

Python Exam Synopsis

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Data Structures & Functions

I will go through the 4 core data structures of Python which are: List, Tuple, Set and Dictionaries. I will go over the differences between them, demonstrate how they are implemented and give examples of when they are appropriate to use. Furthermore, I will demonstrate Comprehensions and explain why they are so powerful.

Pythonic OOP

I will present an overview of OOP, encapsulation and inheritance. I will give examples of some of the differences between Python OOP and Java OOP, and touch on the concept of pythonic code. I will talk about dunder methods and show how to implement `__init__` methods. Furthermore, I will go over how to improve classes with the use of Python's built-in functions.

Generators, Decorators & Context Managers

I will go over the use of Generators, Decorators and Context Managers with code examples. I will show how to write memory efficient programs using generators. Using a decorator function, I will then show how to measure the execution time of a methods. Last, I will demonstrate how to handle errors using context managers.

Python modules and the python development environment

I will go over how to run python code in a Linux environment on a docker container and how to navigate the Linux OS. I will then showcase the use of Python Modules, importing and exporting python modules and why that's so important. I will go over the use of 3rd party modules and how to manage dependencies using a package manager.