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1  from exceptions import Empty
2
3  class ArrayHeap:
4
5      def __init__(self):
6          self._maxsize = 10
7          self._data = [-1] * self._maxsize
8          self._currentsize = 0
9
10     def __len__(self):
11         return len(self._data)
12     def is_empty(self):
13         return len(self._data) == 0
14
15     def maxh(self):
16         if self._currentsize == 0:
17             raise Empty('Heap is empty')
18         return self._data[1]
19
20     def insert(self, e):
21         if self._currentsize == self._maxsize:
22             raise Empty('No Space')
23         self._currentsize += 1
24         i = self._currentsize
25         while i!=1 and e > self._data[i//2]:
26             self._data[i] = self._data[i//2]
27             i = i // 2
28         self._data[i] = e
29
30     def deletemax(self):
31         if self._currentsize == 0:
32             raise Empty('Heap is Empty')
33         x = self._data[1]
34         y = self._data[self._currentsize]
35         self._currentsize -= 1
36         i = 1
37         ci = 2
38         while ci <= self._currentsize:
39             if ci < self._currentsize and self._data[ci] <
self._data[ci+1]:
40                 ci += 1
41             if y >= self._data[ci]:
42                 break
43             self._data[i] = self._data[ci]
44             i = ci
45             ci = ci * 2
46         self._data[i] = y

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```
47
48 h = ArrayHeap()
49 h.insert(25)
50 h.insert(14)
51 h.insert(2)
52 h.insert(20)
53 h.insert(10)
54 h.insert(12)
55 print(h._data)
56 h.deletemax()
57 print(h._data)
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