🐍Python: map, filter, reduce

🌧️1. `map(function, iterable)`

- **Purpose**: Applies a function to each element in an iterable.
- **Output**: A new iterable with transformed elements.
- **Think**: *Transform every element.*

✅Example:

```
nums = [1, 2, 3, 4, 5]
squares = list(map(lambda x: x**2, nums))
print(squares)   # [1, 4, 9, 16, 25]
```

🌧️2. `filter(function, iterable)`

- **Purpose**: Filters elements based on a condition (True/False).
- **Output**: A new iterable with only elements that satisfy the condition.
- **Think**: *Pick some elements.*

✅Example:

```
nums = [1, 2, 3, 4, 5]
evens = list(filter(lambda x: x % 2 == 0, nums))
print(evens)   # [2, 4]
```

🌧️3. `reduce(function, iterable)`

- **Purpose**: Repeatedly applies a function to pairs of elements, reducing to a single value.
- **Output**: A single accumulated result.
- **Think**: *Combine into one result.*
- ⚠️Needs import from `functools`.

✅Example:

```
from functools import reduce

nums = [1, 2, 3, 4, 5]
```

```
product = reduce(lambda x, y: x * y, nums)
print(product)   # 120
```

✨Differences in One Line:

- **map** → Transform all elements.
- **filter** → Select some elements.
- **reduce** → Combine into one value.