Cheatsheet 04: Functions and Classes in Python

Functions

Defining a function

```
def function_name(parameters):
    # function body
    return value  # optional
```

Calling a function

```
result = function_name(arguments)
```

Default parameter values

```
def function_name(param1, param2="default_value"):
    # function body
```

Lambda functions

```
lambda_function = lambda parameters: expression
```

Arbitrary number of arguments (*args)

```
def function_name(*args):
    # function body
```

Arbitrary number of keyword arguments (**kwargs)

```
def function_name(**kwargs):
    # function body
```

Classes

Defining a class

```
class ClassName:
    # class attributes and methods
```

Class constructor (init method)

```
class ClassName:
    def __init__(self, parameters):
        self.attributes = values
```

Creating an object (instance)

```
object_name = ClassName(arguments)
```

Accessing object attributes and methods

```
attribute_value = object_name.attribute
result = object_name.method(arguments)
```

Class inheritance

```
class DerivedClass(BaseClass):
    # additional attributes and methods
```

Calling the base class constructor

```
class DerivedClass(BaseClass):
    def __init__(self, parameters):
        super().__init__(base_class_parameters)
        # additional attributes
```

Attribute overriding

```
class DerivedClass(BaseClass):
    class_attribute = new_value

    def __init__(self, parameters):
        self.instance_attribute = new_value
```

Method overriding

```
class DerivedClass(BaseClass):
    def method_name(self, parameters):
        # new method implementation
```