

PL401μ Optimisation Practices and Tips for Python Code

Coding 2: Writing time-efficient code

This assessment evaluates the following competencies:

- *PP601 – Measure the execution time of a given Python program*
- *PP701 – Understand main Python idioms*
- *PP702 – Write good Pythonic code for small programs*
- *PP703 – Optimise a Python program to improve execution speed*

You may also be assessed on the following competencies:

- *PP602 – Profile the execution of a given Python program*
- *PP603 – Audit a given Python program regarding its performances*

This coding assessment asks you to write one program to demonstrate that the use of the following techniques do improve the performances of a Python program in term of execution time. For each one of the following technique, write one program without using it and one using it, doing the same thing, and perform measures to demonstrate how much time has been gained:

- use the `zip` predefined function to iterate through two collections in parallel;
- use the slice operator to make a copy of a complete list or a part of it;
- and, finally, use the `enumerate` predefined function to iterate over a list while having access to the iteration index.

To succeed the assessment, you have to show how to run your code and to explain your findings in term of execution time improvements you managed to obtain with the three proposed techniques. You also have to explain what are the bad practices you identified in the program examples that do not use the three techniques.