Python

10 Advanced Python Concepts

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01. Decorators -
Decorators are functions that modify the behavior of another function. They are a powerful tool for adding functionality to functions without modifying the functio code .

02. Metaclasses -
Metaclasses used to create classes. They are like classes for classes. They allow you to modify the behavior of classes at creation time.

03. Context Manager -
Context manager are used to allocated and release resourses automatically,such as opening and closing files, acquiring and release locks etc.

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04. Generators -

Generators are a type of iterable, like list or tuple, but unlike lists,they don't allow indexingwith arbitary indexes, They create iterators,which can be used to iterate over a large sequance of items,without storing entire sequance in memory at once.

05. Decorator Classes -

Decorator classes are classes that modify the behavior of the other classes.They are similer to decorators,but work at class level

06. Abstract Base Classes(ABCs)

- ABCs are classes that define abstract methods,which must be implemented by their subclasses, They are used to define a set methoda that a class must implementin order to be considered of a certain type

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07. Coroutines -

Coroutine are a type of generator that allow data to be sent back and forth between the generator and all caller. They are used for cooperative multitasking, where two or more functions cooperate to complete a task

08. Concurrency and Parallelism -

Concurrency is the ability of a program to run multiple tasks at the some time.parallelism is the ability of a programme to use multuple CPUs or cores to perform a task faster

09. Functional Programming -

Functional programming is a programming paradigm that empasizes the use of functions to solve problems. in python,functional programming can be achieved using higher-order functions,lambdafunctions,and the functools module.

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10. Metaprogramming -

Metaprogramming is the ability of a program to modify its own code at runtime. in python ,metaprogramming ca n achieved using functions like eval() and exec(), as well as with decorators,metaclasses, and class decorators

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