as a result, C’s features are deliberately designed to reflect the capabilities of the targeted CPUs.

Because of this functionality, it has found lasting use in operating systems and device drivers; and is commonly used on computer architectures that range from the largest supercomputers to the smallest microcontrollers and embedded systems.

C is an imperative procedural language supporting structured programming, lexical variable scope, and recursion, with a static type system. Despite its low-level capabilities, the language was designed to encourage cross-platform programming and standards-compliant C program written with portability in mind can be compiled for a wide variety of computer platforms and operating systems with few changes to its source code. Because of this, and the added controllability over memory making it ideal for space-limited machines; C has consistently ranked in the top 2 languages in the TIOBE index, which measures the popularity of programming languages since the late 1980’s. (source: <https://www.tiobe.com/tiobe-index/>)

The TIOBE index ranks Python as the most popular programming language as of November 2022. It is a general-purpose language that supports multiple programming paradigms- most popularly procedural programming and Object-Oriented Programming.

Python was first released in the early 1990’s and is a high-level language that emphasises code readability and comes with comprehensive standard libraries.

References:

* <https://en.wikipedia.org/wiki/C_(programming_language>)
* <https://en.wikipedia.org/wiki/Python_(programming_language>)