

```

1  """
2  Inherit docstrings
3
4  Found here: http://code.activestate.com/recipes/578587-inherit-method-docstrings-without-breaking-decorat/
5
6  Simple Use:
7      1) Import this module
8      2) Inherit metaclass InheritableDocstrings
9      3) Apply decorator inherit_docstring
10
11  Example:
12      from lib.inherit_docstring import InheritableDocstrings, inherit_docstring
13
14      class Animal:
15          def move_to(self, dest):
16              '''Move to *dest'''
17              pass
18
19      class Bird(Antimal, metaclass=InheritableDocstrings):
20          @inherit_docstring
21          def move_to(self, dest):
22              self.fly_to(dest)
23
24      assert Animal.move_to.__doc__ == Bird.move_to.__doc__
25
26  """
27
28
29  from functools import partial
30
31  # Replace this with actual implementation from
32  # http://code.activestate.com/recipes/577748-calculate-the-mro-of-a-class/
33  # (though this will work for simple cases)
34  def mro(*bases):
35      return bases[0].__mro__
36
37  # This definition is only used to assist static code analyzers
38  def inherit_docstring(fn):
39      '''Copy docstring for method from superclass
40
41      For this decorator to work, the class has to use the `InheritableDocstrings`
42      metaclass.
43      '''
44      raise RuntimeError('Decorator can only be used in classes '
45                          'using the `InheritableDocstrings` metaclass ')
46
47  def _inherit_docstring(mro, fn):
48      '''Decorator to set docstring for *fn* from *mro* '''
49
50      if fn.__doc__ is not None:
51          raise RuntimeError('Function already has docstring ')
52
53      # Search for docstring in superclass
54      for cls in mro:
55          super_fn = getattr(cls, fn.__name__, None)
56          if super_fn is None:
57              continue
58          fn.__doc__ = super_fn.__doc__
59          break
60      else:
61          raise RuntimeError("Can't inherit docstring for %s: method does not "
62                              "exist in superclass" % fn.__name__)
63
64      return fn
65
66  class InheritableDocstrings(type):
67      @classmethod
68      def __prepare__(cls, name, bases, **kwargs):
69          classdict = super().__prepare__(name, bases, **kwargs)
70
71          # Inject decorators into class namespace
72          classdict['inherit_docstring'] = partial(_inherit_docstring, mro(*bases))
73
74          return classdict
75
76      def __new__(cls, name, bases, classdict):
77
78          # Decorator may not exist in class dict if the class (metaclass
79          # instance) was constructed with an explicit call to `type`.
80          # (cf http://bugs.python.org/issue18334)
81          if 'inherit_docstring' in classdict:
82
83              # Make sure that class definition hasn't messed with decorators
84              copy_impl = getattr(classdict['inherit_docstring'], 'func', None)
85              if copy_impl is not _inherit_docstring:
86                  raise RuntimeError('No inherit_docstring attribute may be created '
87                                      'in classes using the InheritableDocstrings metaclass ')
88
89              # Delete decorators from class namespace
90              del classdict['inherit_docstring']
91
92          return super().__new__(cls, name, bases, classdict)

```