

# Generators

*Advanced Python Programming*

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Valerio Velardo - The Sound of AI

# What's a Generator?

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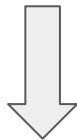
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*A generator is a function that returns a generator object.*

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*A generator is a function that returns a generator object.*



*Generator object is like a function that produces a sequence of values*

# How does a generator work?

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- Sequence of values generated while iterating over it

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- Sequence of values generated while iterating over it
- Use *yield* statement to generate each value in the sequence
- Execution of the generator is interrupted after *yield*
- When *next()* is called on the generator -> resume execution after *yield*

# Generator vs iterator

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# Generator vs iterator

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- All you can do with a generator, you can do with a class-based iterator

# Generator vs iterator

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- All you can do with a generator, you can do with a class-based iterator
- However, `__iter__()` and `__next__()` come for free!

# When should you use generators?

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- Produce a ton of data
- Take advantage of lazy evaluation
- Don't need flexibility of a custom iterator