

Python Mapping for Enumerations

Python does not have an enumerated type, so a Slice [enumeration](#) is emulated using a Python class: the name of the Slice enumeration becomes the name of the Python class; for each enumerator, the class contains an attribute with the same name as the enumerator. For example:

Slice

```
enum Fruit { Apple, Pear, Orange };
```

The generated Python class looks as follows:

Python

```
class Fruit(object):
    def __init__(self, val):
        assert(val >= 0 and val < 3)
        self.value = val

    # ...

Fruit.Apple = Fruit(0)
Fruit.Pear = Fruit(1)
Fruit.Orange = Fruit(2)
```

Each instance of the class has a `value` attribute providing the integer value of the enumerator. Note that the generated class also defines a number of Python special methods, such as `__str__` and `__cmp__`, which we have not shown.

Given the above definitions, we can use enumerated values as follows:

Python

```
f1 = Fruit.Apple
f2 = Fruit.Orange

if f1 == Fruit.Apple:           # Compare with constant
    # ...

if f1 == f2:                    # Compare two enums
    # ...

if f2.value == Fruit.Apple.value: # Use integer values
    # ...
elif f2.value == Fruit.Pear.value:
    # ...
elif f2.value == Fruit.Orange.value:
    # ...
```

As you can see, the generated class enables natural use of enumerated values. The `Fruit` class attributes are preinitialized enumerators that you can use for initialization and comparison. You may also instantiate an enumerator explicitly by passing its integer value to the constructor, but you must make sure that the passed value is within the range of the enumeration; failure to do so will result in an assertion failure:

Python

```
favoriteFruit = Fruit(4) # Assertion failure!
```

See Also

- [Enumerations](#)
- [Python Mapping for Identifiers](#)

- [Python Mapping for Modules](#)
- [Python Mapping for Built-In Types](#)
- [Python Mapping for Structures](#)
- [Python Mapping for Sequences](#)
- [Python Mapping for Dictionaries](#)
- [Python Mapping for Constants](#)
- [Python Mapping for Exceptions](#)