

Map , Filter , Reduce

- ☐ Use `map()` when you need to apply a function to all elements.
- ☐ Use `filter()` when you need to select specific elements.
- ☐ Use `reduce()` when you need to combine all elements into one output.

Code

```
from functools import reduce
```

```
# 1. Lambda Function
```

```
double = lambda x, y: x * y / x + 1
```

```
print("Lambda Output:", double(2, 3)) # Example Calculation
```

```
# 2. Using map() - Applies function to every element
```

```
l = [1, 2, 3, 4]
```

```
mapped_result = list(map(lambda x: x * 2, l))
```

```
print("Map Output:", mapped_result) # [2, 4, 6, 8]
```

```
# 3. Using filter() - Filters elements based on a condition
```

```
filtered_result = list(filter(lambda x: x > 2, l))
```

```
print("Filter Output:", filtered_result) # [3, 4]
```

```
# 4. Using reduce() - Reduces all elements to a single value
```

```
reduced_result = reduce(lambda x, y: x + y, l)
```

```
print("Reduce Output:", reduced_result) # 10 (1+2+3+4)
```