

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

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

```
// Definition for singly-linked list.
```

```
struct ListNode {
```

```
    int val;
```

```
    struct ListNode *next;
```

```
};
```

```
int length(struct ListNode *head) {
```

```
    int len = 0;
```

```
    while (head != NULL) {
```

```
        len++;
```

```
        head = head->next;
```

```
    }
```

```
    return len;
```

```
}
```

```
int findMergeNode(struct ListNode *headA, struct ListNode *headB) {
```

```
    int lenA = length(headA);
```

```
    int lenB = length(headB);
```

```
// Move the pointer of the longer list by the difference in lengths
```

```
while (lenA > lenB) {
```

```
    headA = headA->next;
```

```
    lenA--;
```

```
}
```

```
while (lenB > lenA) {
```

```
    headB = headB->next;
```

```
    lenB--;
```

```
}
```

```

// Traverse both lists until we find a common node
while (headA != headB) {
    headA = headA->next;
    headB = headB->next;
}

// Return the value of the common node
return headA->val;
}

int main() {
    // Create the first linked list: 1 -> 2 -> 3 -> 4 -> 5
    struct ListNode *headA = (struct ListNode *)malloc(sizeof(struct ListNode));
    headA->val = 1;
    headA->next = (struct ListNode *)malloc(sizeof(struct ListNode));
    headA->next->val = 2;
    headA->next->next = (struct ListNode *)malloc(sizeof(struct ListNode));
    headA->next->next->val = 3;
    headA->next->next->next = (struct ListNode *)malloc(sizeof(struct ListNode));
    headA->next->next->next->val = 4;
    headA->next->next->next->next = (struct ListNode *)malloc(sizeof(struct ListNode));
    headA->next->next->next->next->val = 5;
    headA->next->next->next->next->next = NULL;

    // Create the second linked list: 6 -> 7 -> 4 -> 5
    struct ListNode *headB = (struct ListNode *)malloc(sizeof(struct ListNode));
    headB->val = 6;
    headB->next = (struct ListNode *)malloc(sizeof(struct ListNode));
    headB->next->val = 7;
    headB->next->next = headA->next->next->next; // Merge point

```

```
printf("Merge node value: %d\n", findMergeNode(headA, headB));

// Free memory
free(headA->next->next->next->next);
free(headA->next->next->next);
free(headA->next->next);
free(headA->next);
free(headA);

free(headB->next);
free(headB);

return 0;
}
```

Merge node value: 4

...Program finished with exit code 0  
Press ENTER to exit console.