

# LAMBDA FUNCTIONS

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# HELLO

- Learning Objectives
  1. Understand what a lambda function is
  2. Demonstrate the ability to use lambda functions

# WHAT IS A LAMBDA?

- A function that is small and anonymous
- They can take any number of arguments, but only a single expression

```
</> lambda arguments: expression
```

## LAMBDA EXAMPLE (1)

- Add 10 to a variable and return the result

```
</> x = lambda a: a + 10
```

```
</> x(5)
```

```
▶ 15
```

## LAMBDA EXAMPLE (2)

- Multiply variable `a` with `b` and return the result

```
</> x = lambda a, b: a * b
```

```
</> x(5, 10)
```

```
▶ 50
```

## LAMBDA EXAMPLE (3)

- Sum the variables `a`, `b` and `c` and return the result

```
</> x = lambda a, b, c: a + b + c
```

```
</> x(5, 10, 15)
```

▶ 30

## WHY USE LAMBDA? (1)

- Useful when they are used as an anonymous function that is within another function
  - i.e. a function definition takes one argument, and the argument will be divided by an unknown number

```
</> def my_function(n):  
    return lambda a: a / n
```

- We can use the function above to always halve the number that you send to it

```
</> half_number = my_function(2)
```

```
▶ half_number(10) = 5.0  
   half_number(15) = 7.5  
   half_number(20) = 10.0
```

## WHY USE LAMBDA? (2)

- The same `my\_function` can be used to calculate a division by 3

```
</> def my_function(n):  
    return lambda a: a / n
```

```
</> third_number = my_function(3)
```

```
▶ third_number(3) = 1.0  
   third_number(6) = 2.0  
   third_number(9) = 3.0
```



## WHY USE LAMBDA? (3)

- The function can then be used simultaneously to divide by 2 and 3

```
</> def my_function(n):  
    return lambda a: a / n
```

```
</> half_number = my_function(2)  
third_number = my_function(3)
```

```
▶ half_number(10) = 5.0  
   third_number(3) = 1.0  
   third_number(6) = 2.0
```

# GOODBYE

- Questions?
  - Post them in the **Community Page** on Aula
- Contact Details:
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