Day 37 Highlights

1. Reminders
   1. Project six is due Friday at 5pm
2. Review on recursions
   1. Integers, n 🡪 n-1, n 🡪 n/10, n🡪n/2, n🡪n/8
   2. Strings (first and the rest)
   3. Arrays (first and the rest, last and the rest, half and half)
   4. Linked lists?
3. Recursion and linked lists
   1. The first node is pointed by head
   2. The rest is headed by head->next
4. Example: **count** – count of nodes in a list
   1. If the list is empty, return 0
   2. Else size is 1 + the size of the rest of the list

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| **ITERATIVE**  **int count(Node \*head){**  **int count = 0;**  **Node \*ptr=head;**  **while (ptr != NULL) {**  **count = count + 1;**  **ptr = ptr->next;**  **}**  **return count;**  **}** | **RECURSIVE**  **int count(Node \*head){**  **if (head == NULL)**  **return 0;**  **return 1 +**  **count(head->next);**  **}** |

1. Code recursive functions for:
   1. Printing a linked list
      1. Base case: list is empty
      2. Recursive case: print head, call to print the rest of list
   2. Search – does a particular item exist in the list?
   3. Add a node (add at the end or add in order)
   4. Remove a node