```
def merge_sorted_lists(list1, list2):

    merged_list = []
    i, j = 0, 0
    while i < len(list1) and j < len(list2):
        if list1[i] < list2[j]:
            merged_list.append(list1[i])
            i += 1
        else:
            merged_list.append(list2[j])
            j += 1
    merged_list.extend(list1[i:])
    # Bug: Forgets to merge remaining elements from list2
    return merged_list
```

TEST 1: Cannot Find the Bug

```
list1 = [1, 3, 5]
list2 = [2, 4]
expected = [1, 2, 3, 4, 5]
assert merge_sorted_lists(list1, list2) == expected,
```

TEST 2:Failure Inducing

```
list1 = [1, 2]
list2 = [3, 4, 5]
expected = [1, 2, 3, 4, 5]
assert merge_sorted_lists(list1, list2) == expected
```