

## Problem 4

a. in1 = 1, 2, 3, 4    in2 = 5, 6

```

struct Node {
    int val;
    Node* next;
};

Node* llrec(Node* in1, Node* in2)
{
    if(in1 == nullptr) {
        return in2;
    }
    else if(in2 == nullptr) {
        return in1;
    }
    else {
        in1->next = llrec(in2, in1->next);
        return in1;
    }
}

```

Diagram illustrating the recursive process for in1 = 1, 2, 3, 4 and in2 = 5, 6:

- I**  $llrec(5, 2)$  (Red arrow from 5 to 2)
- II**  $llrec(2, 6)$  (Blue arrow from 2 to 6)
- III**  $llrec(6, 3)$  (Red arrow from 6 to 3)
- IV**  $llrec(3, nullptr)$  (Blue arrow from 3 to nullptr)
- V**  $return in1$  (Red arrow from nullptr to 3)

Final sequence: 3, 6, 2, 5, 1

b. in1 = nullptr    in2 = 2

```

struct Node {
    int val;
    Node* next;
};

Node* llrec(Node* in1, Node* in2)
{
    if(in1 == nullptr) {
        return in2;
    }
    else if(in2 == nullptr) {
        return in1;
    }
    else {
        in1->next = llrec(in2, in1->next);
        return in1;
    }
}

```

Diagram illustrating the recursive process for in1 = nullptr and in2 = 2:

- True** (Red arrow from nullptr to 2)

Final sequence: 2