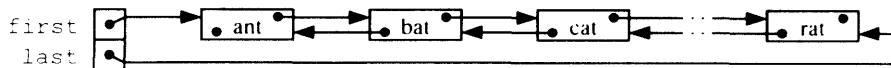


EXAMPLE 4.6 DLL manipulation

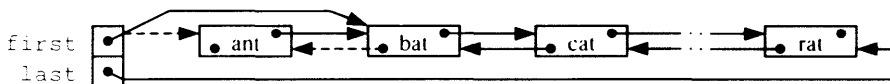
Consider the following DLL, headed by `first` and `last`:



Each of the following code fragments manipulates the above DLL's structure in a different way.

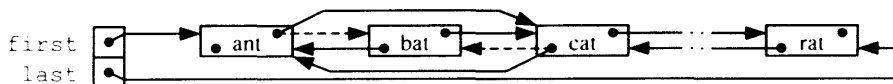
- (a) The following code deletes the DLL's first node (assuming that the DLL has at least two nodes):

```
DLLNode second = first.succ;
second.pred = null;
first = second;
```



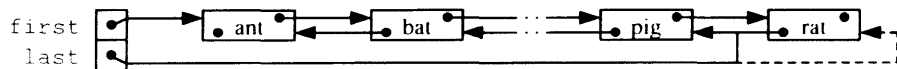
- (b) The following code deletes the DLL's second node (assuming that the DLL has at least three nodes):

```
DLLNode second = first.succ;
DLLNode third = second.succ;
first.succ = third;
third.pred = first;
```



- (c) The following code deletes the DLL's last node (assuming that the DLL has at least two nodes):

```
DLLNode secondLast = last.pred;
secondLast.succ = null;
last = secondLast;
```



- (d) The following code swaps the DLL's last and second-last nodes (assuming that the