2) (10 pts) ALG (Linked Lists)

Suppose we have a singly linked list implemented with the structure below. Write a **recursive** function that takes in the list and returns 1 if the list is non-empty AND **all** of the numbers in the list are even, and returns 0 if the list is empty OR contains at least one odd integer. (For example, the function should return 0 for an empty list, 1 for a list that contains 2 only, and 0 for a list that contains 3 only.)

```
struct node {
    int data;
    struct node* next;
};

int check_all_even(struct node *head) {

     // Grading: 2 pts
     if (head == NULL)
        return 0;

     // Grading: 4 pts, we have to have this here to
     // differentiate between an empty and non-empty list.
     // 2 pts for checking next is NULL, 1 pt for each return.
     if (head->next == NULL) {
        if (head->data % 2 == 0)
            return 1;
        else
            return 0;
     }

     // Grading: 1 pt if, 1 pt return
     if (head->data % 2 != 0)
        return 0;

     // Grading: 2 pts
     return check_all_even(head->next);


}
```