Quiz 4: Abstract Data Types

Read the code for the function unravel.

```
def unravel(nested: list) -> None:
      """Print elements of <L> and its nested sub-lists in "level order".
      .....
      q = Queue()
      for e in nested:
          q.enqueue(e)
      while not q.is_empty():
          i = q.dequeue()
          if not isinstance(i, list):
10
              print(i)
11
12
          else:
               for e in i:
                   q.enqueue(e)
14
```

For this quiz, when asked to draw the state of a queue, draw it with the front labeled, and queue elements separated by arrows. For example, if we enqueue 10, then 20, then 30, draw the queue like this: front \rightarrow 10 \rightarrow 20 \rightarrow 30

You may write front \rightarrow only once and omit it afterwards. This is to show that you know which side is the front of the queue.

Consider the following code snippet that uses a queue:

```
1 >>> L = ['a', ['b', ['c', 'd'], 'e', 'f'], ['g', 'h', 'i'], 'j']
2 >>> unravel(L)
```

- 1. Draw the state of q during the function call unravel(L) at line 7 in unravel.
- 2. For each iteration of the while loop in unravel, write/draw two things:
 - (i) What, if any, output is printed at line 11.
 - (ii) The state of q at the end of the iteration (right after line 15).

Output (if any)	State of q