User-defined Exceptions



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heron.py ×
       import math
       def triangle_area(a, b, c):
            p = (a + b + c) / 2
            a = math.sqrt(p * (p - a) * (p - b) * (p - c))
            return a
 Python Console

⇒ >>> from heron import *

  >>> triangle_area(3, 4, 5)
     6.0
     >>> triangle_area(3, 4, 10)
     Traceback (most recent call last):
       File "<input>", line 1, in <module>
       File "/var/folders/0k/58g36_tx22xcxqd9mwqzg_h00000gp/T/tmp_owt1d9p/build/heron/heron.py", line 6, in triangle_area
         a = math.sqrt(p * (p - a) * (p - b) * (p - c))
     ValueError: math domain error
     >>>
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Replay server listening on port 14415: You just opened heron
```

Custom Exception

Domain-specific

Define a new TriangleError exception to be more explicit about the error

Inheritance

The new exception should inherit from Exception, not BaseException

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heron.py X
        def triangle_area(a, b, c):
21
              sides = sorted((a, b, c))
22
              if sides[2] > sides[0] + sides[1]:
23
                   raise TriangleError("Illegal triangle", sides)
24
25
              p = (a + b + c) / 2
26
27
              a = math.sqrt(p * (p - a) * (p - b) * (p - c))
28
              return a
29
         triangle_area() > if sides[2] > sides[0] + sides[...
 Python Console X
       File "/var/folders/0k/58g36_tx22xcxqd9mwqzg_h00000gp/T/tmpt3jbbesn/build/heron/heron.py", line 24, in triangle_area
         raise TriangleError("Illegal triangle", sides)
     heron.TriangleError: 'Illegal triangle' for sides (3, 4, 10)
     >>> try:
             triangle_area(3, 4, 10)
     ... except TriangleError as e:
             print(e.sides)
     (3, 4, 10)
     >>>
                                                                                           1:1 LF UTF-8 4 spaces Python 3.8 (code_editor) 🚡 🤼 🔘
Replay server listening on port 14415: You just opened heron (a minute ago)
```

heron \ heron.py

Summary



Built-in exceptions can be less helpful than a custom one

Inherit from Exception to define a custom exception

Communicate domain-relevant information in a custom exception

Use custom exception in calling code