Week 5 Section Solutions

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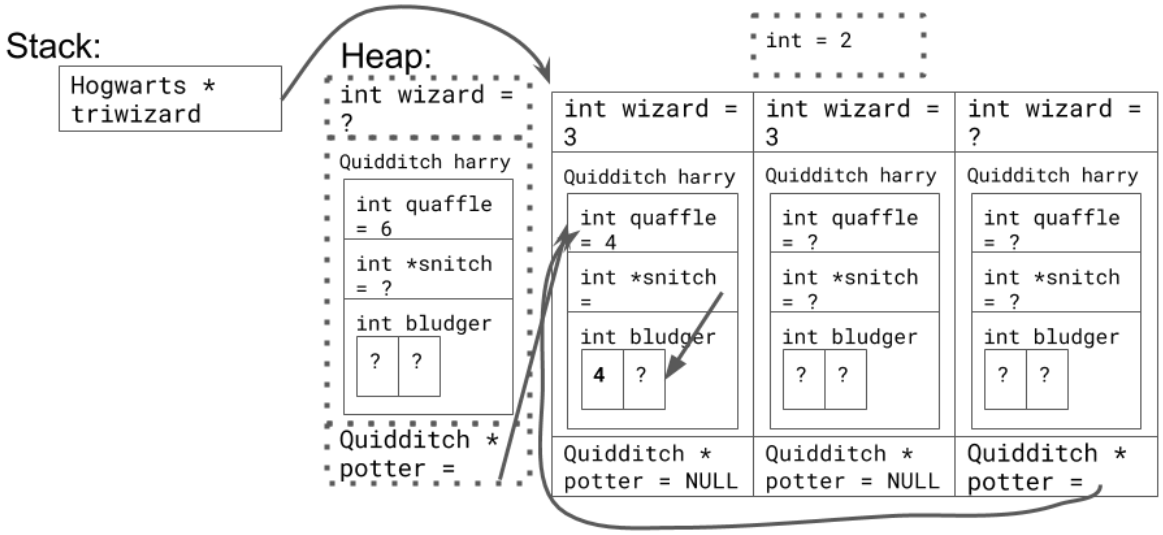
1. Hogwarts Pointer Trace

Orphaned memory is represented with dotted lines. For a full walkthrough of the solution, check out: http://tinyurl.com/HogwartsPointers.



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2. Big O

a) $O(N^2M)$
b) $O(N \log(M))$
c) $O(N * (N + \log(M)))$

Thanks to Marty Stepp and other CS106B and X instructors and TAs for contributing problems on this handout.

3. Linked Nodes

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a) list->next->next = new ListNode(3, NULL); // 2 -> 3
b) list = new ListNode(3, list); // 3 -> 1 and list -> 3
c) temp->next->next = list->next; // 4 -> 2
   list->next = temp; // 1 -> 3
d) list->next->next = temp->next; // 2 -> 4
   temp->next = list->next; // 3 -> 2
   list->next = temp; // 1 -> 3
e) ListNode* list2 = list; // list2 -> 1
   list = list->next; // list -> 2
   list2->next = list2->next->next; // 1 -> 3
   list->next = NULL; // 2 /
f) ListNode* temp = list->next->next; // temp -> 3
   temp->next = list->next; // 3 -> 4
   list->next->next = list; // 4 -> 5
   list->next->next->next = NULL; // 5 /
   list = temp; // list -> 3
g) list->next->next->next = list; // 3 -> 5
   list = list->next->next; // list -> 3
   ListNode* list2 = list->next->next; // list2 -> 4
   list->next->next = NULL; // 5 /
```