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1  """
2  COSC364 2022-S1 Assignment: RIP routing
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4  File: forwarding_route.py
5  """
6
7  # Route Class
8  class Route:
9      """
10     A Route class for creating entries of RIP routing table
11
12     Why we use a class instead of a dictionary/list for route?
13     * Compared to list we can quickly get a route value by name
14     instead of number index. i.e. route.nexthop
15     * Compared to dict/list, a Route class avoid accidental
16     modification.
17     i.e. What if we accidentally do: route[error_key] = error
18     """
19     def __init__(self, next_hop, metric,
20                 timeout, garbage_collect_time=None,
21                 state = 'active'):
22         """
23         parameters:
24         next_hop: an integer of router ID, i.e. 2, 3
25         metric: an integer, i.e. 1, 5, 7
26         timeout: the current time obtained by time.time()
27         garbage_collect_time: None or the current time
28         state: a string, i.e. 'active', 'dying', 'updated'
29         """
30         self.next_hop = next_hop
31         self.metric = metric
32         self.timeout = timeout
33         self.garbage_collect_time = garbage_collect_time
34         self.state = state

```