# DDS–Linked List Demo
# Reachable Nodes

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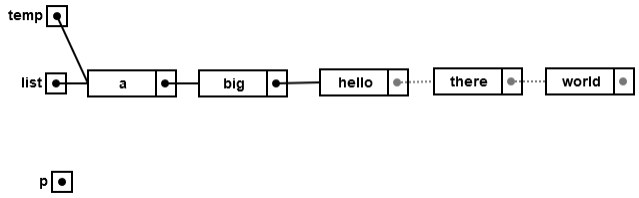
## Reachable Nodes

- These slides show demonstrate reachable nodes
- It uses the file `reacable.llist` from the DDS homepage at http://dsviewer.org/dds/homepage/
- Nodes in the tool represent this structure

```
Class Node{
    String payload;
    Node next;
}
```

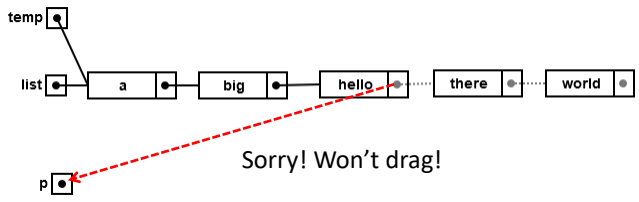
# Reachable Step 1

- Run http://dsviewer.org/dds-llist/
- Load the file `reachable.llist`



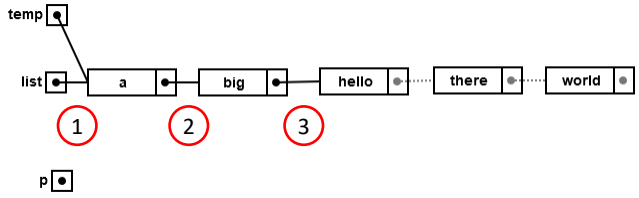

# Reachable Step 2

- Try to assign the “hello” node next reference to the p reference variable
- You cannot do it, the reference will not drag



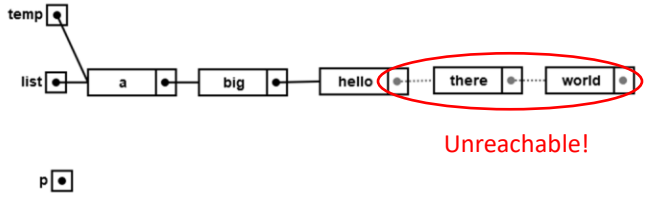
# Reachable Step 3

- You can only access node properties that can be reached using two links from a reference variable
- The next reference of the "hello" node is 3 links away from `temp` and `p`



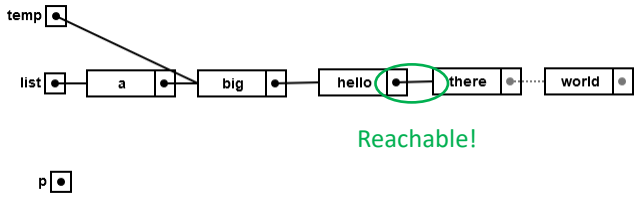

# Reachable Step 4

- You will notice that the reference dot goes gray if it is unreachable
- That indicates that it cannot be accessed
- Likewise unreachable links that cannot be accessed are gray



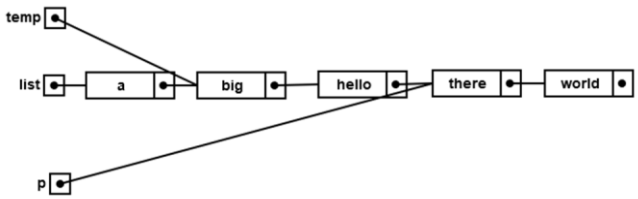
# Reachable Step 5

- To make the next reference of the "hello" node reachable, walk the `temp` reference one node down the list
- Click on `temp` and click the `= .next` button




# Reachable Step 6

- We can finally assign the next reference of the "hello" node to the `p` reference



## Reachable Step 7

- It is not good programming practice to chain too many `.next` references to reach a node
- To model this behavior, DDS will not allow access to a node's property using more than two links
- `list.next.next.next` requires three links and is not allowed