

## Find middle node in linked list

```
#include <stdio.h>
#include <stdlib.h>
#include <assert.h>

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

void insertAtBeginning(struct node **head, int data)
{
    // allocate new node
    struct node *temp = (struct node*) malloc(sizeof(struct node));
    temp->data = data;
    temp->next = (*head);
    *head = temp;
}

void findMiddleNode(struct node *head)
{
    struct node *mid = head, *temp;
    int count = 0;
    for(temp = head; temp ; temp = temp->next)
    {
        if (count & 1)
            mid = mid->next;
        count += 1;
    }
    if (mid)
        printf("The middle node is = %d", mid->data);
}

int main() {
    struct node *head = NULL;
    insertAtBeginning(&head, 10);
    insertAtBeginning(&head, 20);
    insertAtBeginning(&head, 30);
    insertAtBeginning(&head, 40);
    insertAtBeginning(&head, 50);
    insertAtBeginning(&head, 60);
    insertAtBeginning(&head, 70);
    findMiddleNode(head);
    return 1;
}
```

Time complexity:  $O(n)$

Space complexity:  $O(1)$