

Effective Programming Practices for Economists

Basic Python

Defining Functions

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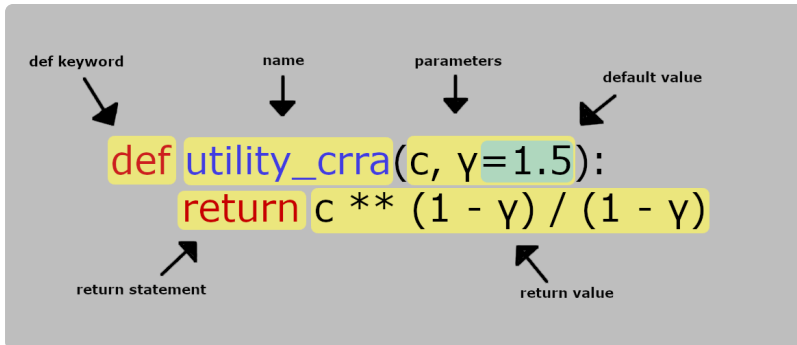
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- Anatomy of functions
- Examples of functions
- Why functions are important!

Example: CRRA Utility function

$$u(c, \gamma) = \frac{c^{(1-\gamma)}}{1-\gamma}$$

Anatomy of Python functions



- Start with the `def` keyword
- Name is `lowercase_with_underscores`
- There can be one or several parameters (a.k.a. arguments)
- You can assign default values for arguments
- Function body is indented by 4 spaces and can have one or several lines
- Inside the body you can do everything you have seen so far!

Example: CRRA Utility function

```
>>> def utility_crra(c,  $\gamma$ =1.5):  
...     return c ** (1 -  $\gamma$ ) / (1 -  $\gamma$ )
```

```
>>> utility_crra(1.0)  
-2.0
```

```
>>> utility_crra(c=1.0,  $\gamma$ =1.5)  
-2.0
```

```
>>> utility_crra(c=1.0,  $\gamma$ =0.0)  
1.0
```

- Function calls work with positional and keyword arguments
- Pass keyword arguments for any function with more than one argument!

Defining functions like a pro is the most important skill to become a good Python programmer!