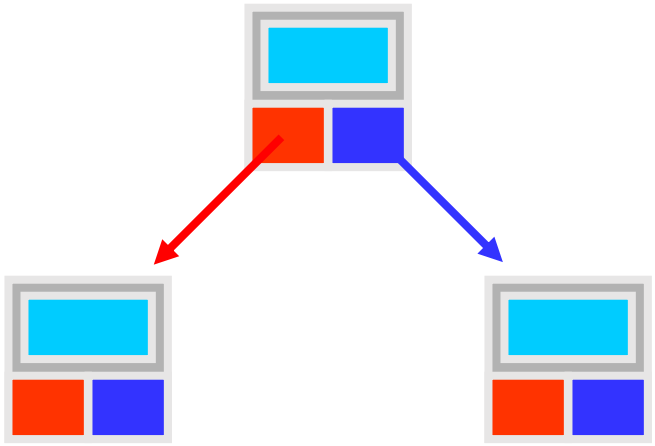
POST-ORDER TRAVERSAL

Outline of Post-Order Traversal

- **Three principle steps:**
  - **Traverse Left**
  - **Traverse Right**
  - **Do work (Current)**

- **Work can be anything**
- **Separate work from traversal**

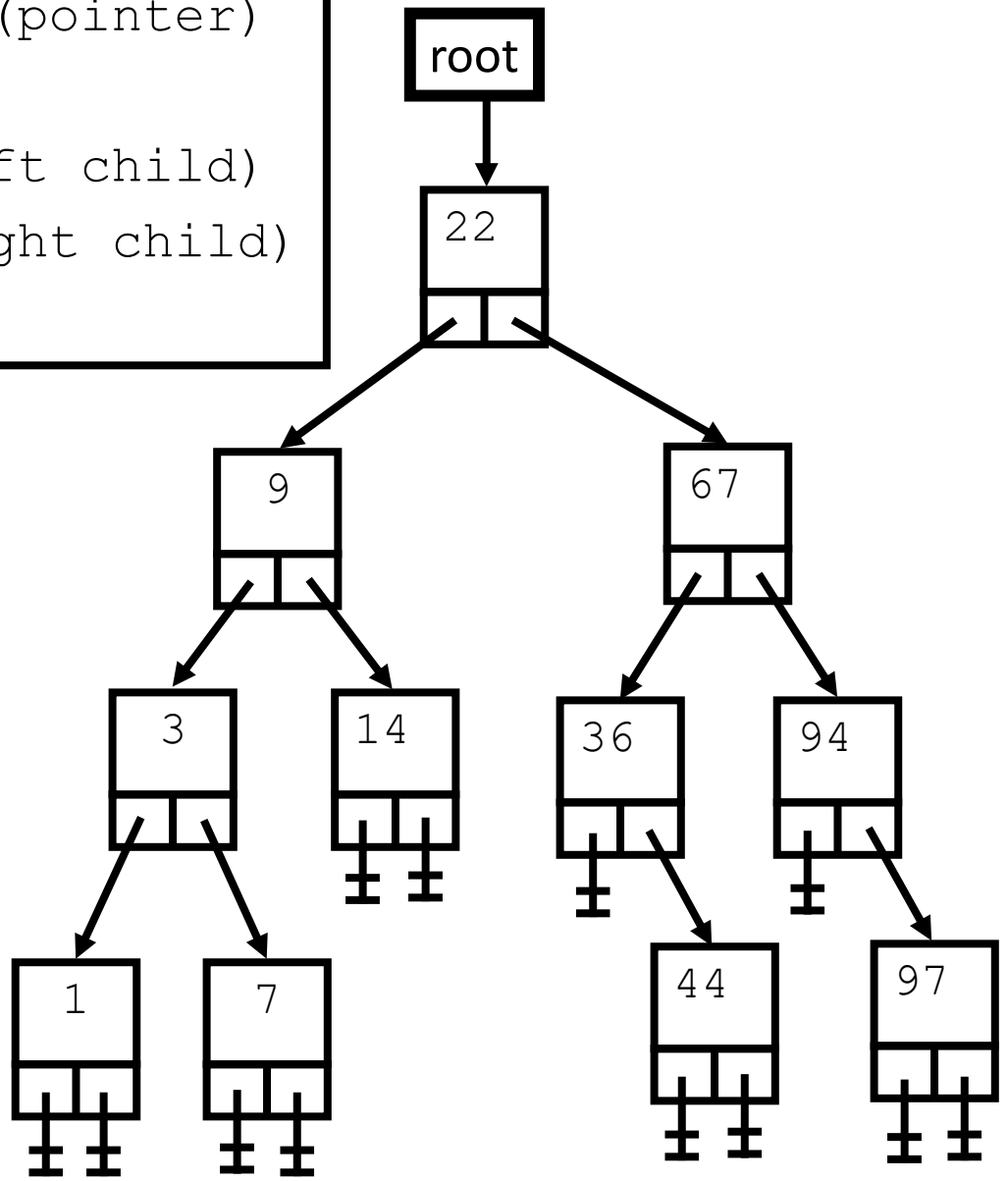


- Traverse the tree “Post order”:
  - Visit the tree’s left sub-tree
  - Visit right sub-tree
  - Visit the current and do work

Post-Order Traversal Procedure

```
procedure Post_Order(cur iot in Ptr toa Tree_Node)
  // Purpose: perform post-order traversal, call
  //          DoWhatever for each node
  // Preconditions: cur points to a binary tree
  // Postcondition: DoWhatever will be performed
  // on each tree node in "post-order" order
      if( cur <> NIL ) then
        Post_Order( cur^.left_child )
        Post_Order( cur^.right_child )
        Do_Whatever( cur^.data )
    endif
  endprocedure   // Post_Order
```

```
Proc PostOrderPrint(pointer)
 pointer NOT NIL?
L PostOrderPrint(left child)
R PostOrderPrint(right child)
P print(data)
```



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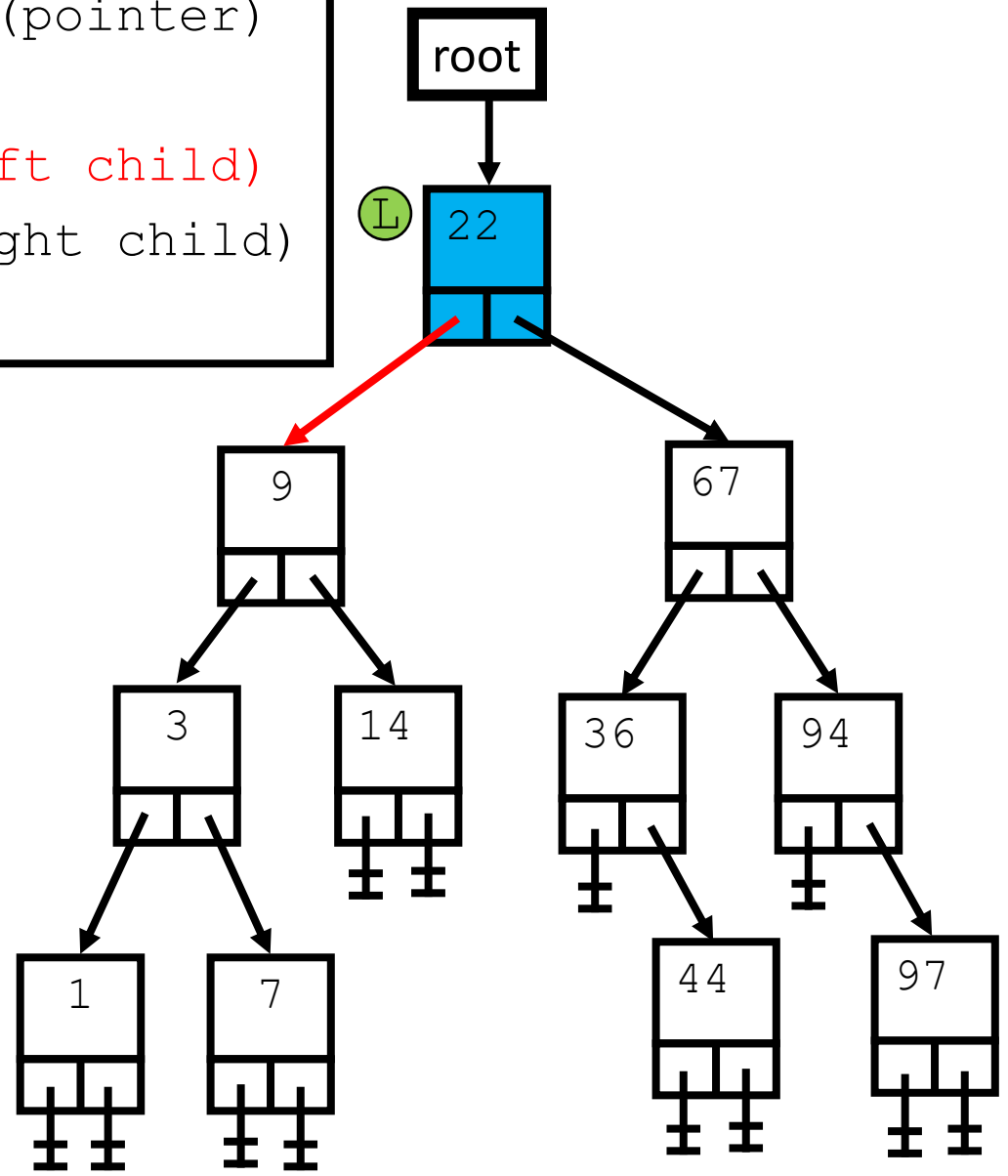

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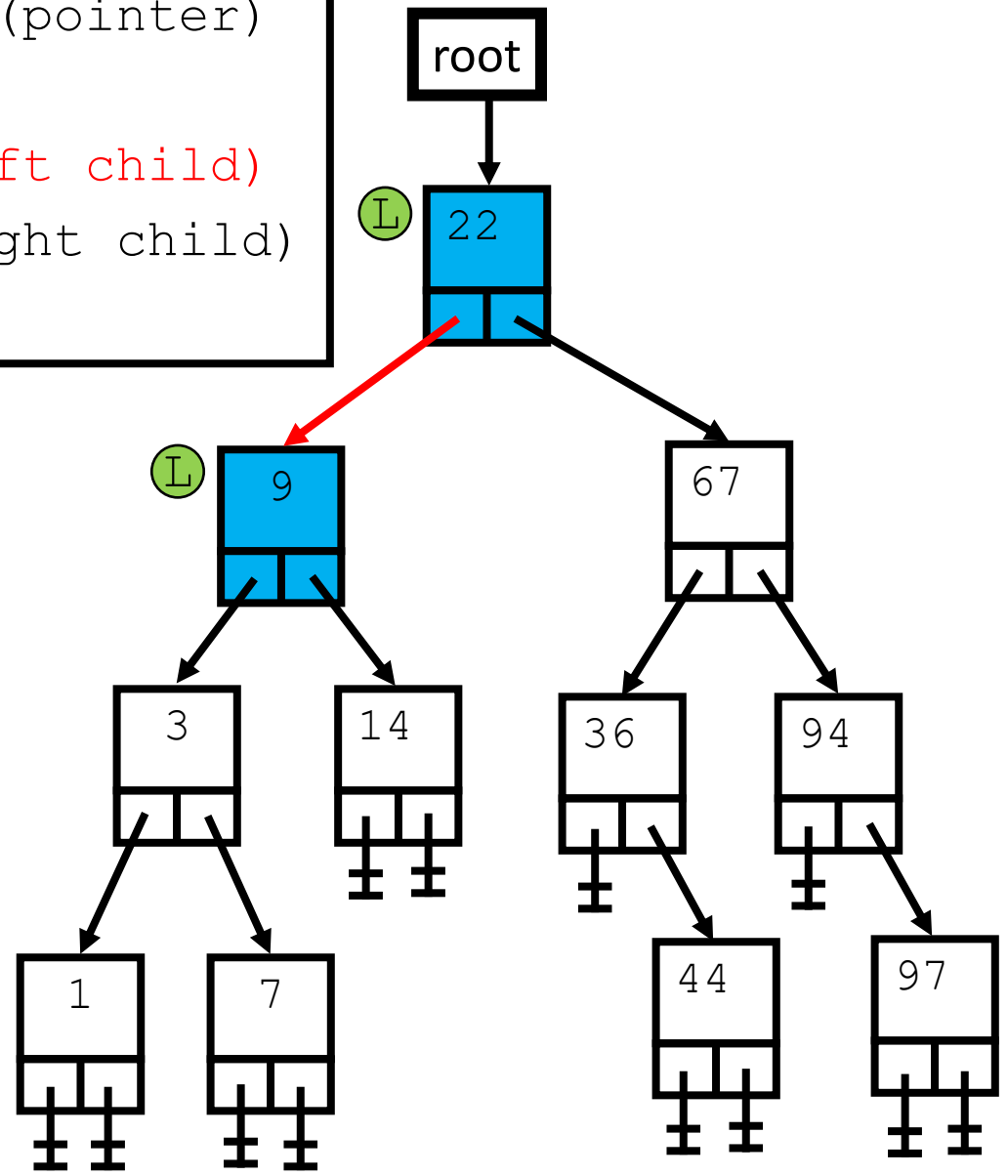

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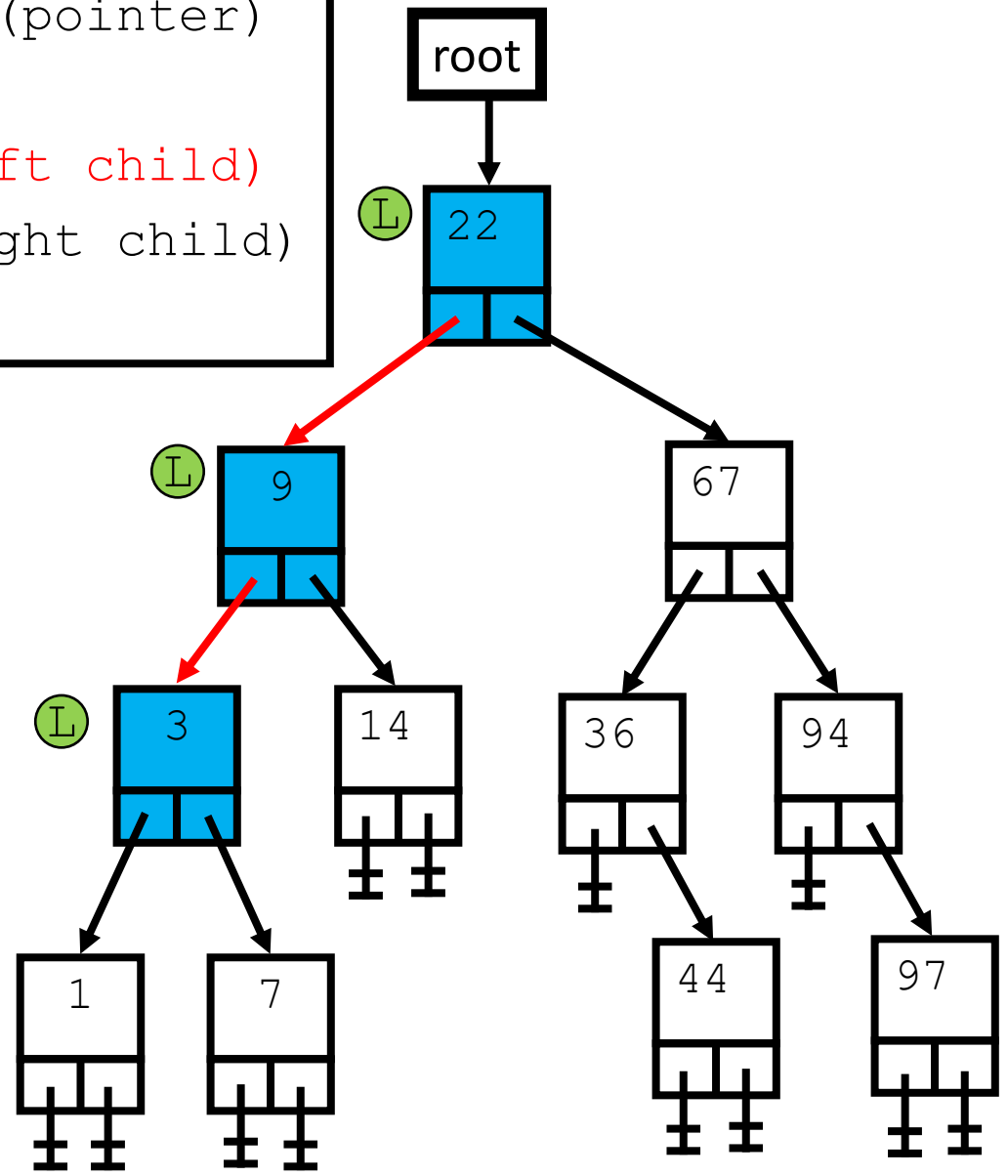

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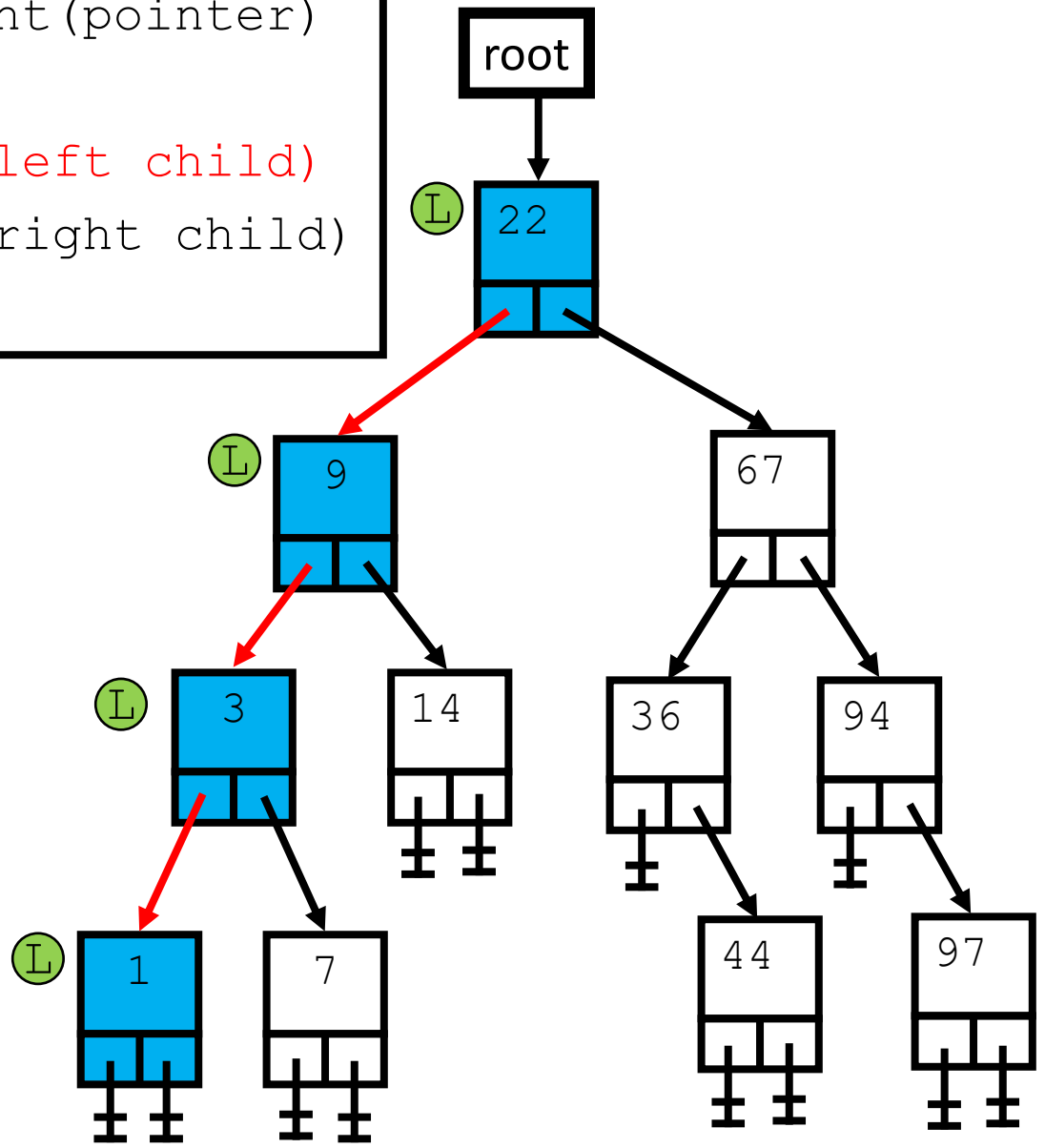

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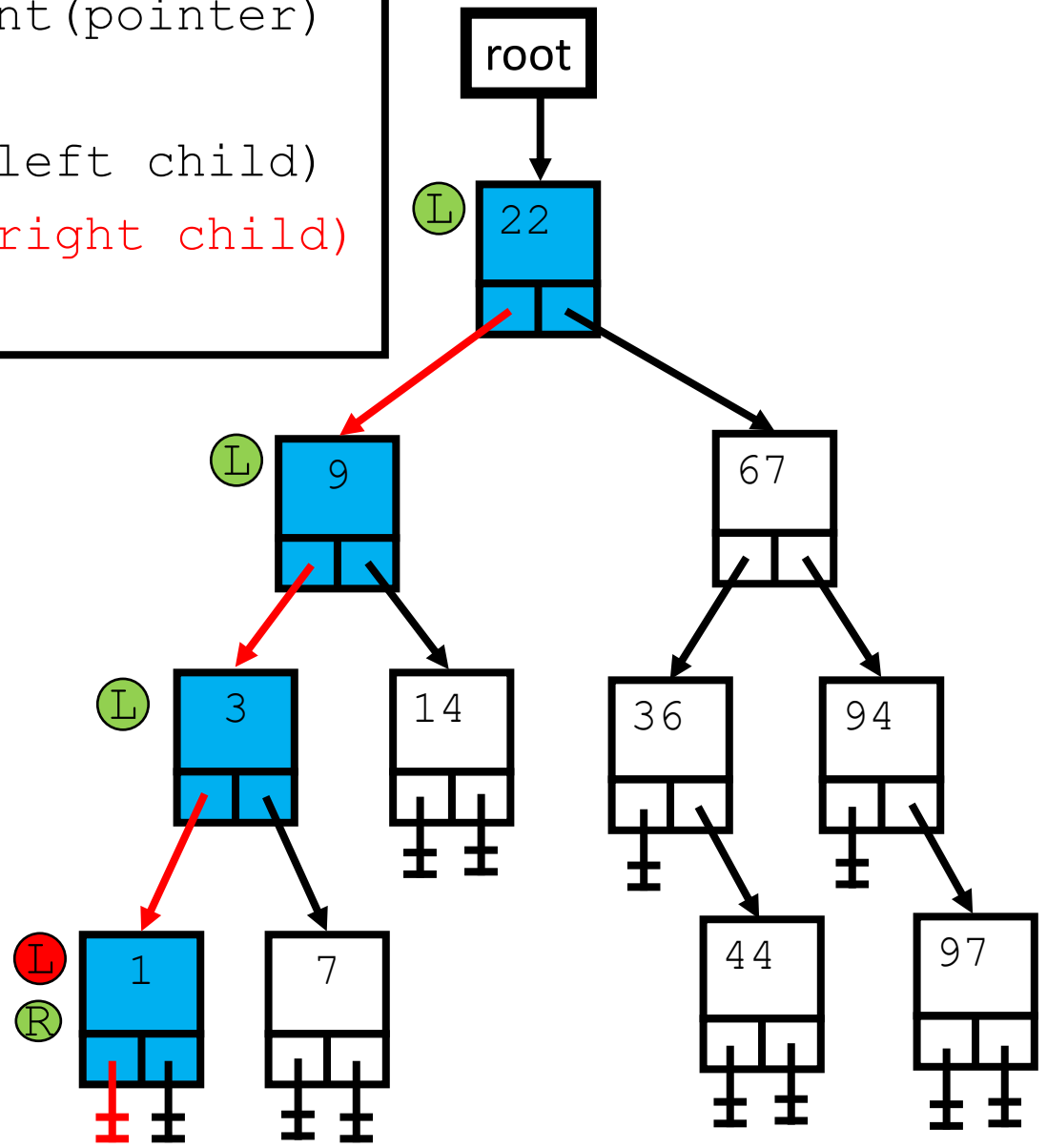

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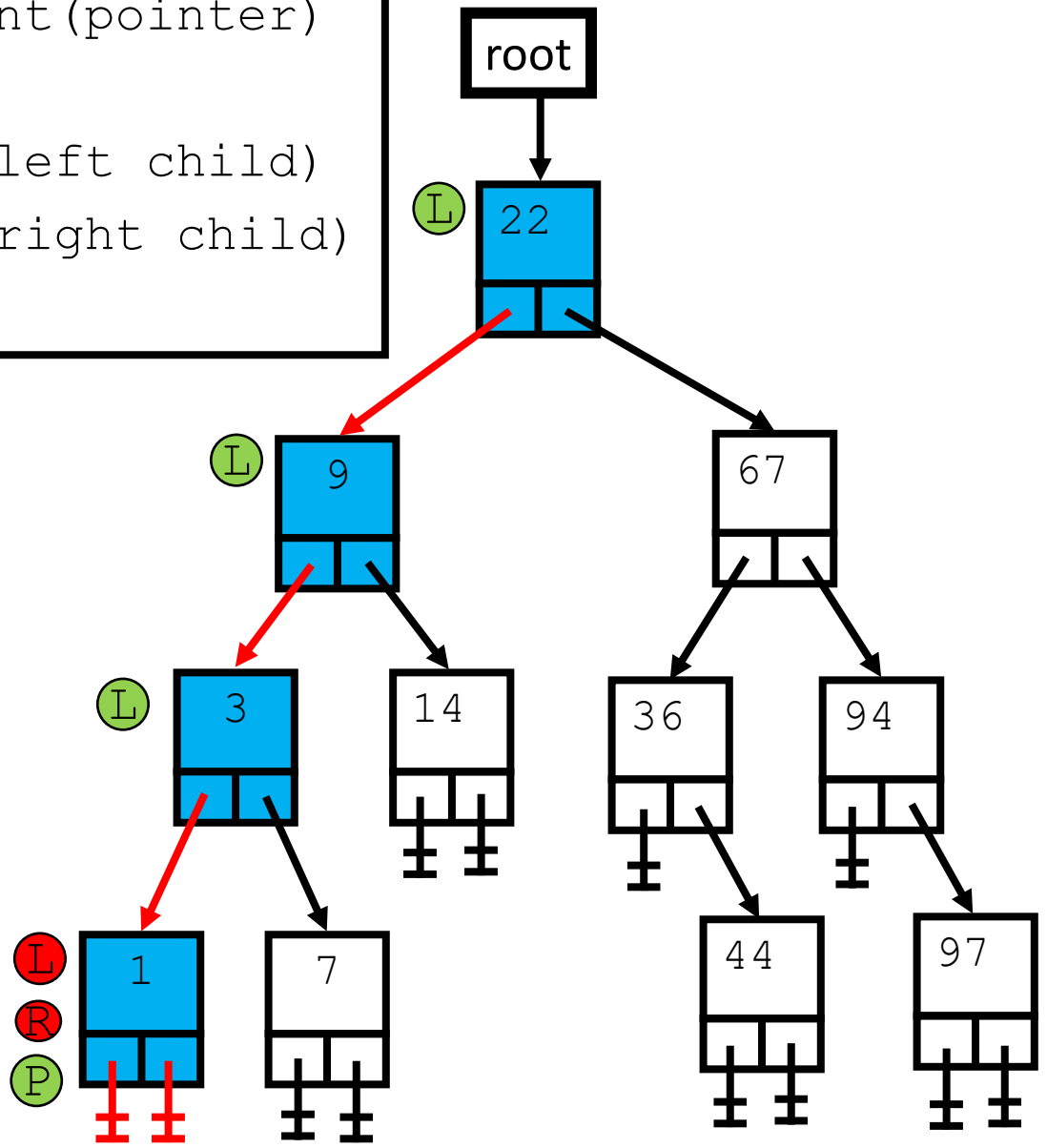
```
Output: 1
```



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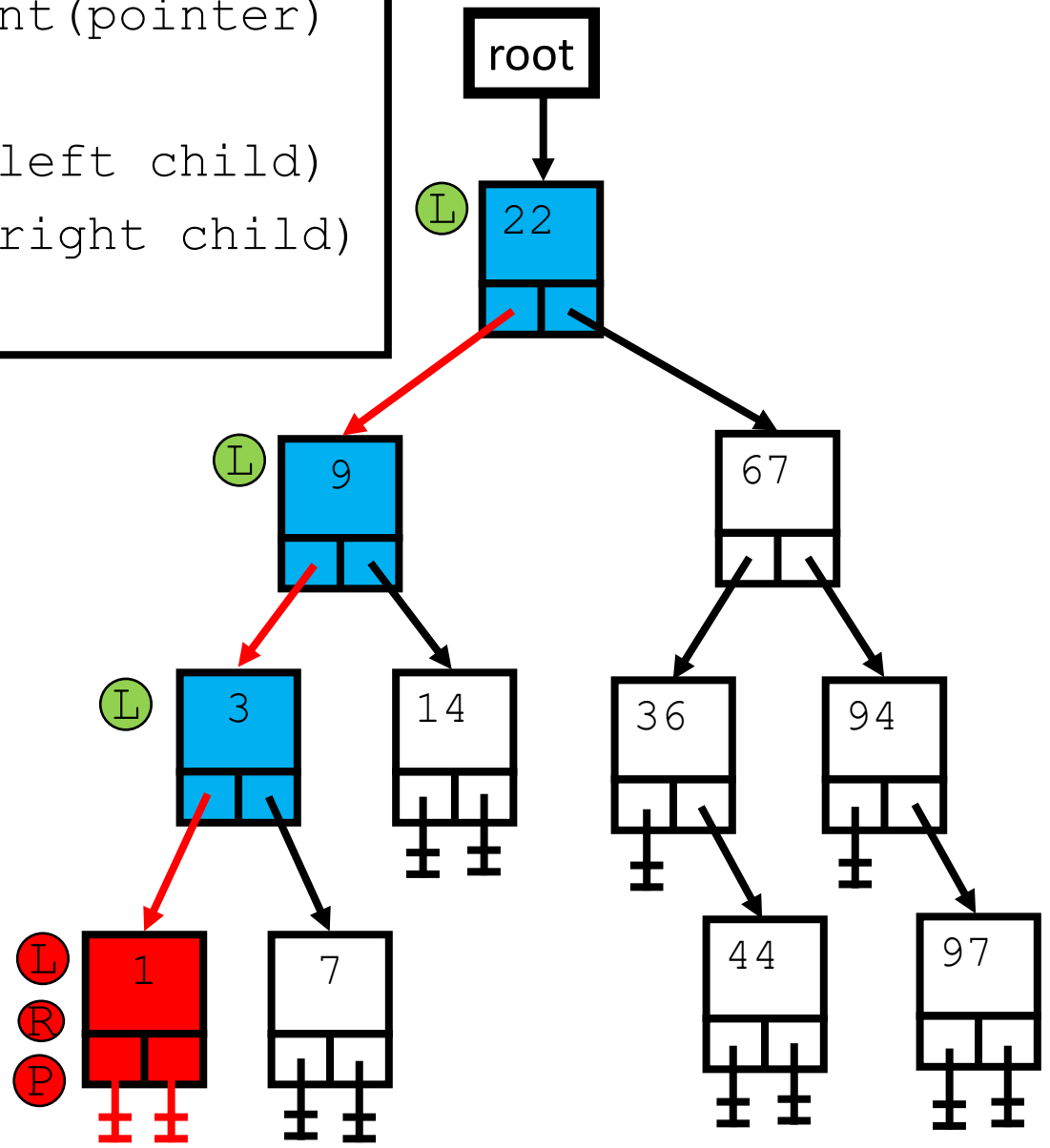

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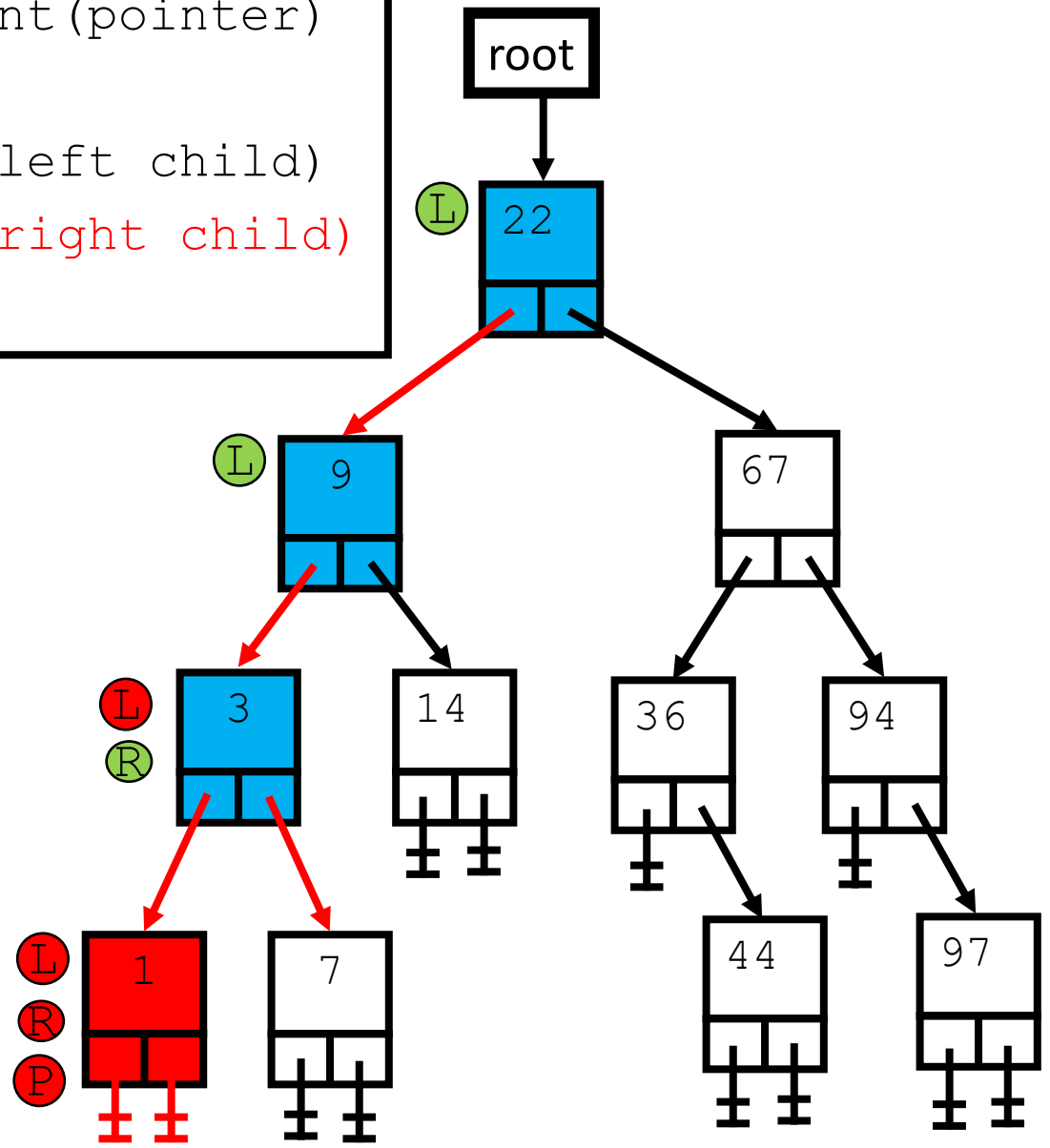

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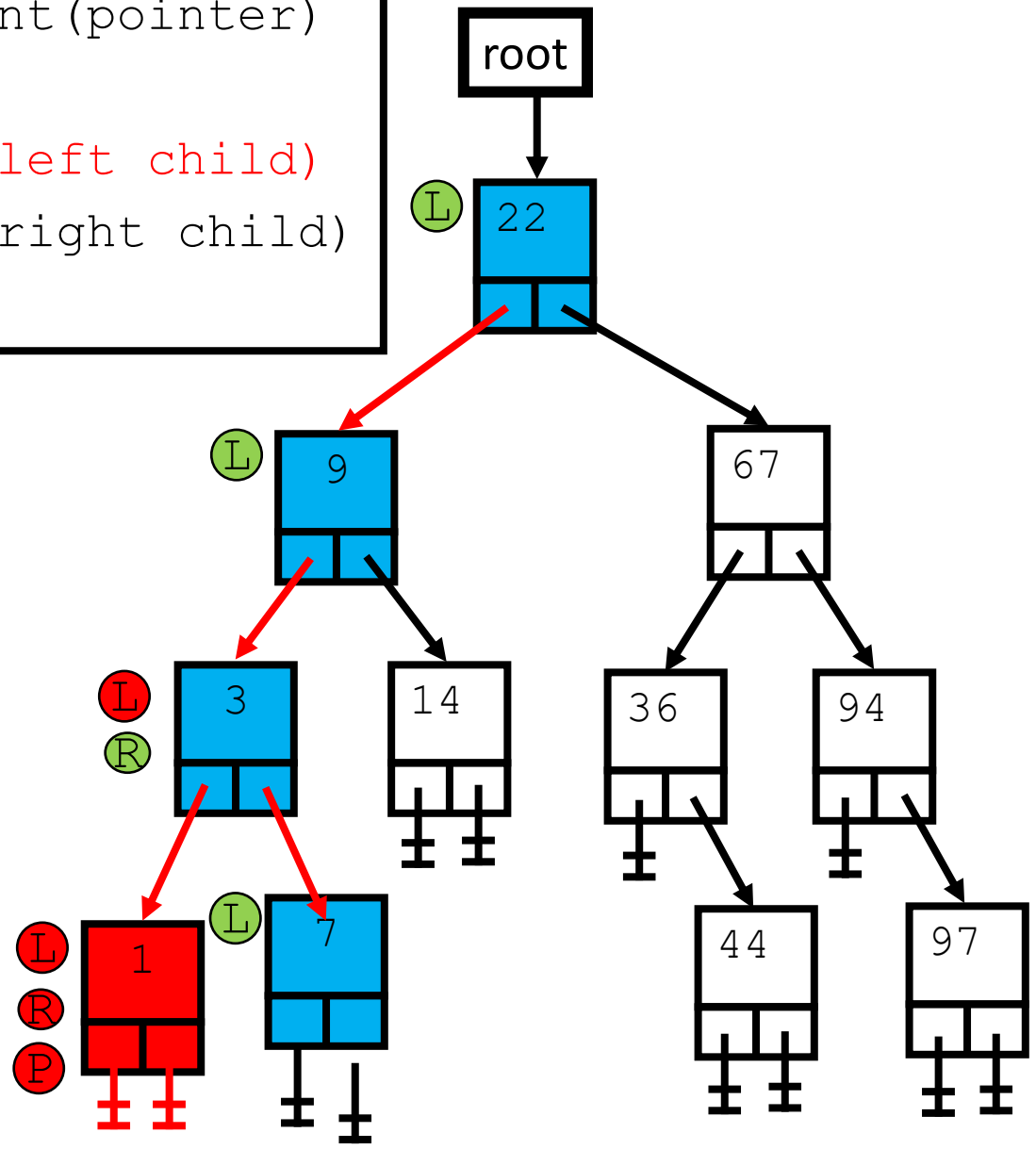

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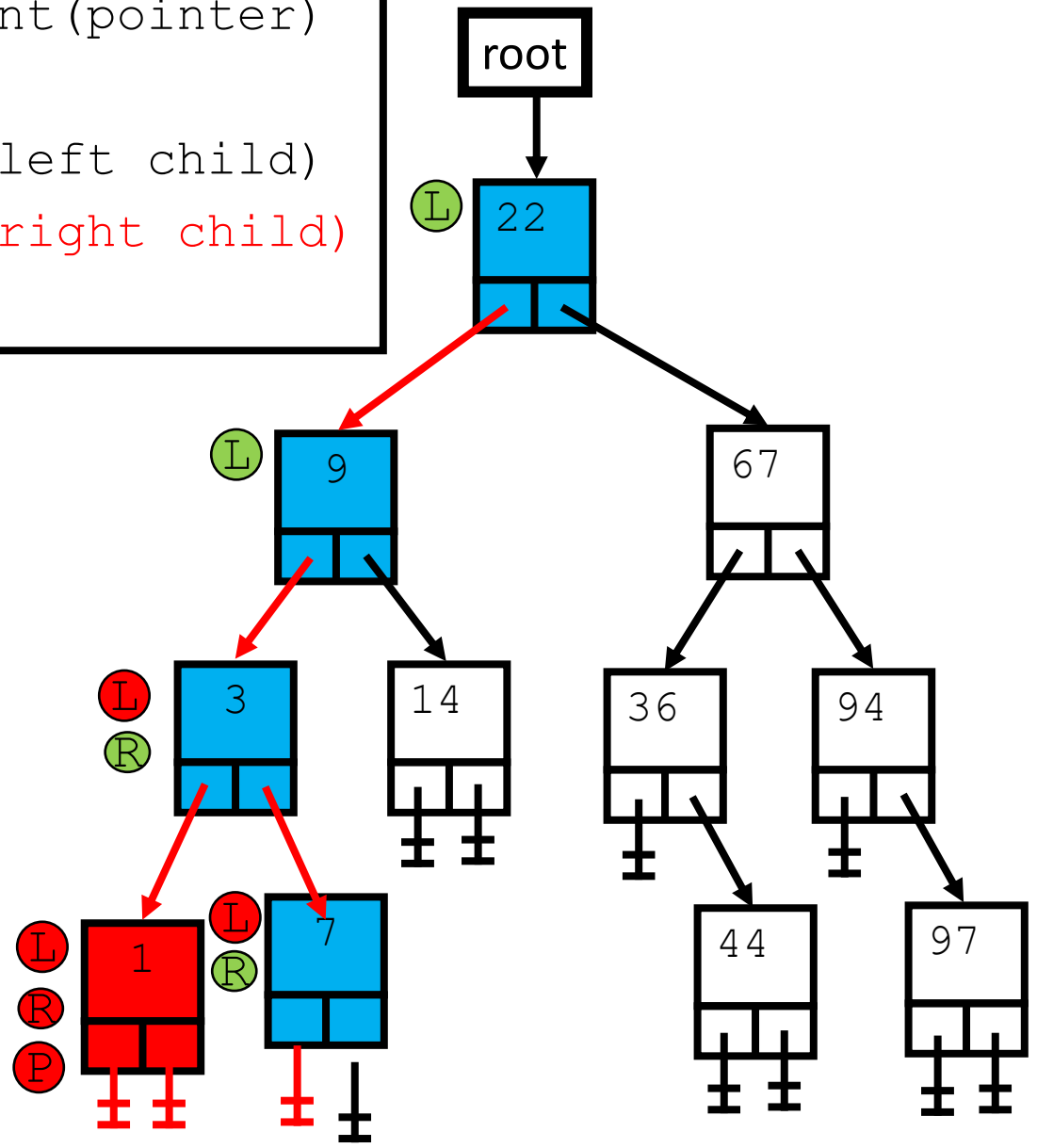

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Output: 1 7
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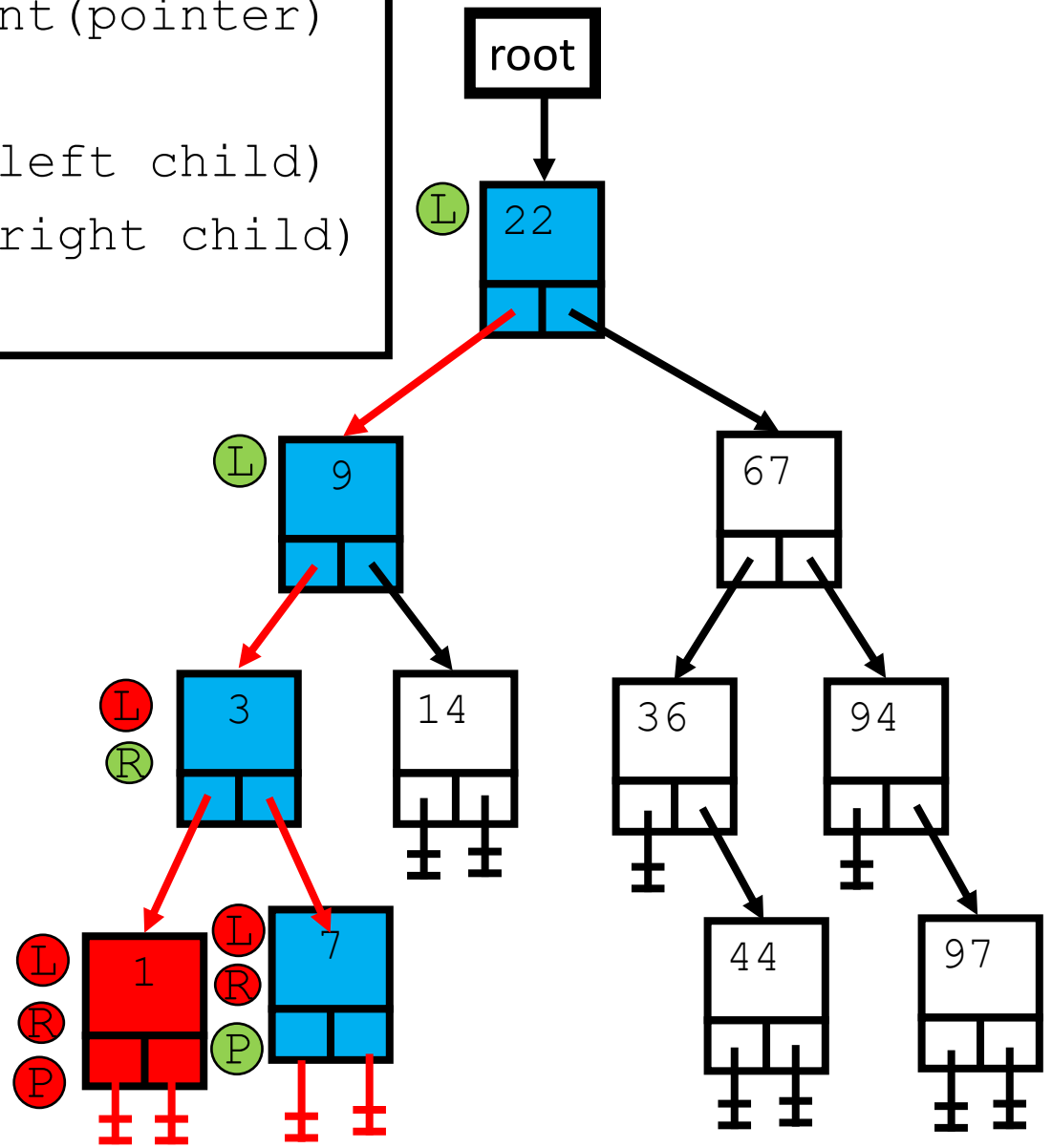

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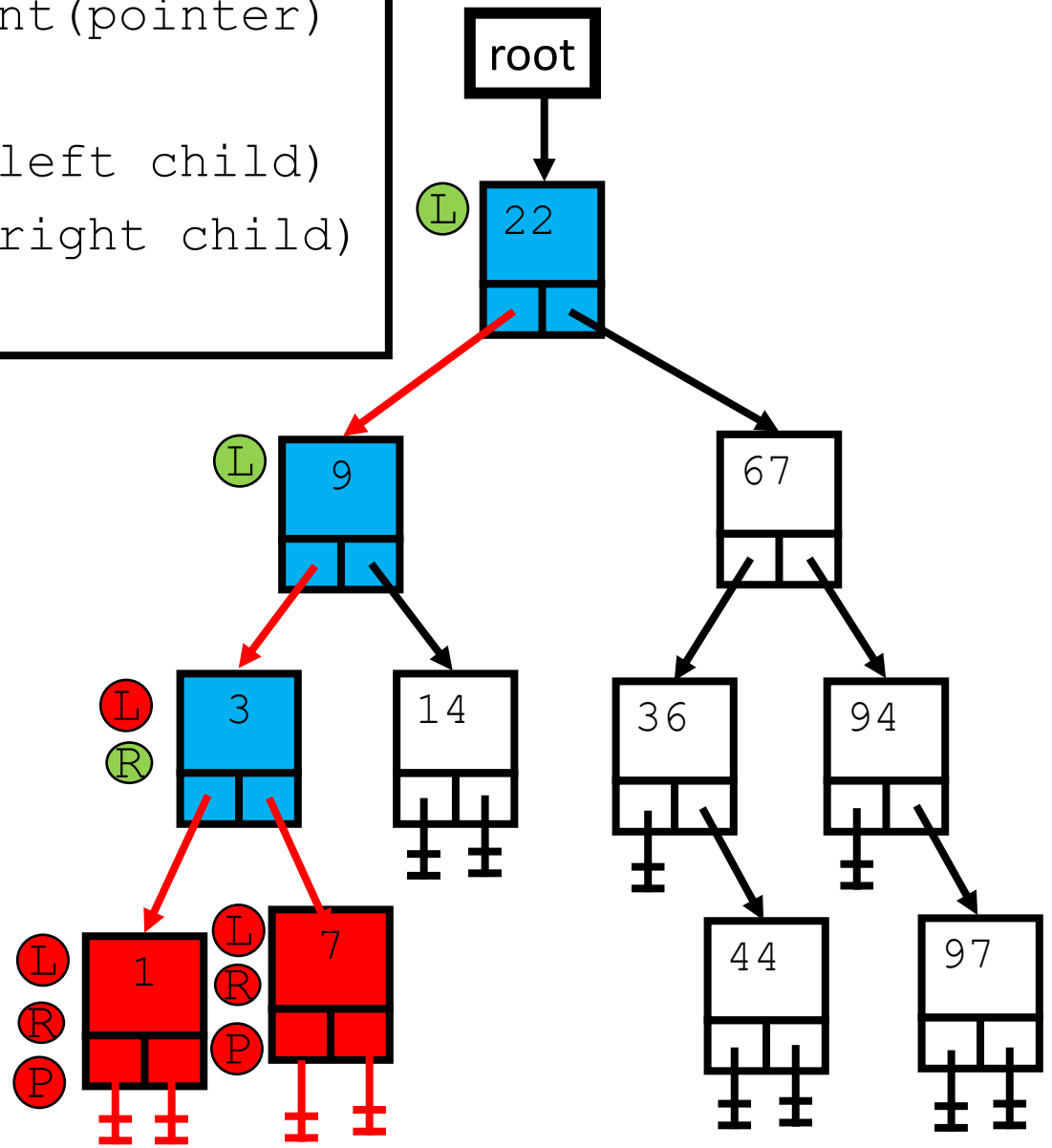

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Output: 1 7 3
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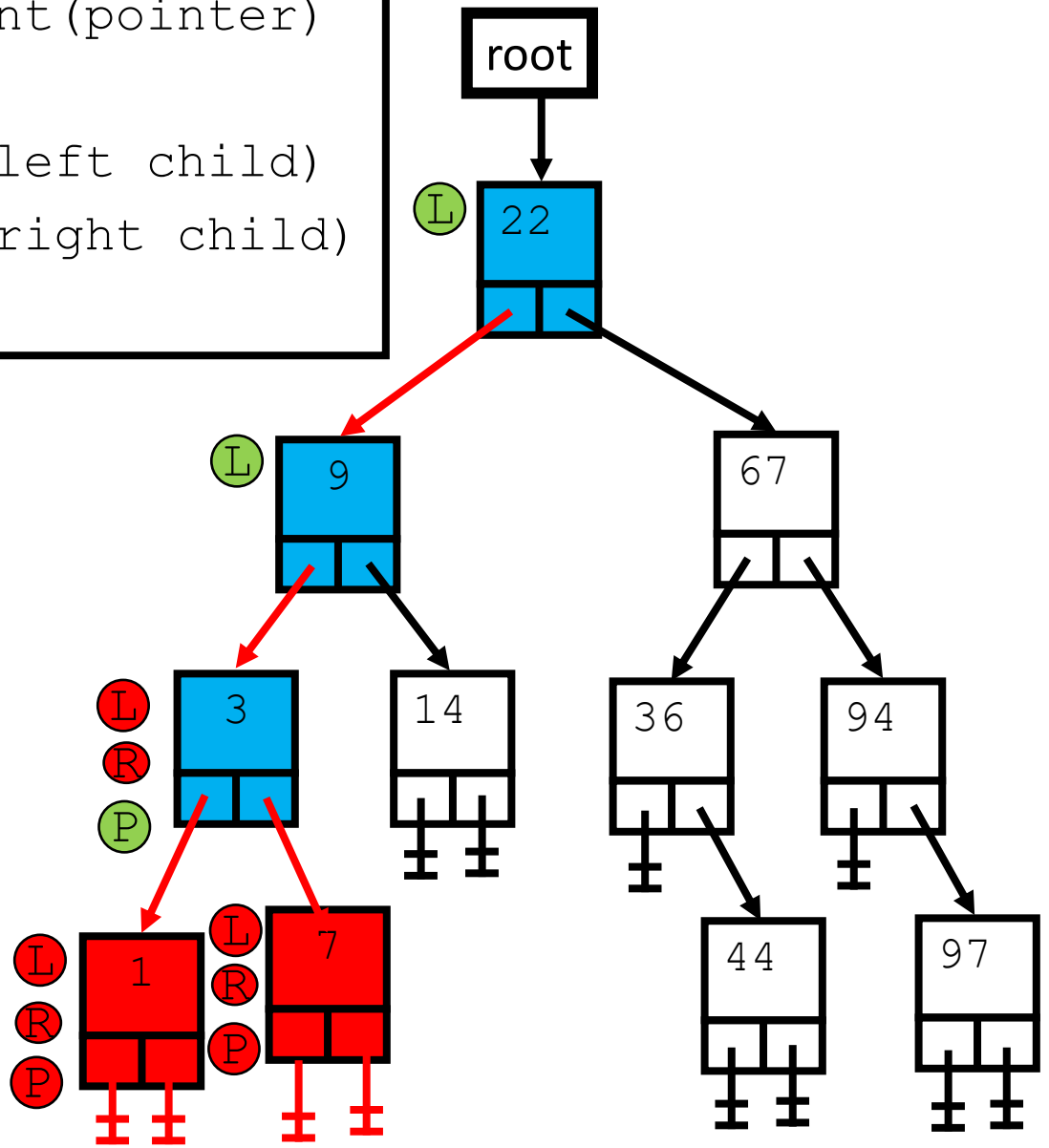

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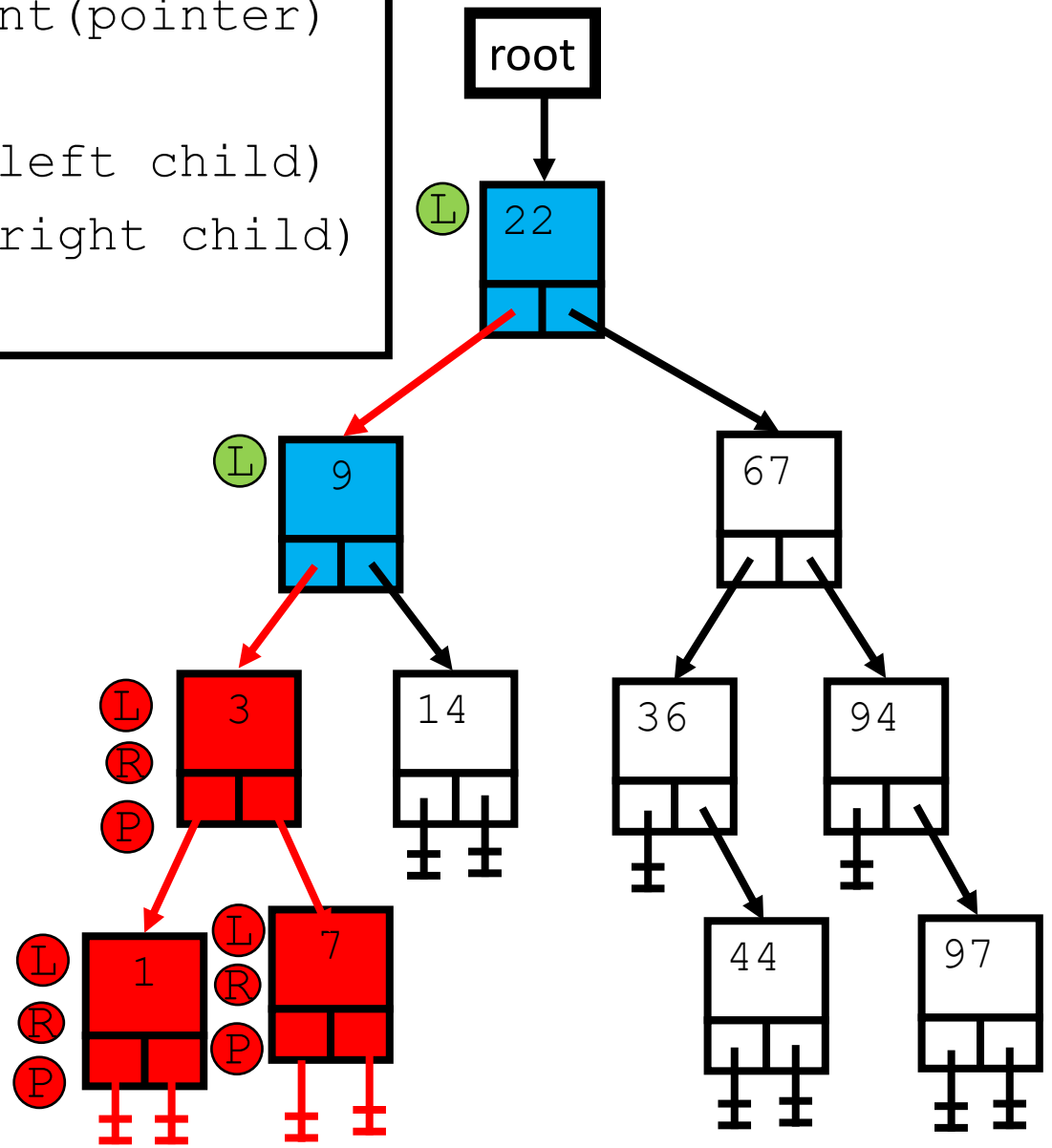

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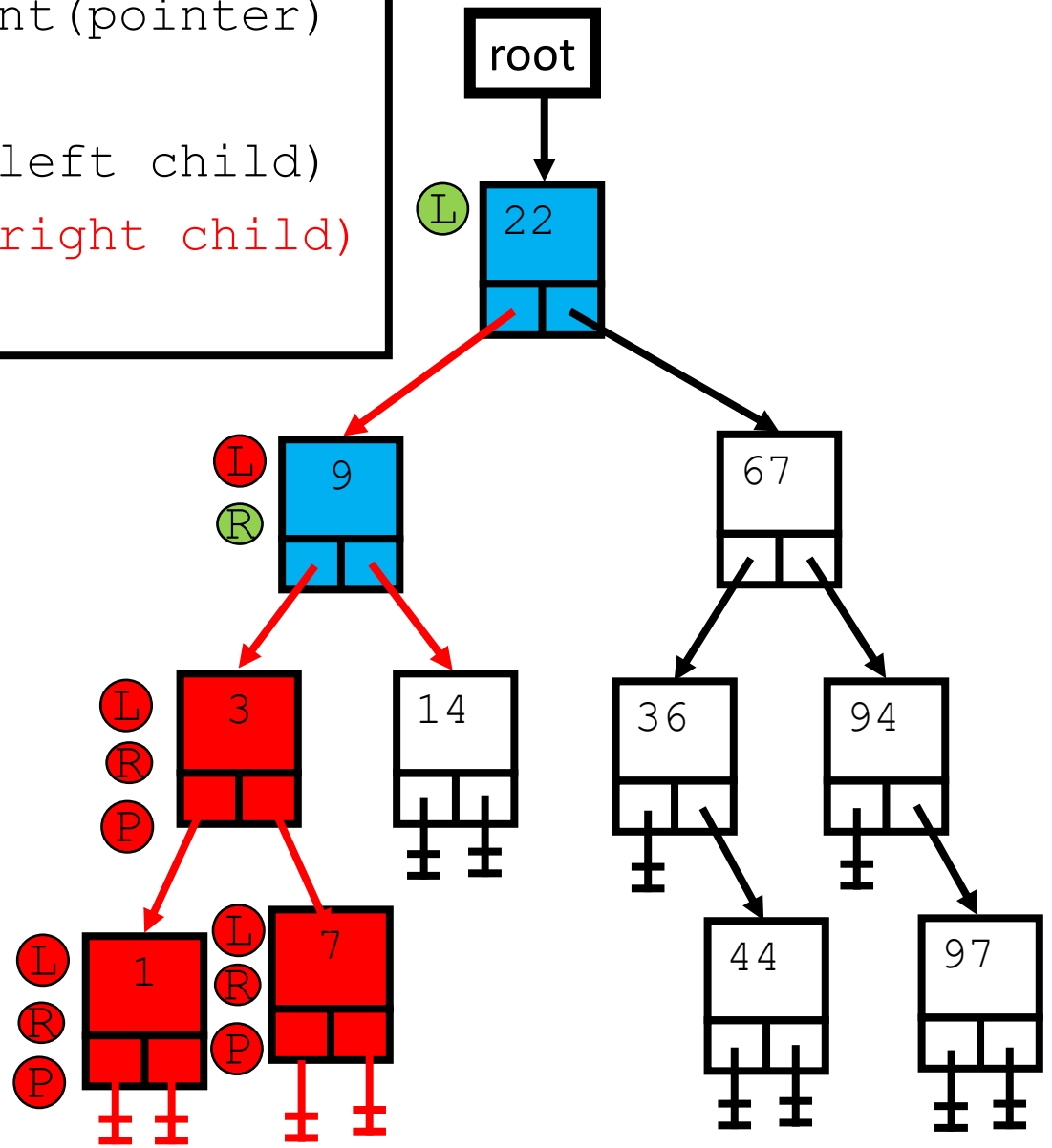

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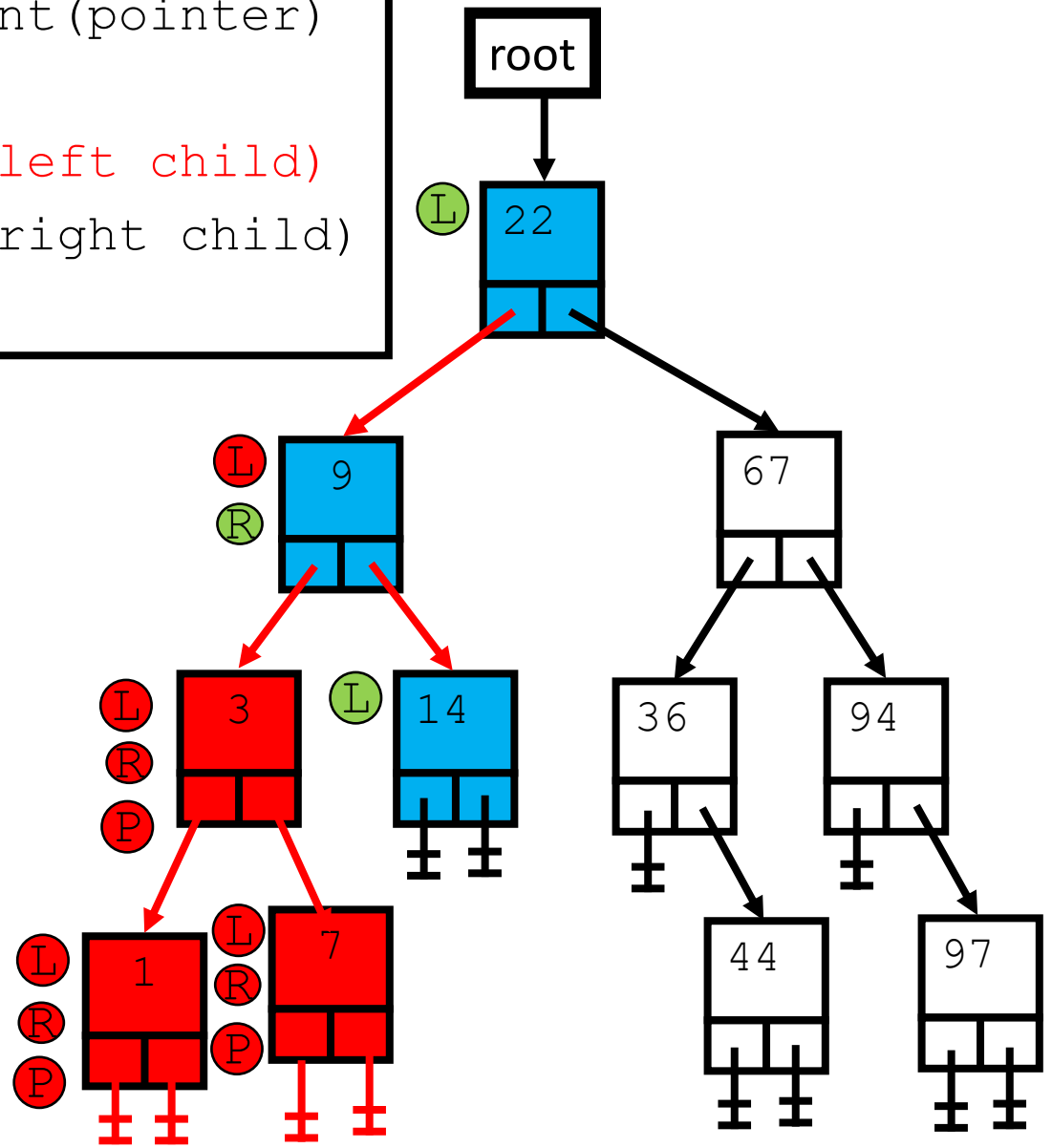

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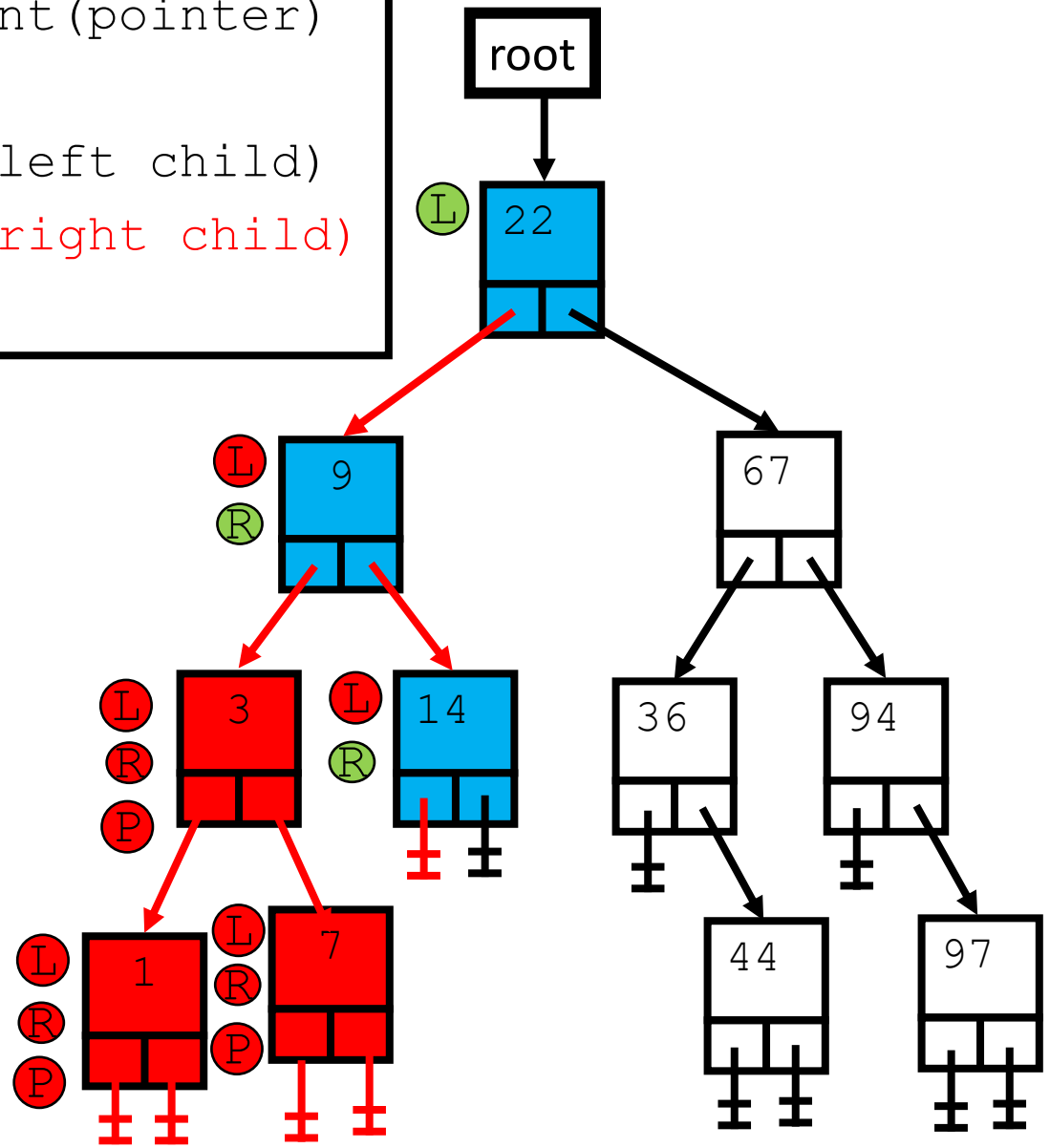

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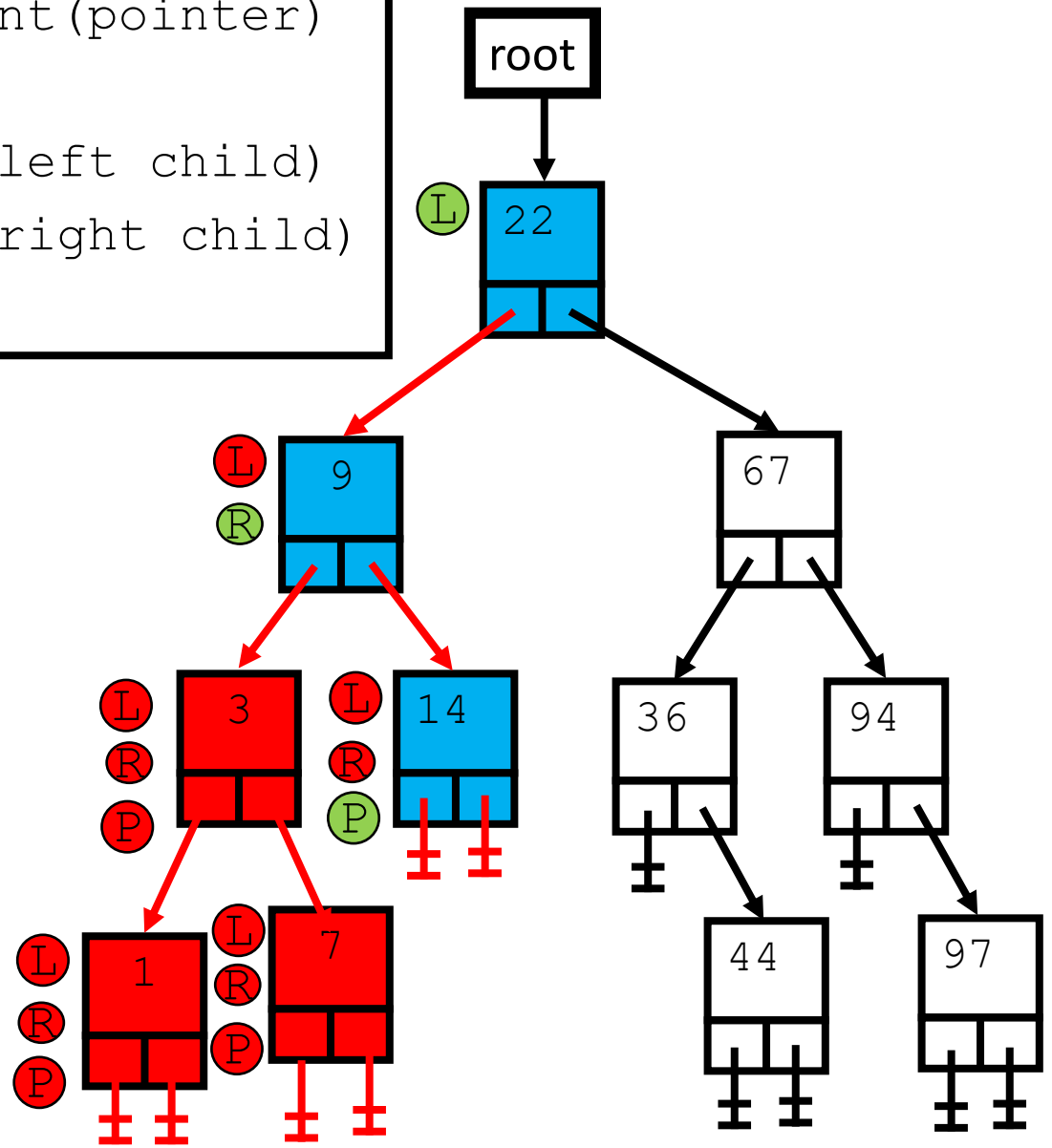
```
Output: 1 7 3 14
```



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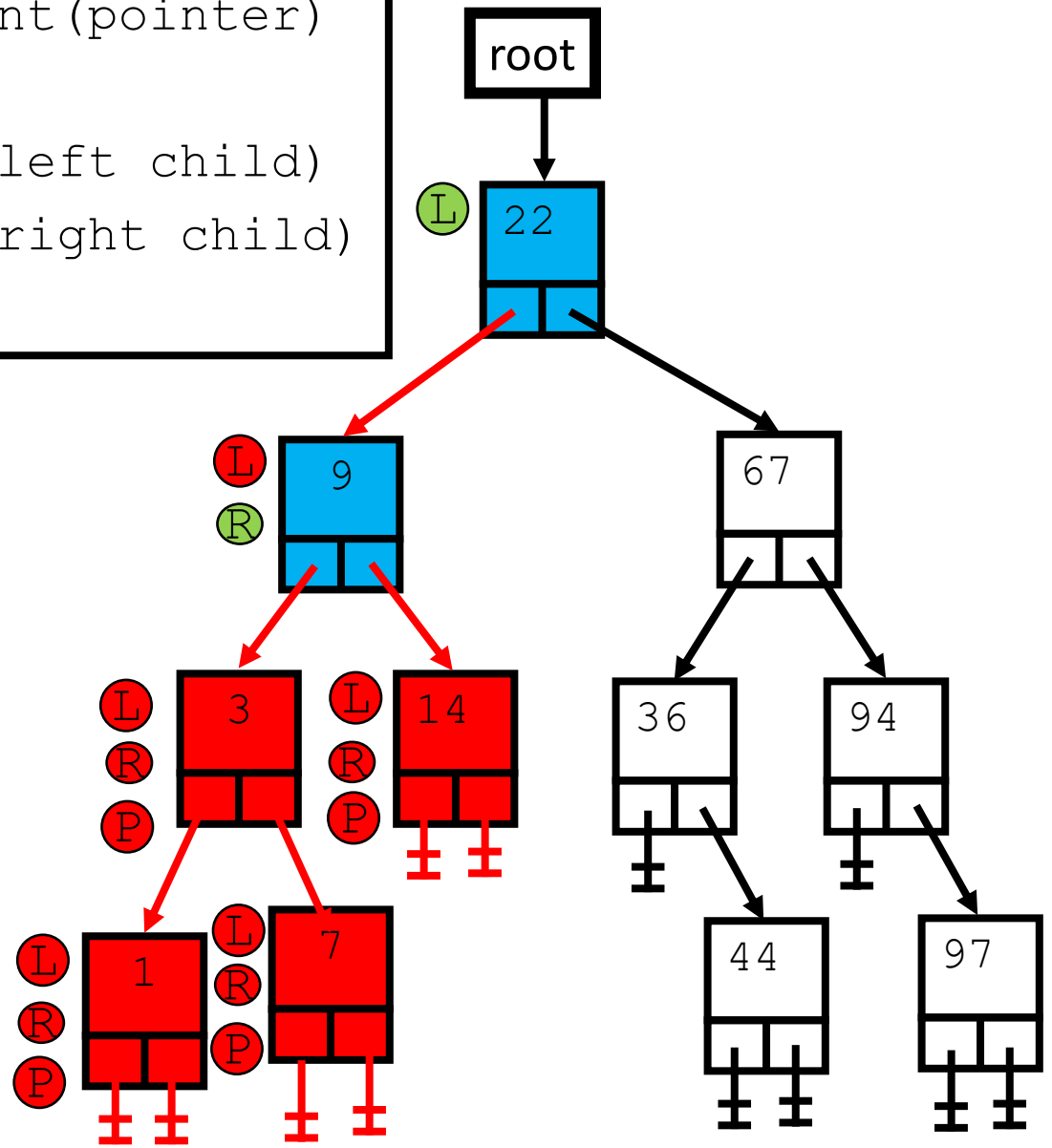

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Proc PostOrderPrint(pointer)
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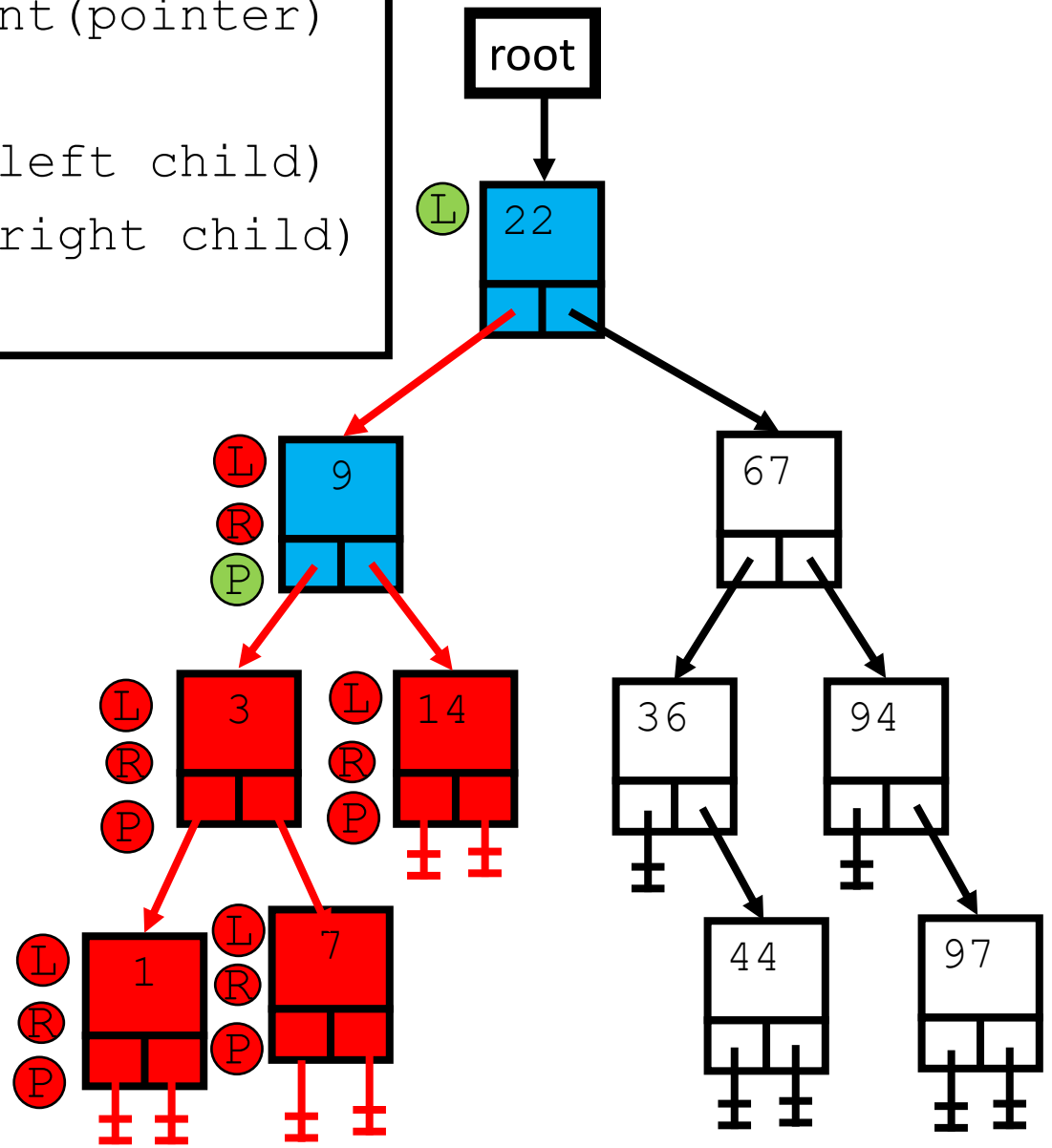
```
Output: 1 7 3 14 9
```



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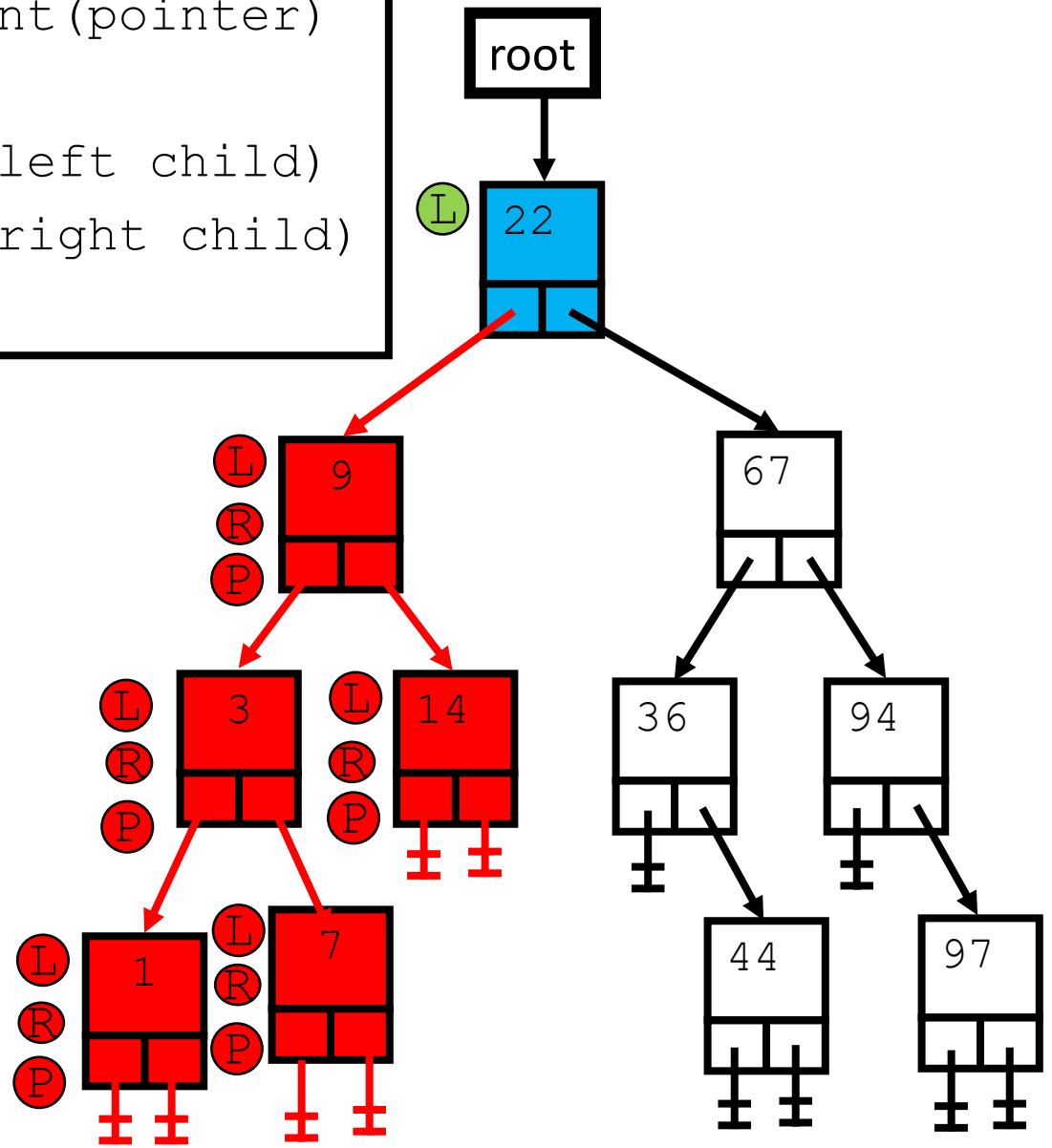

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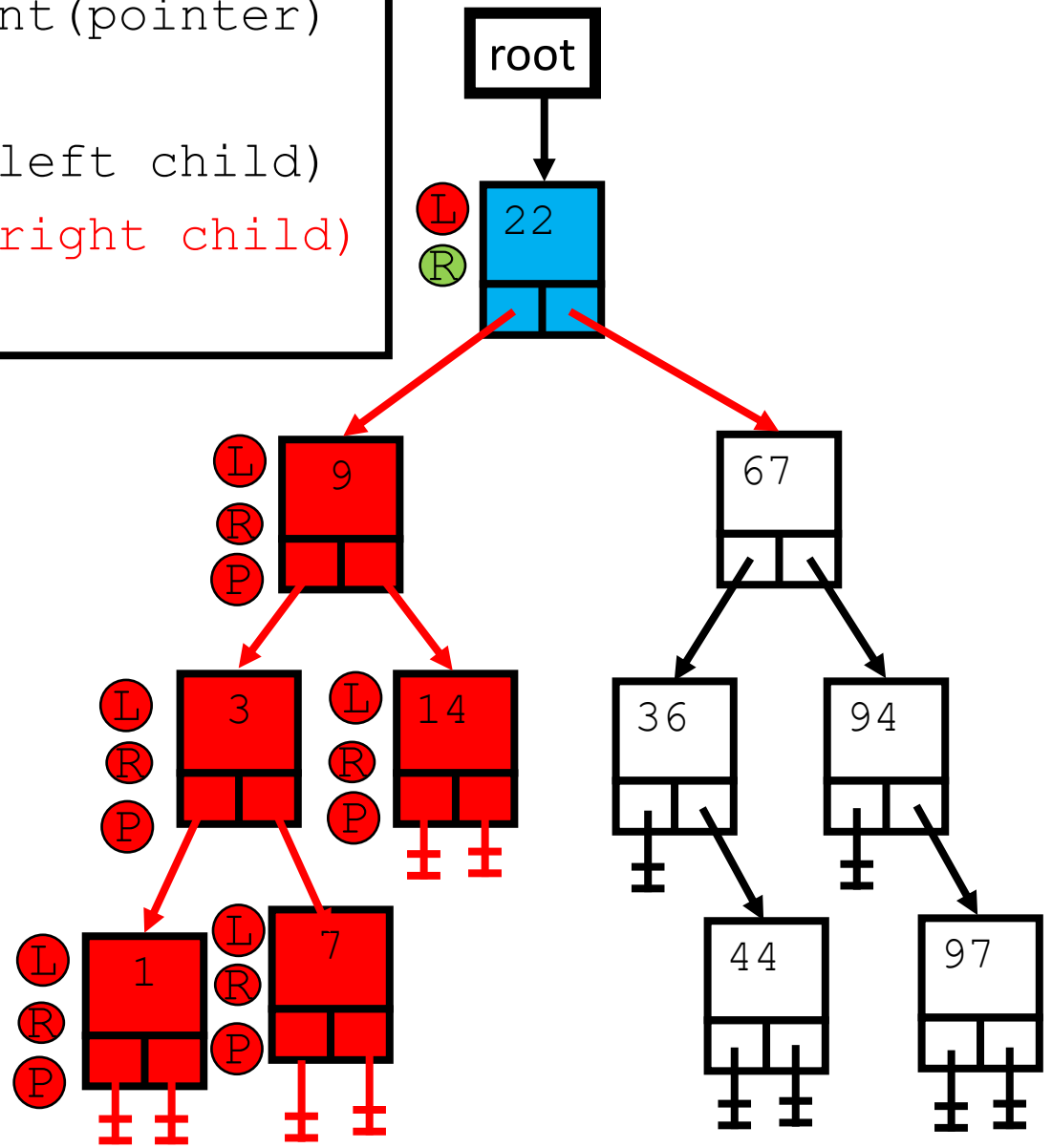

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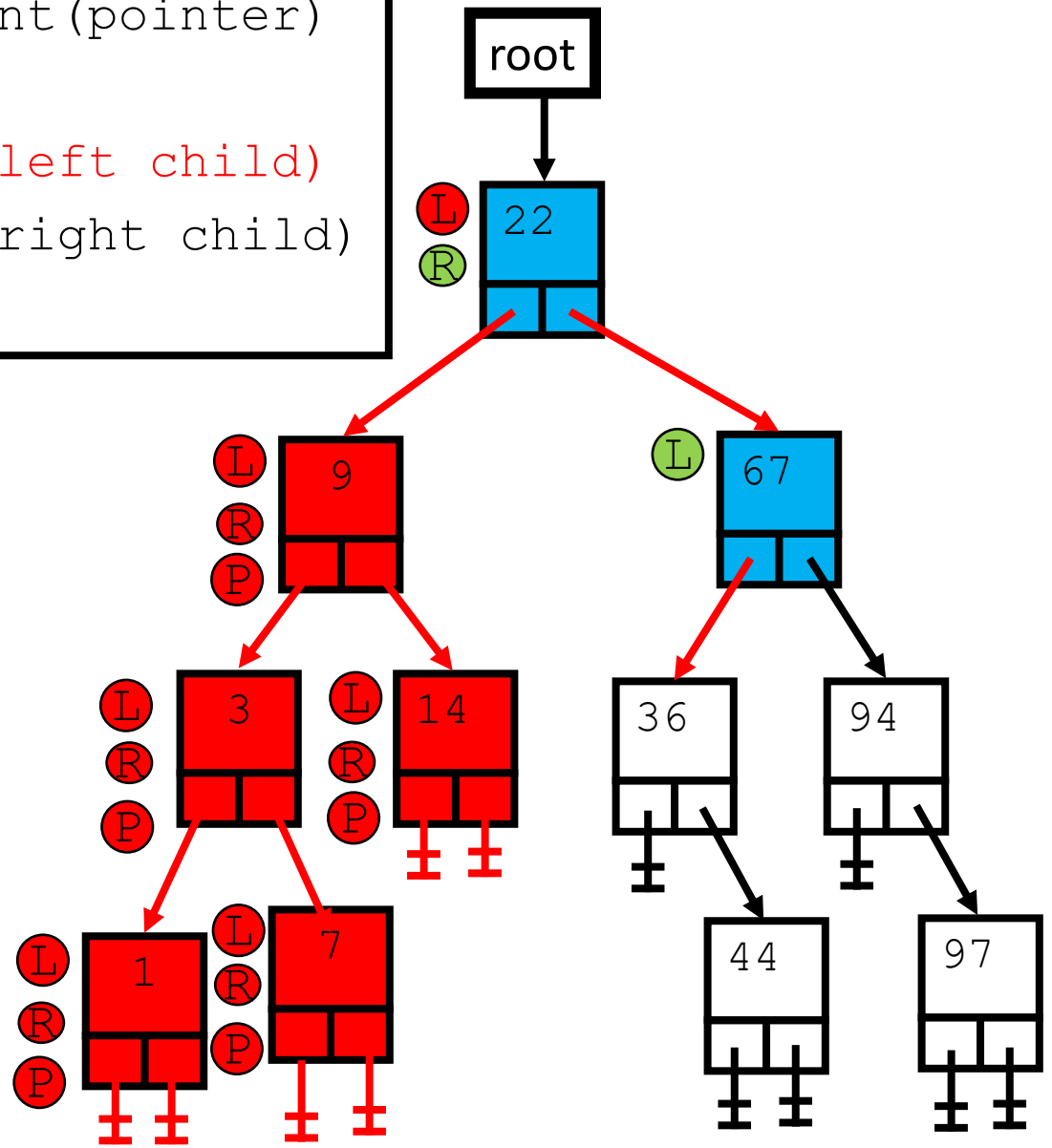

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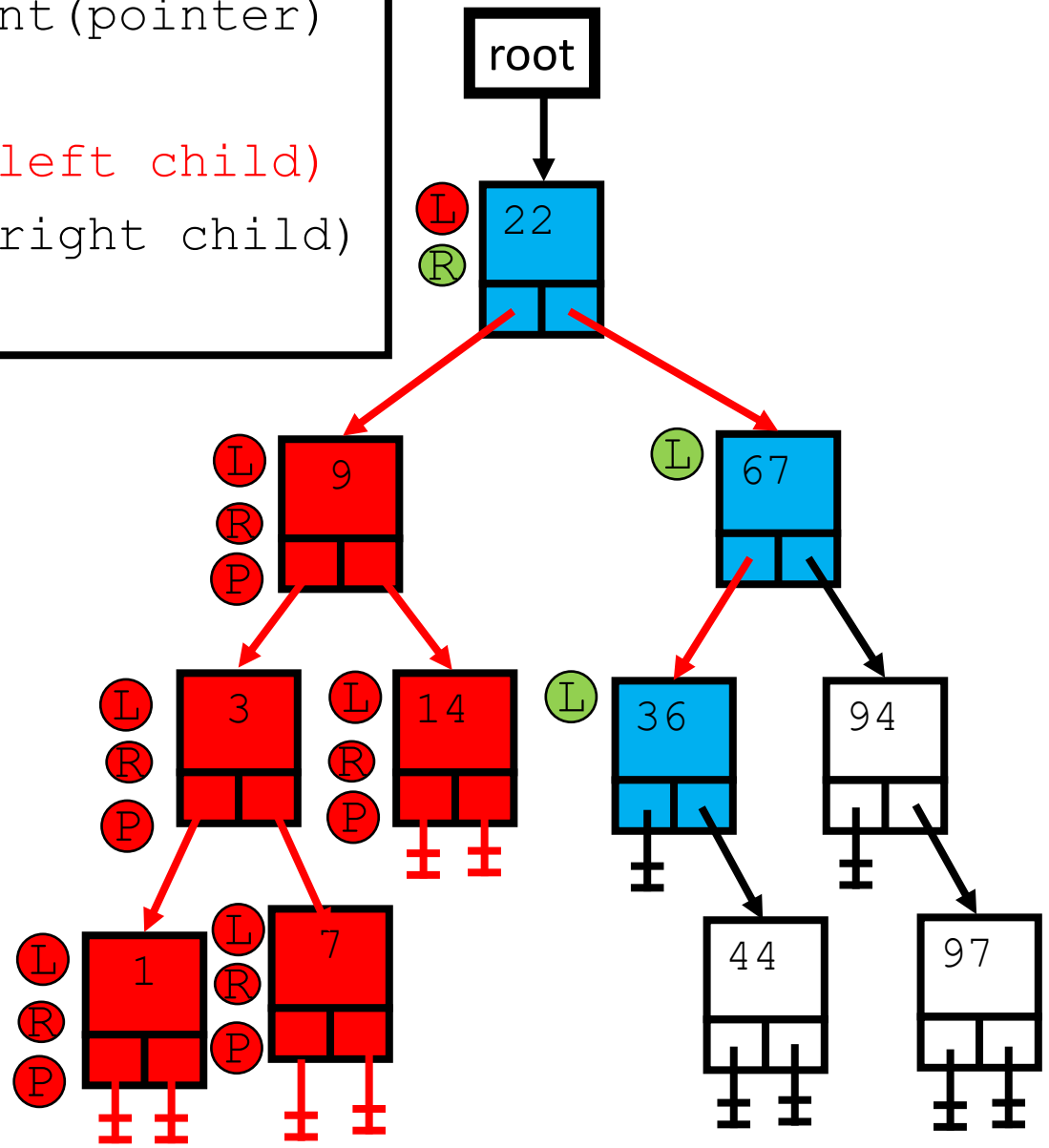

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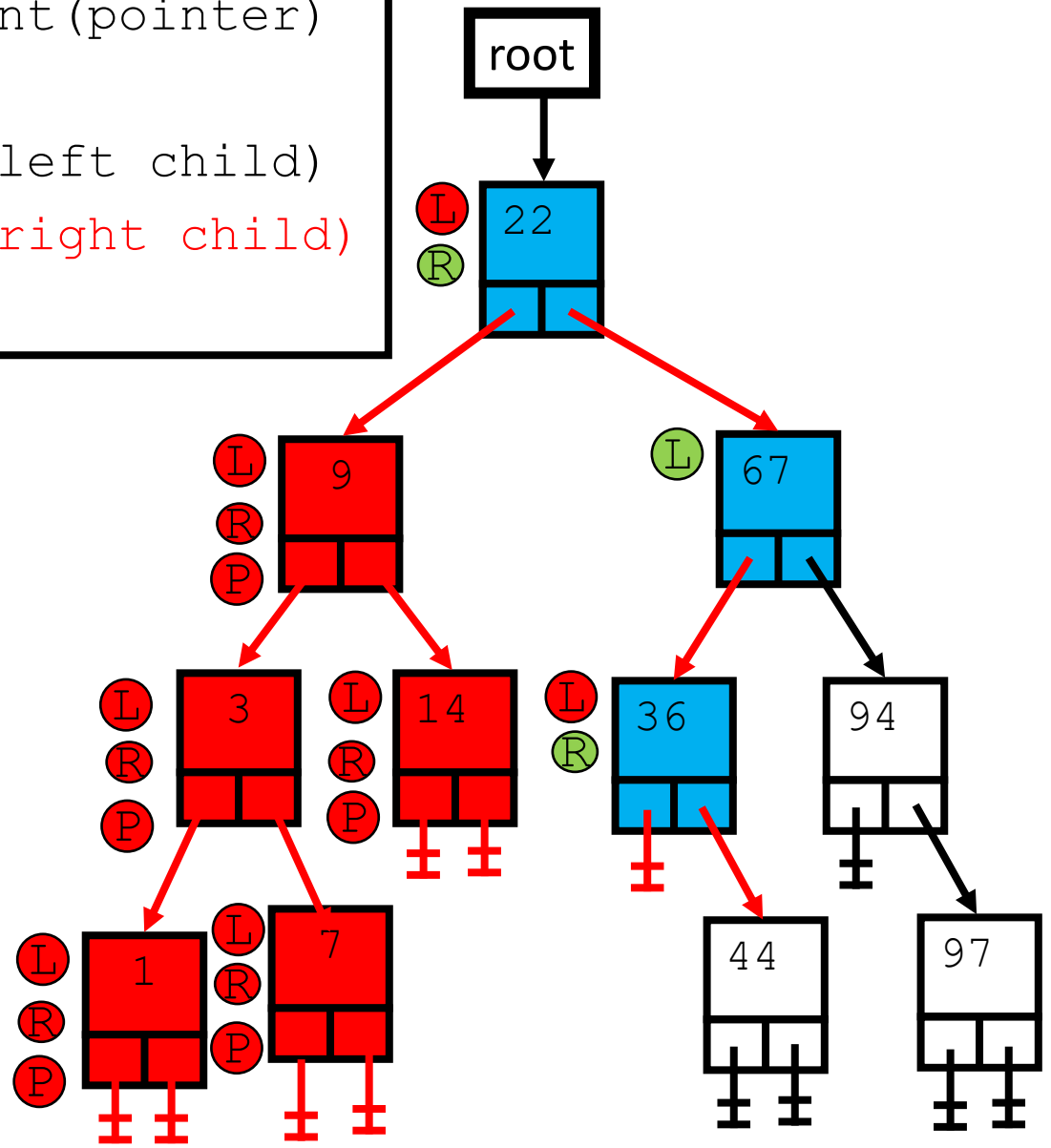

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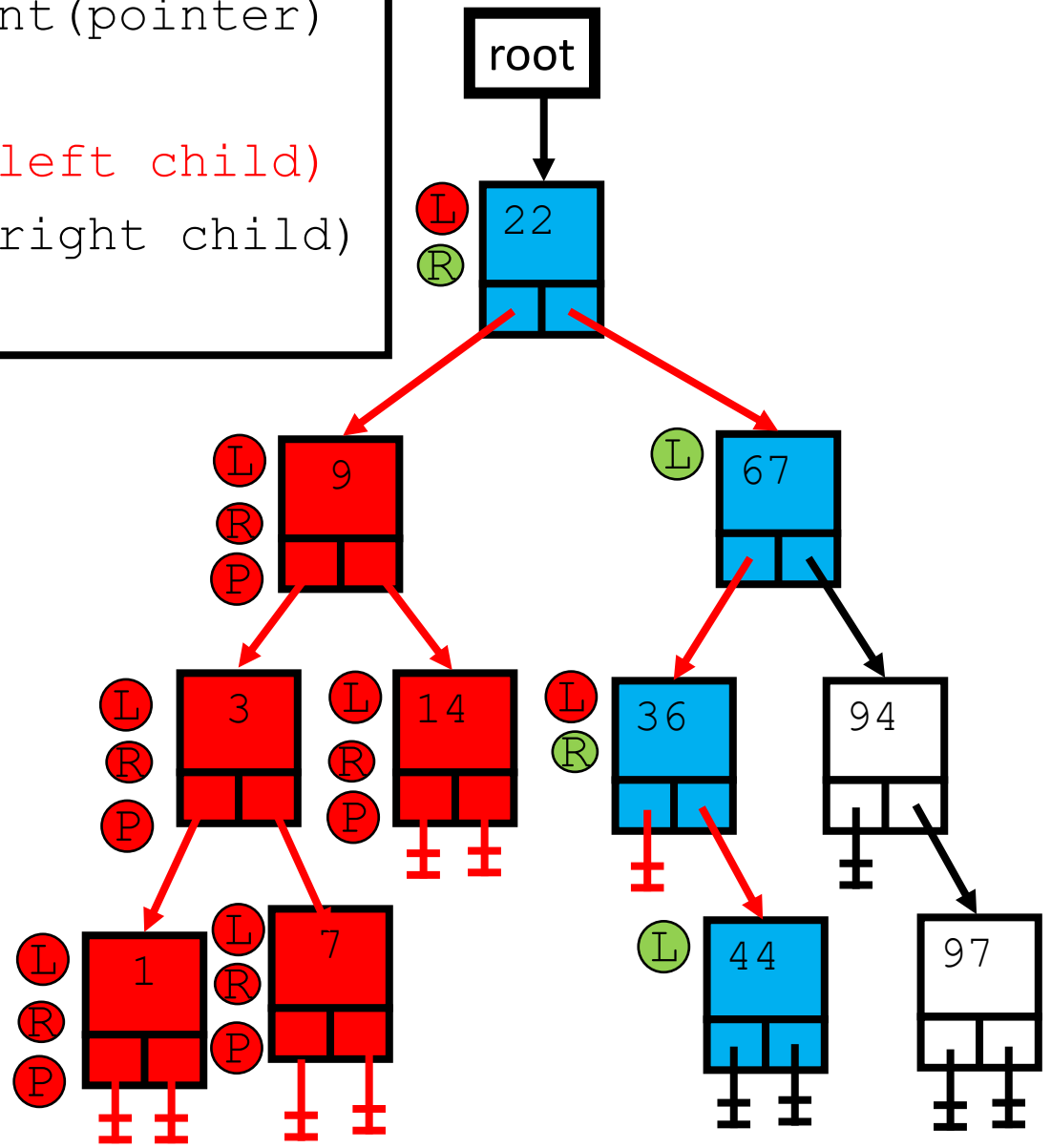

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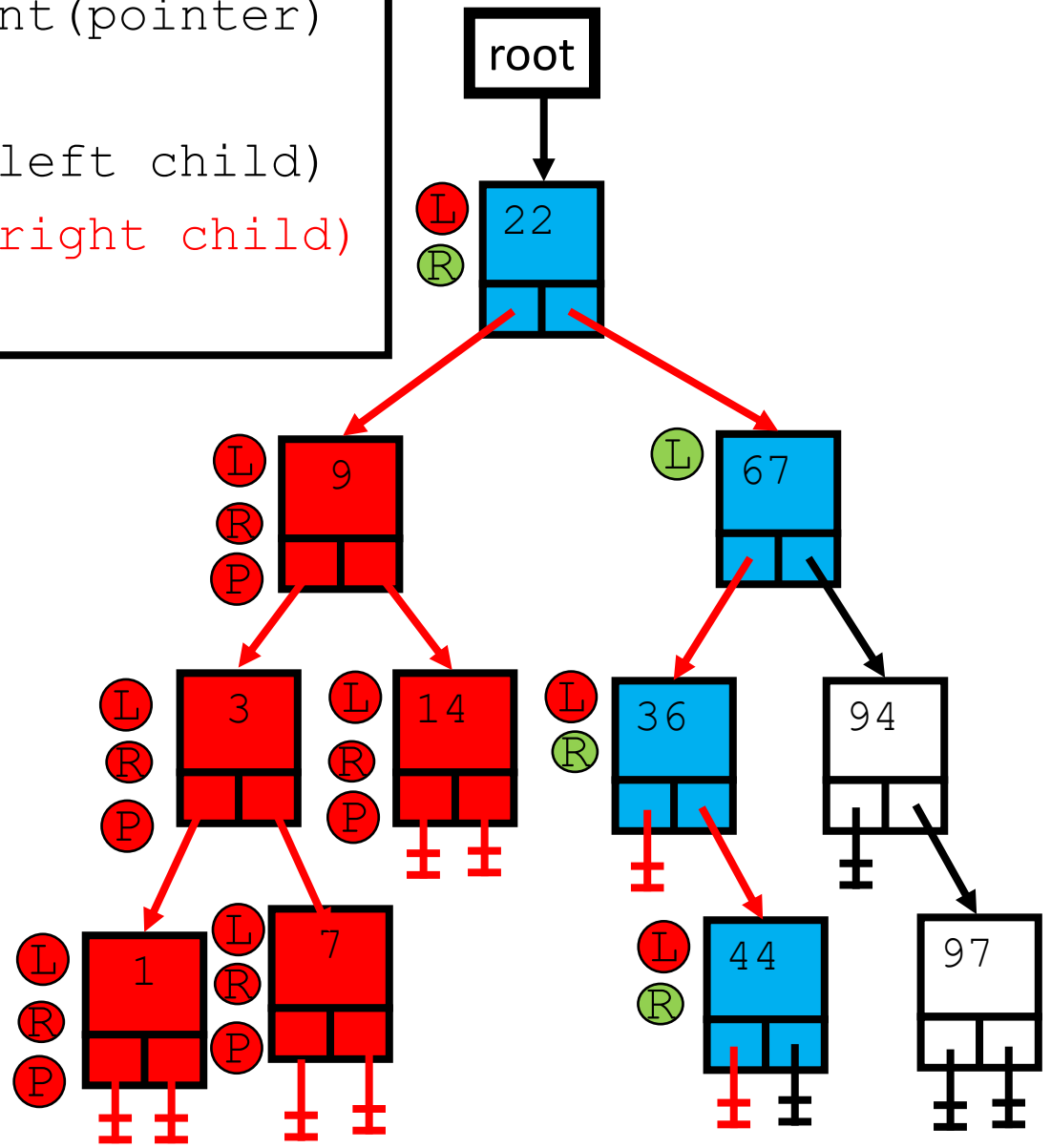

```
Proc PostOrderPrint(pointer)
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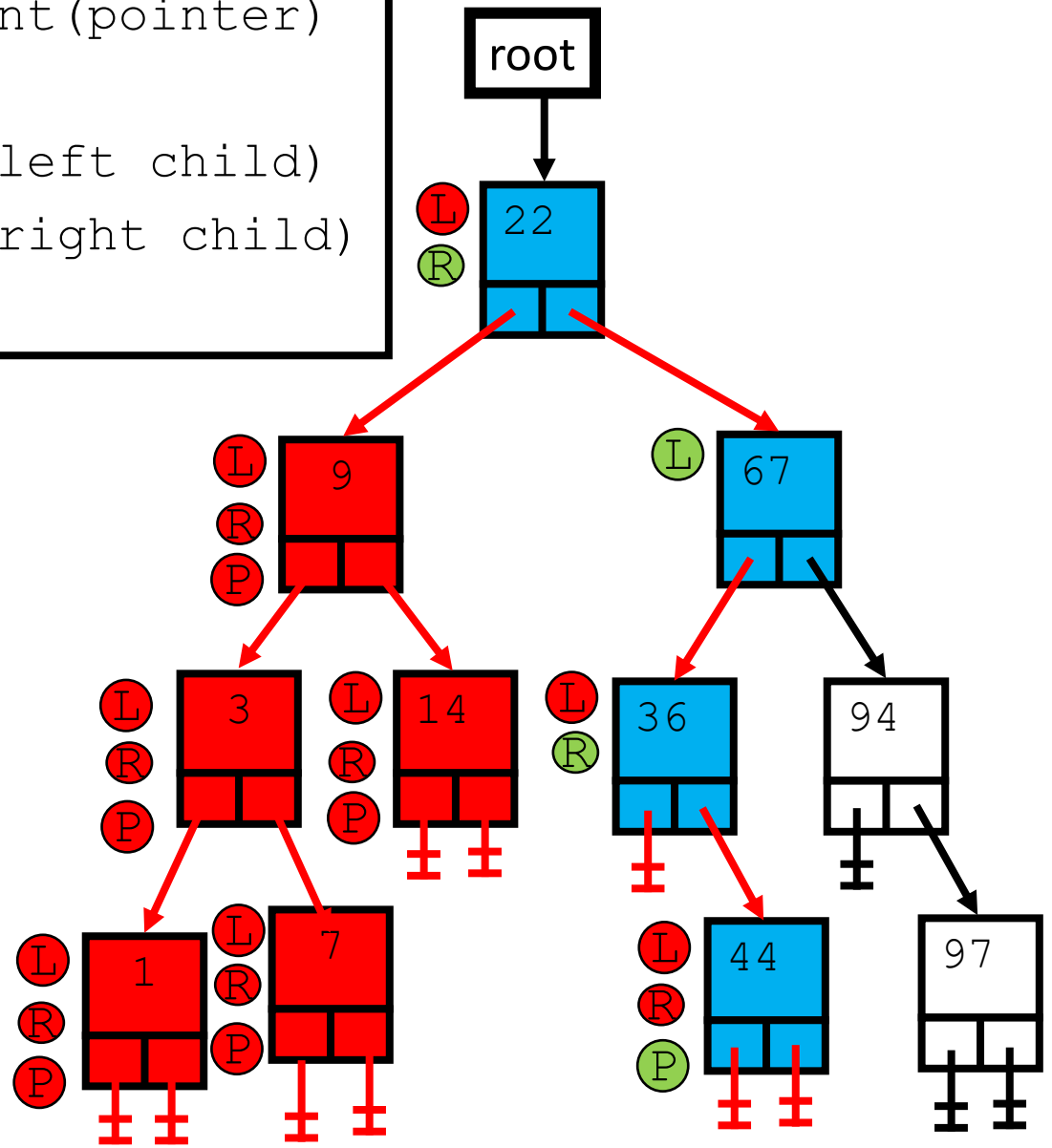
```

```
Output: 1 7 3 14 9 44
```



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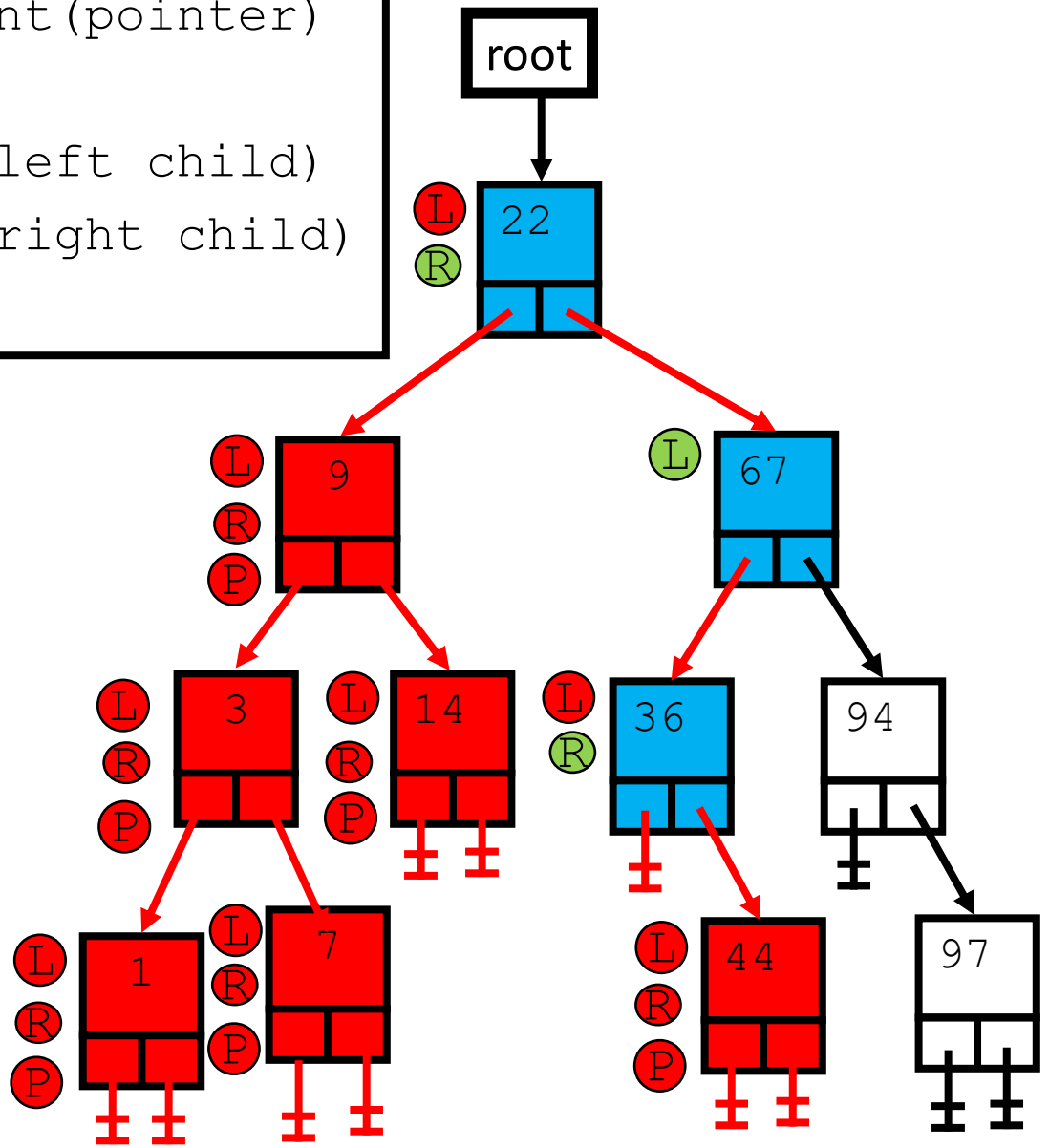

```
Proc PostOrderPrint(pointer)
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```
Output: 1 7 3 14 9 44 36
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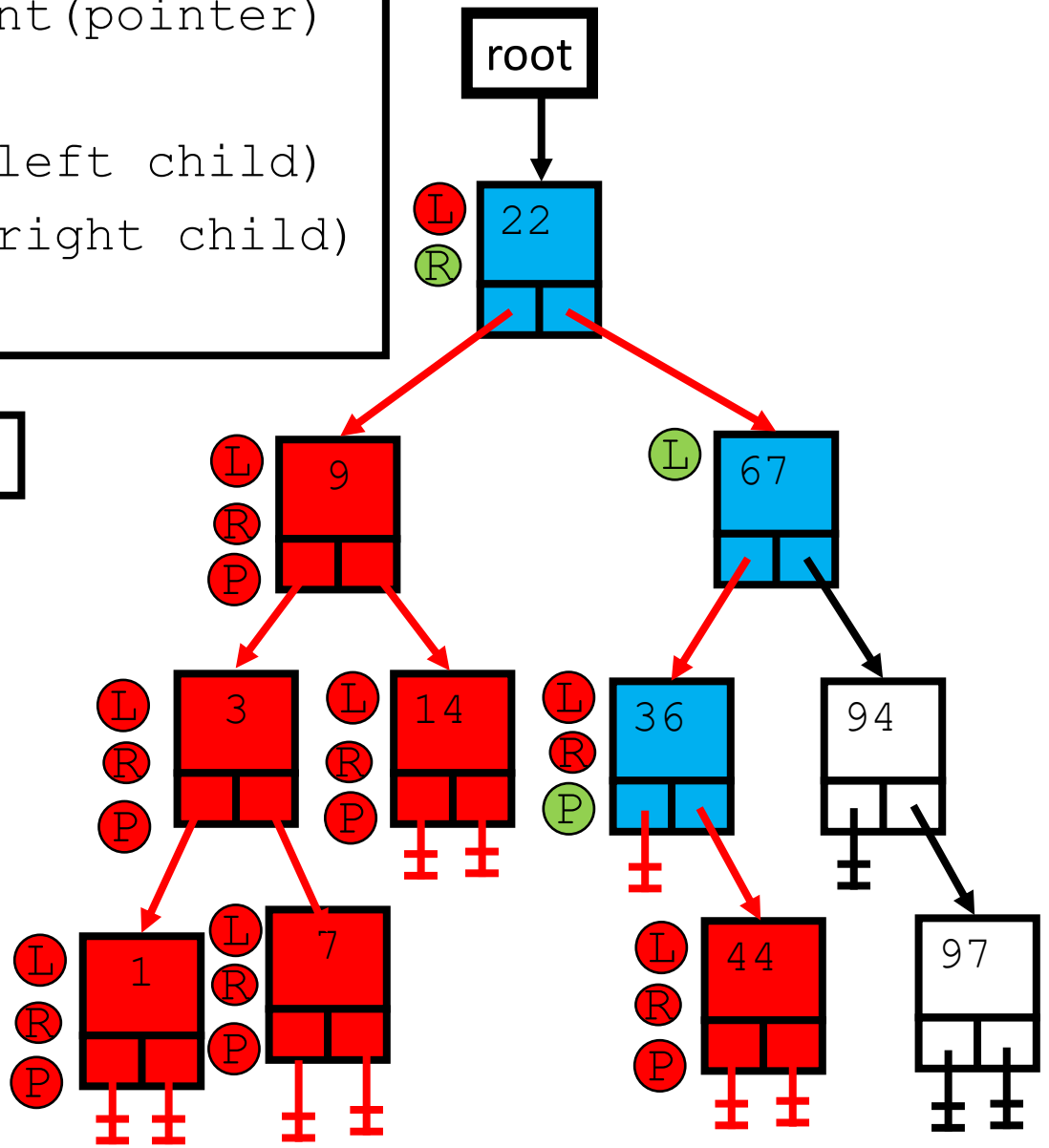

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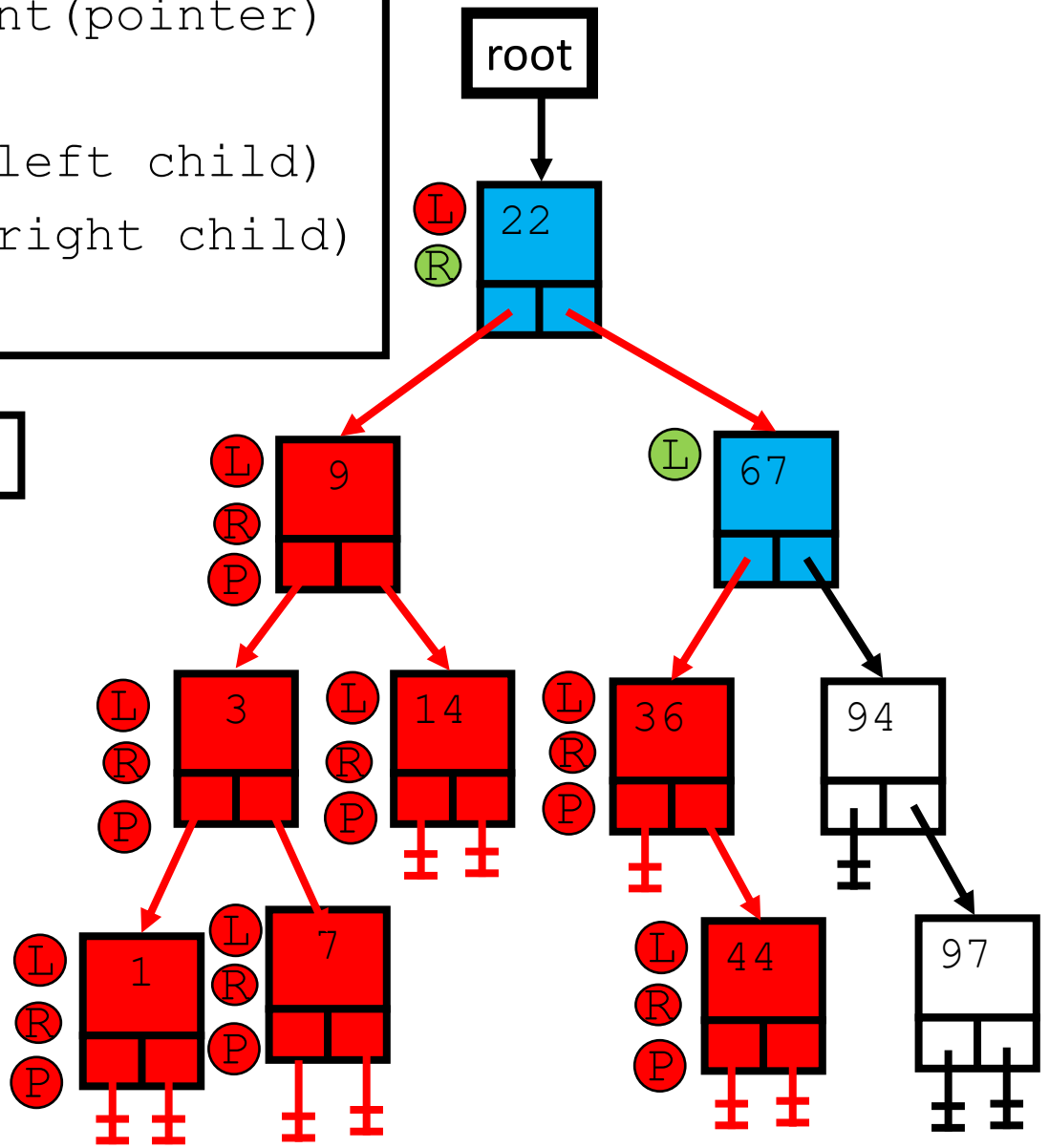

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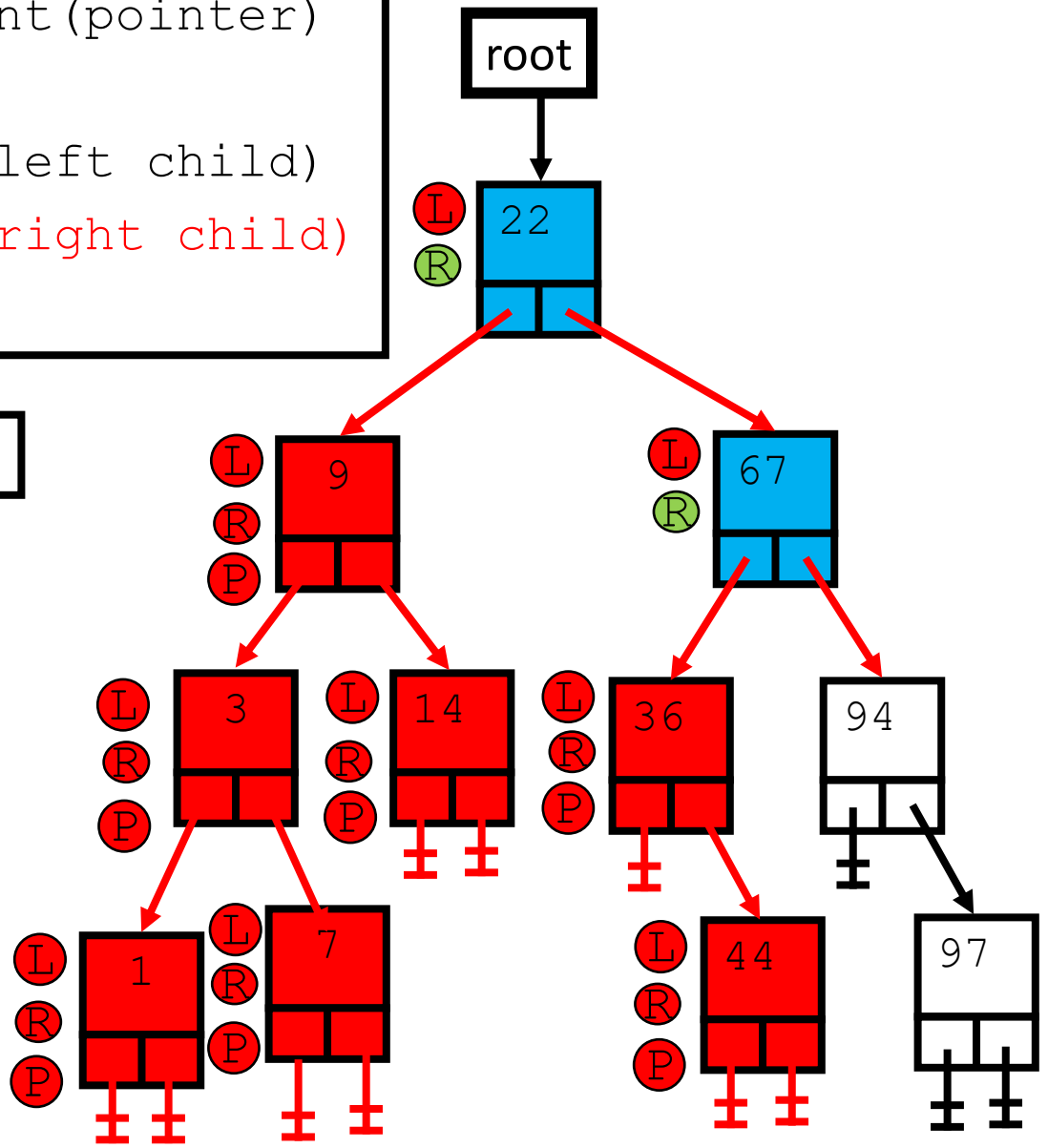

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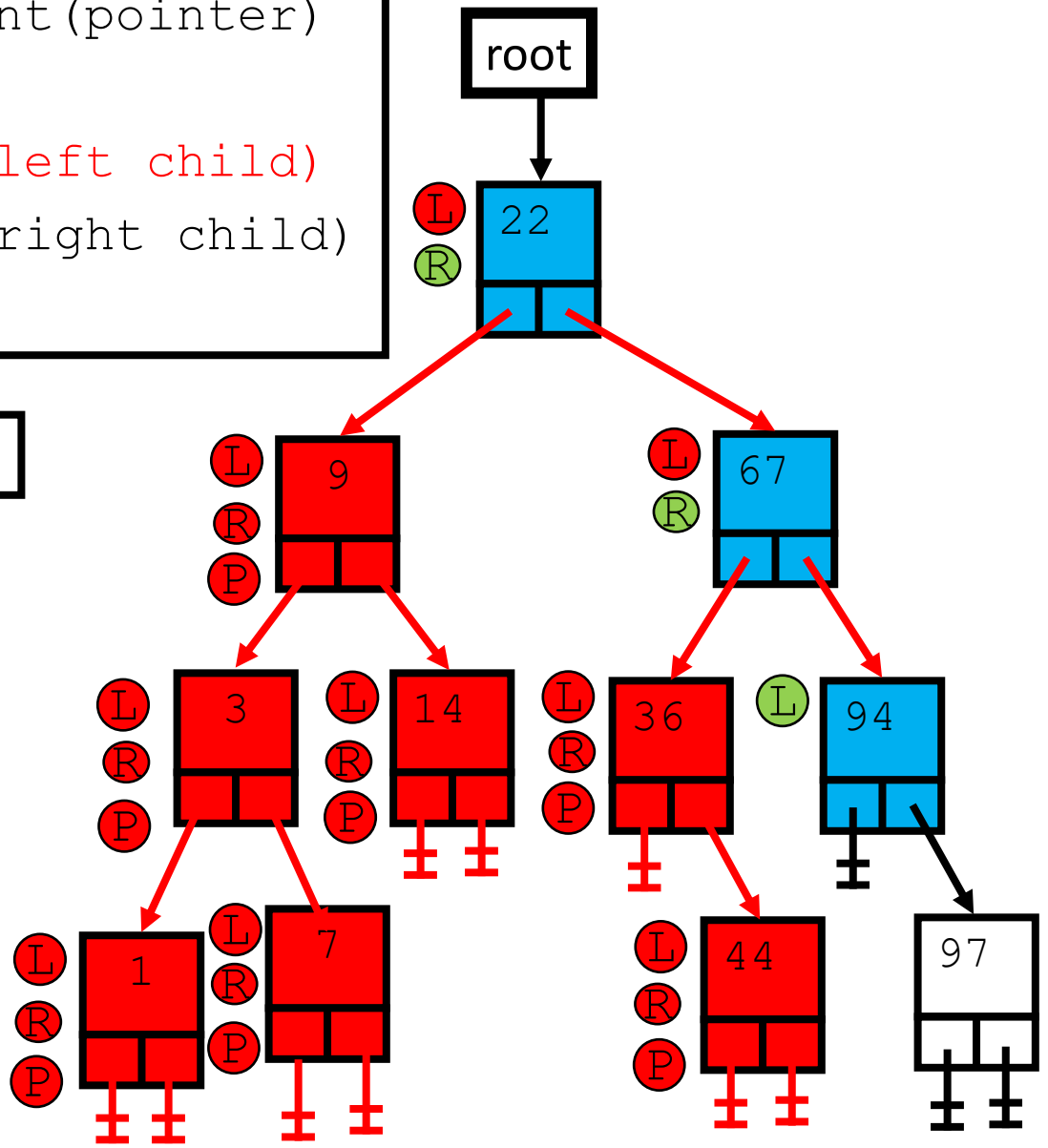

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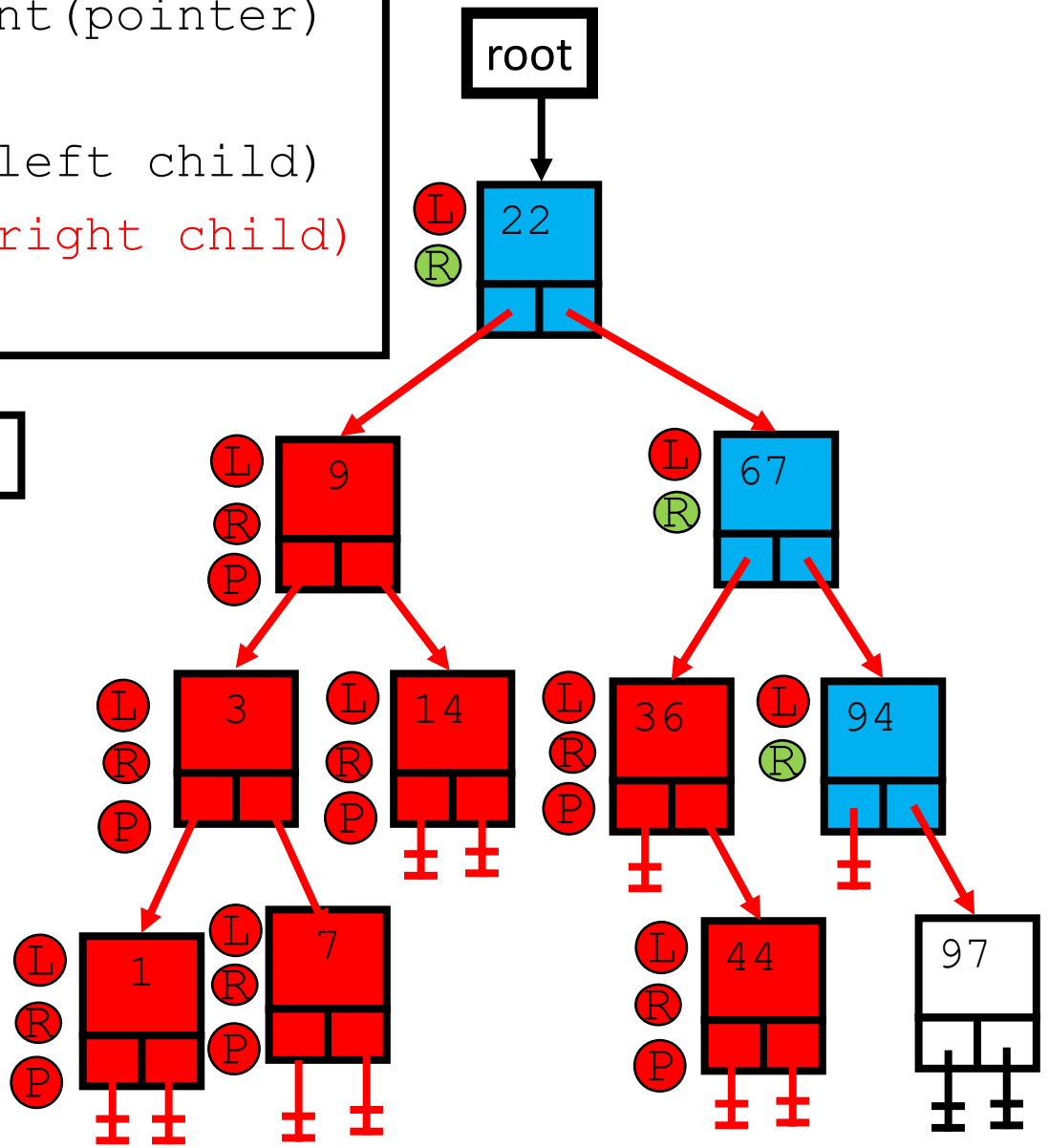

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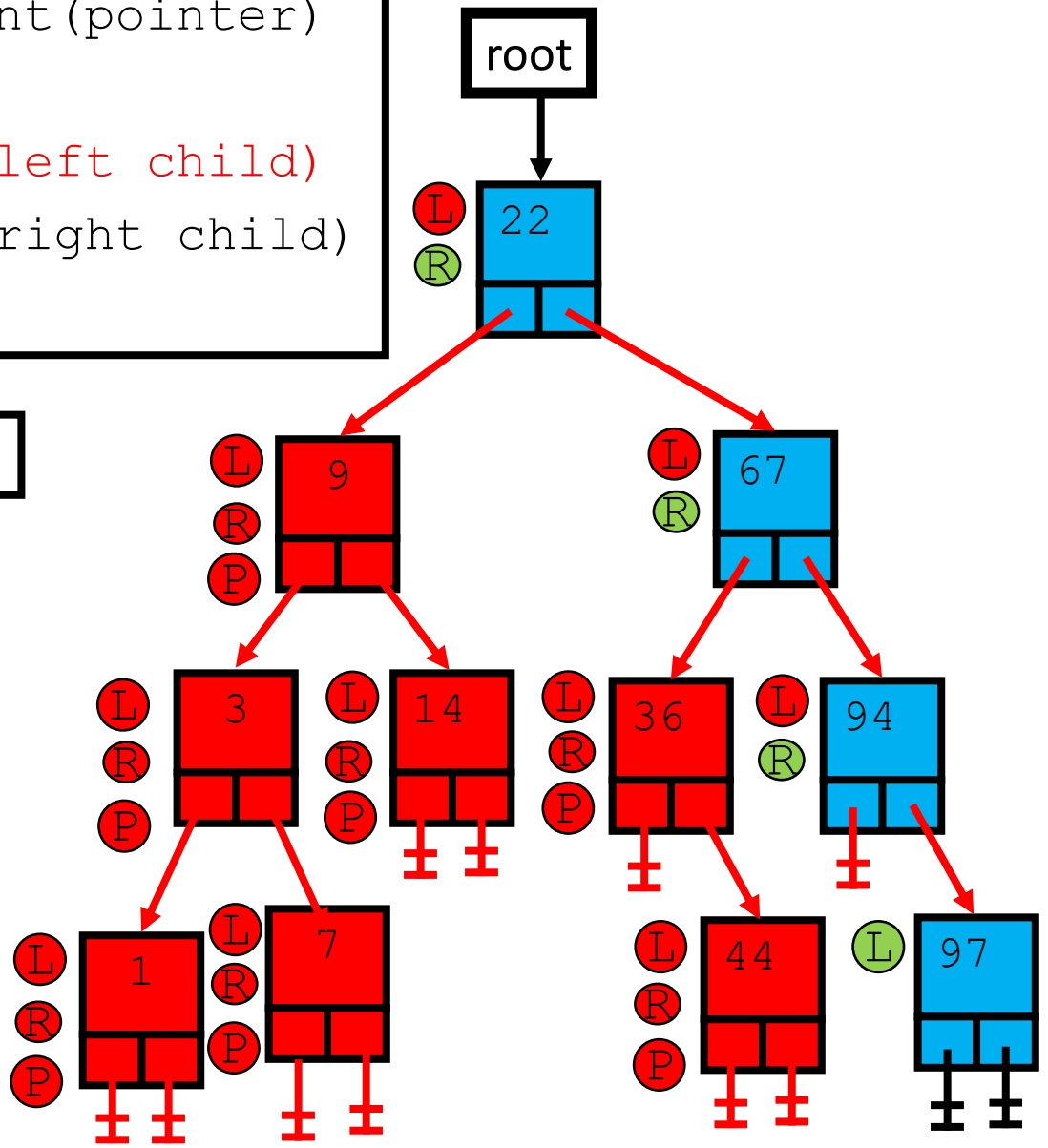

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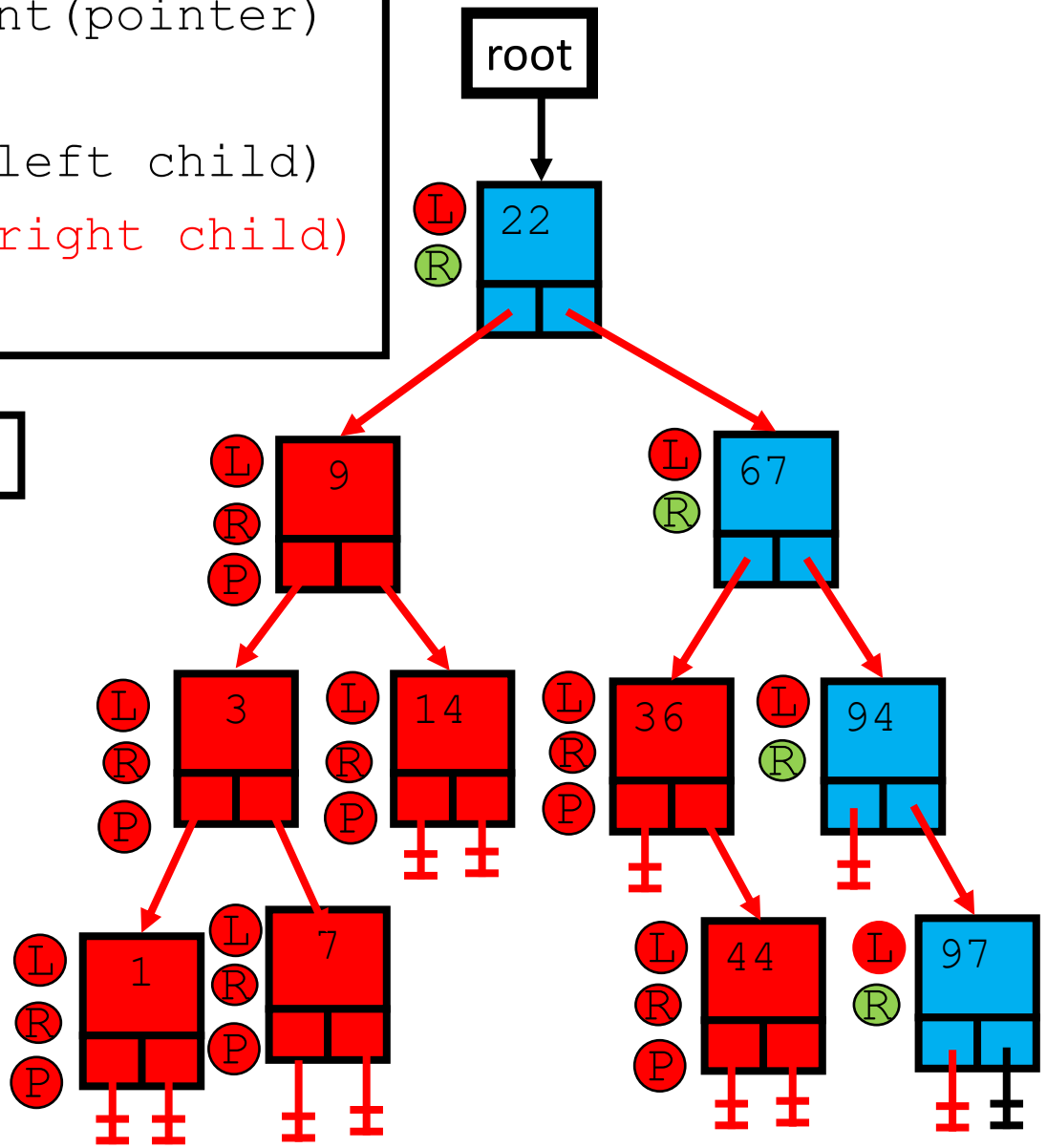

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97
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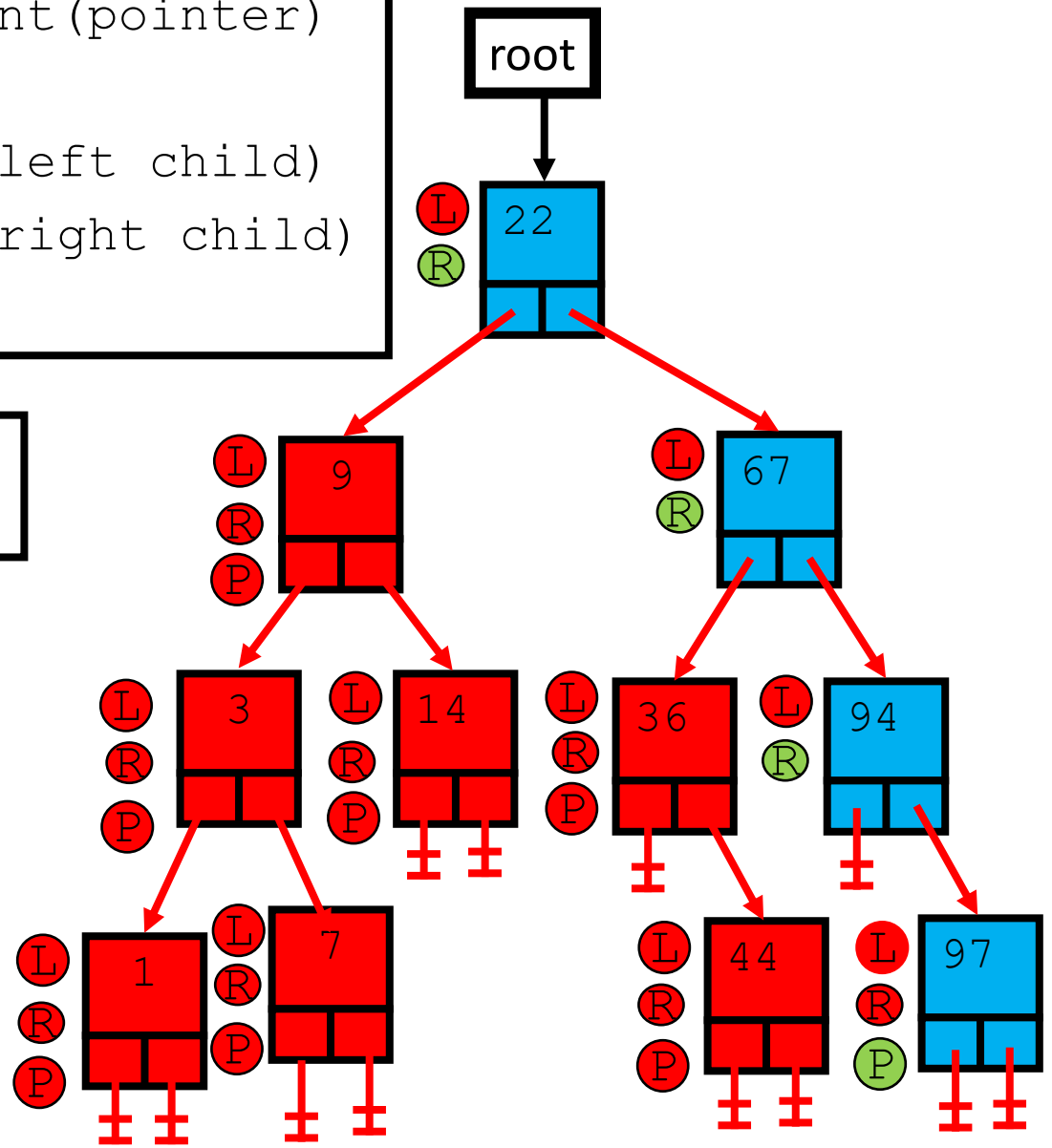

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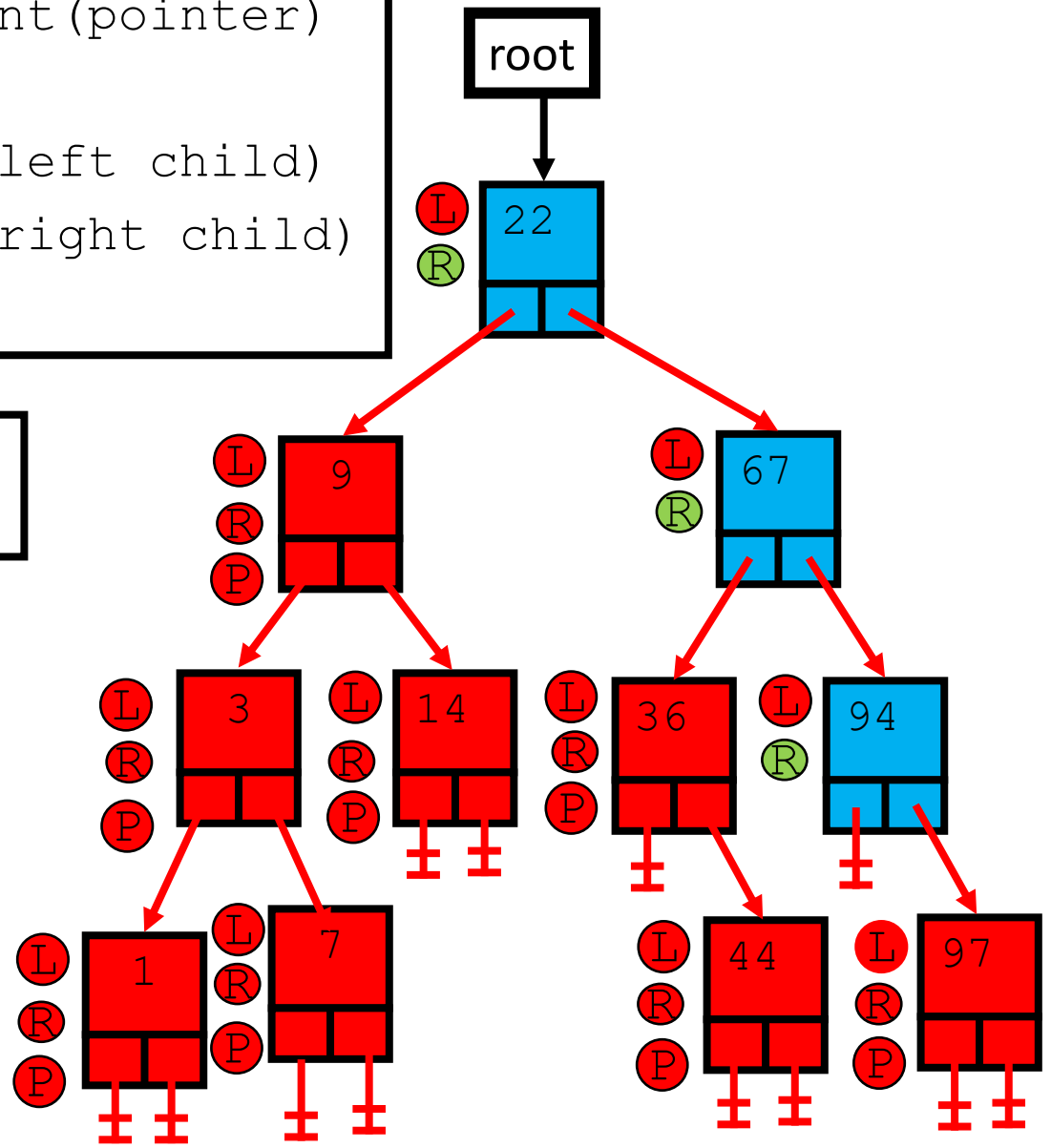
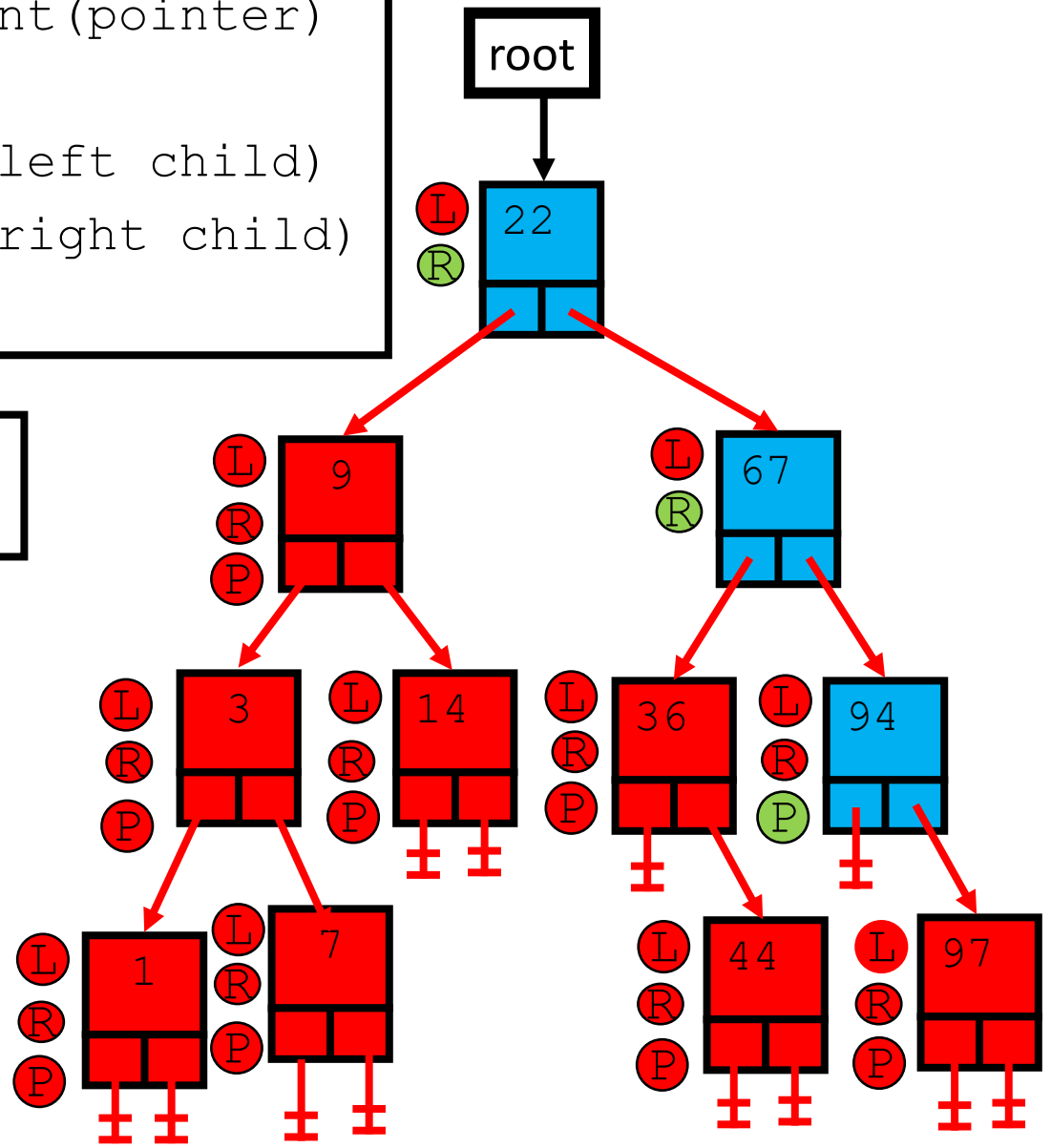
97
```



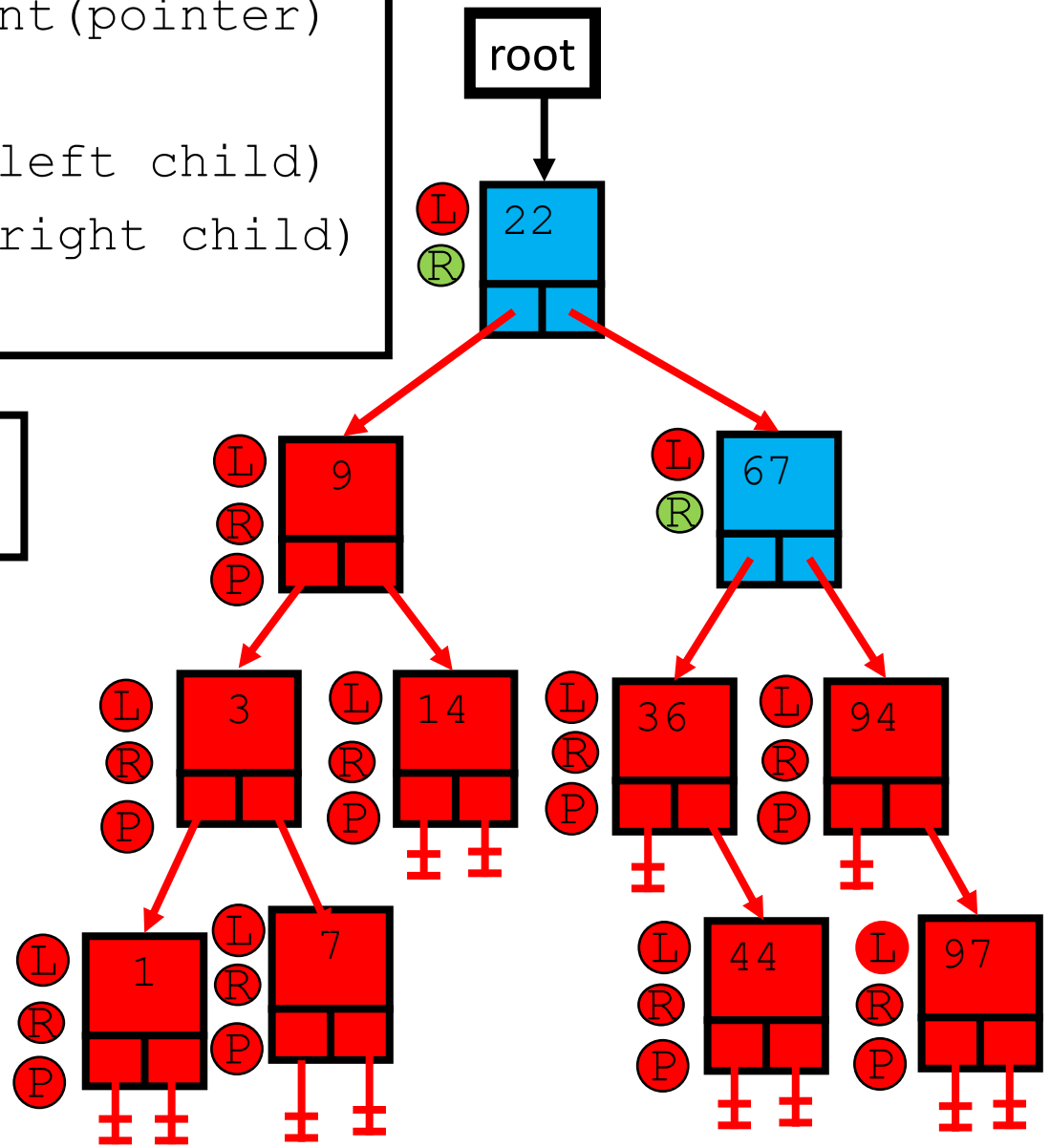
```
Proc PostOrderPrint(pointer)
 pointer NOT NIL?
L PostOrderPrint(left child)
R PostOrderPrint(right child)
P print(data)
```

```
Output: 1 7 3 14 9 44 36
97 94
```



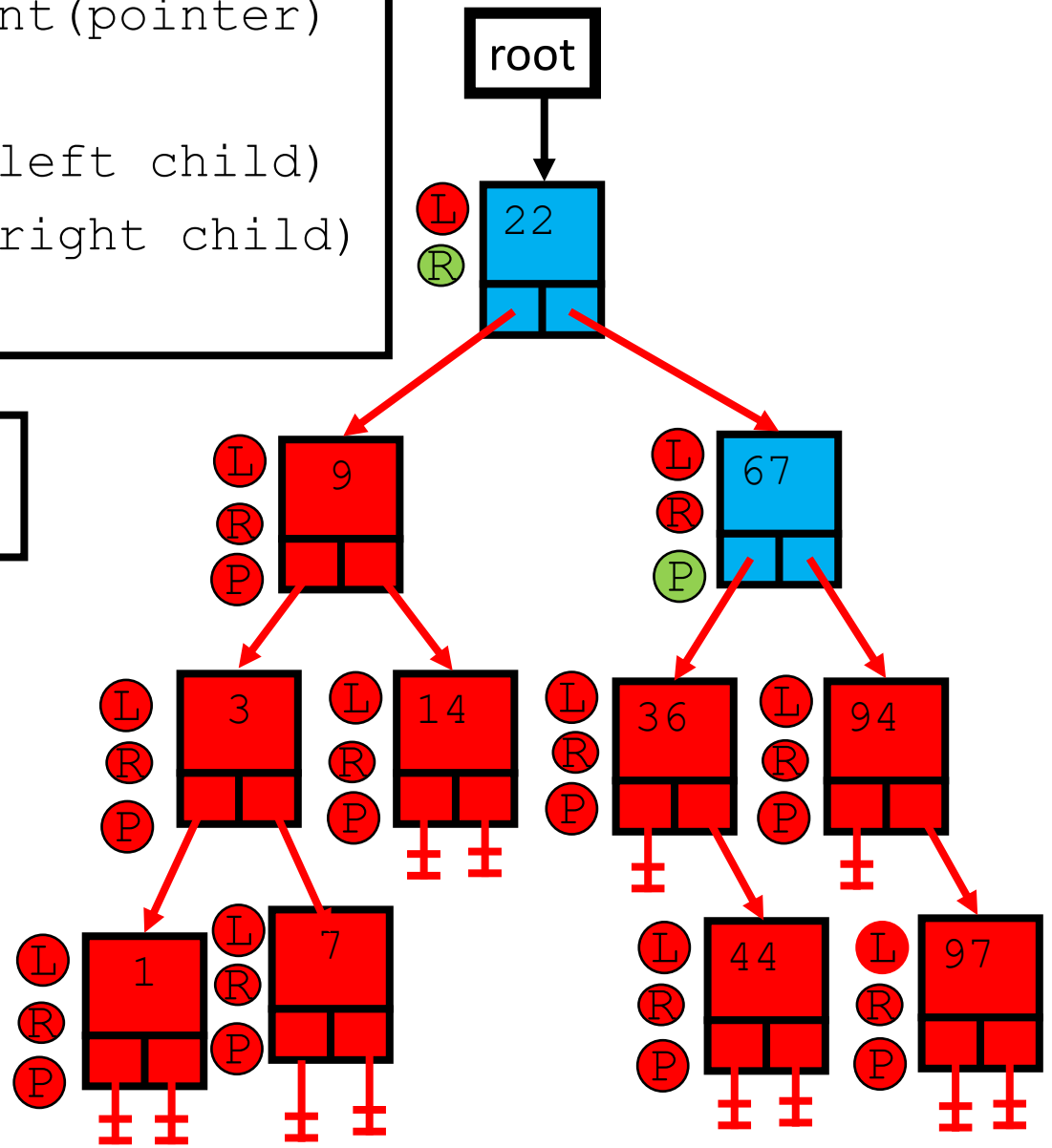
```
Proc PostOrderPrint(pointer)
 pointer NOT NIL?
L PostOrderPrint(left child)
R PostOrderPrint(right child)
P print(data)
```

```
Output: 1 7 3 14 9 44 36
97 94
```



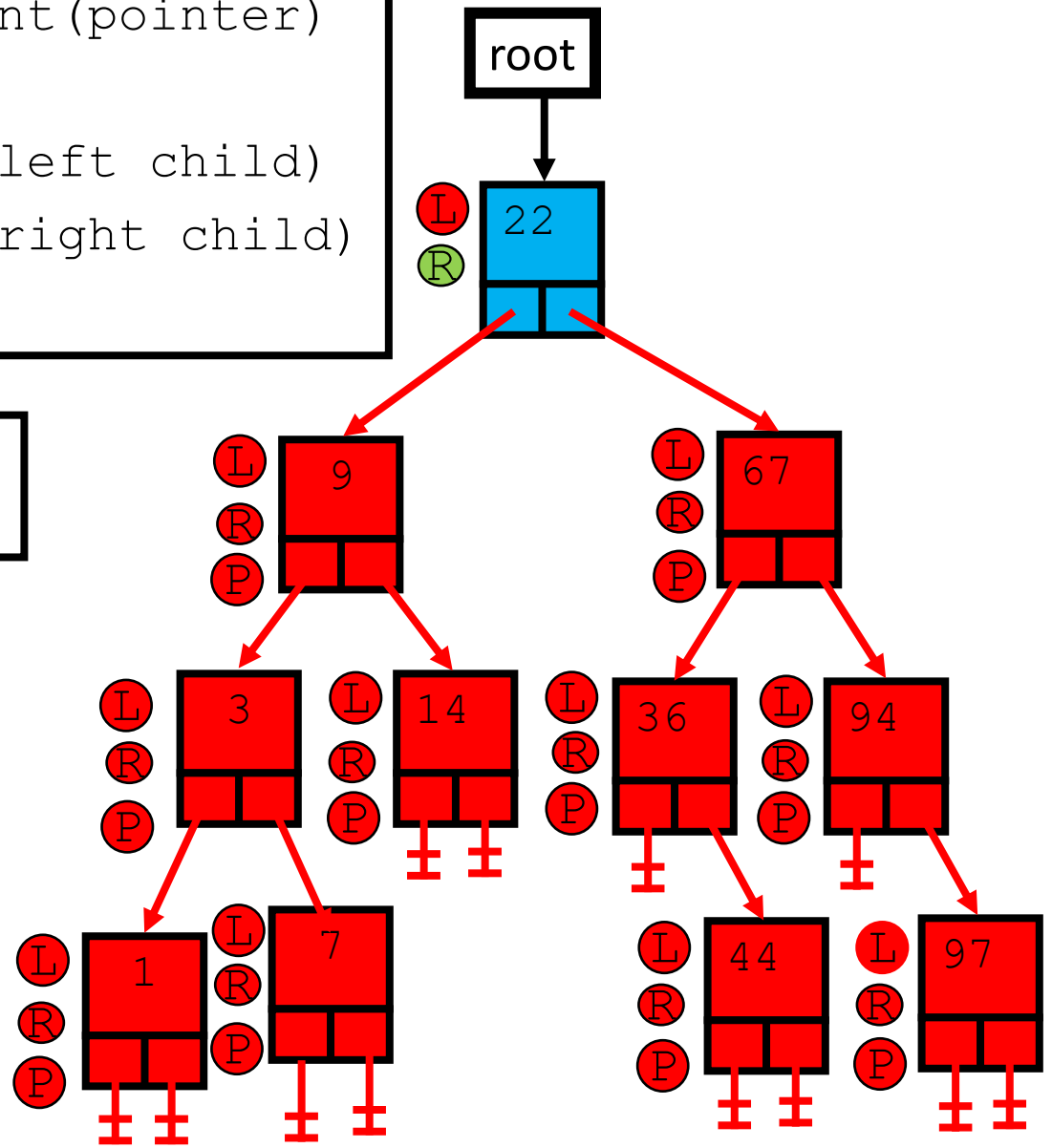
```
Proc PostOrderPrint(pointer)
 pointer NOT NIL?
L PostOrderPrint(left child)
R PostOrderPrint(right child)
P print(data)
```

```
Output: 1 7 3 14 9 44 36
97 94 67
```



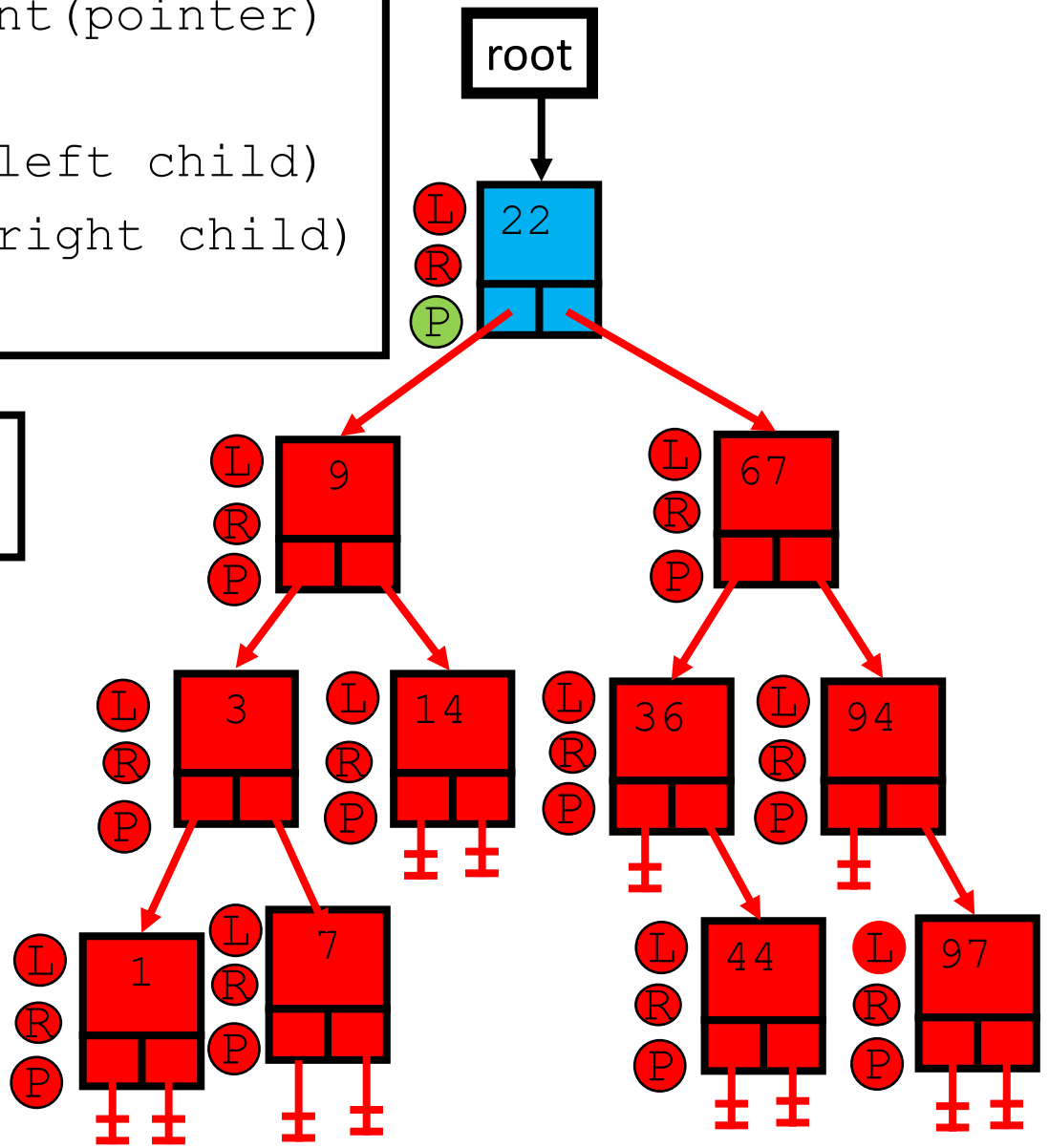
```
Proc PostOrderPrint(pointer)
 pointer NOT NIL?
L PostOrderPrint(left child)
R PostOrderPrint(right child)
P print(data)
```

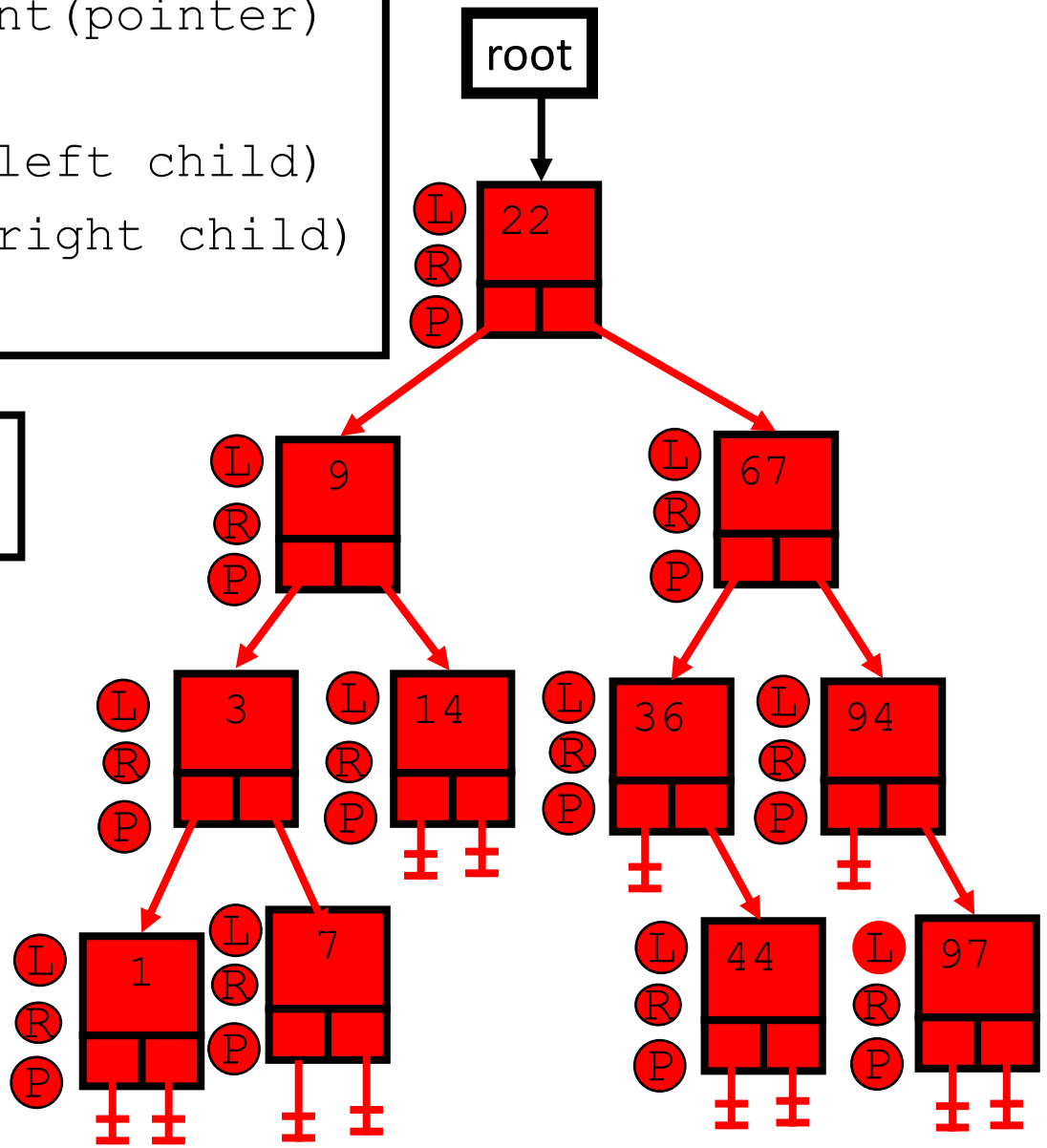
```
Output: 1 7 3 14 9 44 36
97 94 67
```



```
Proc PostOrderPrint(pointer)
 pointer NOT NIL?
L PostOrderPrint(left child)
R PostOrderPrint(right child)
P print(data)
```

```
Output: 1 7 3 14 9 44 36
97 94 67 22
```



```
Proc PostOrderPrint(pointer)
 pointer NOT NIL?
L PostOrderPrint(left child)
R PostOrderPrint(right child)
P print(data)
```

```
Output: 1 7 3 14 9 44 36
97 94 67 22
```