

Homework 1

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Question 1

Part A

```
swap(1,4,myList)
    String temp = myList.get(1); //myList = ["a","b","c","d","e","f"]
    myList.add(1, myList.get(4)); //myList = ["a","e","b","c","d","e","f"]
    myList.add(4, temp); //myList = ["a","e","b","c","b","d","e","f"]
```

Part B

```
void swap(int i, int j, ListADT<String> myList) {
    String temp = myList.remove(i);
    myList.add(i, myList.get(j));
    myList.add(j, temp);
    myList.remove(j + 1);
}
```

Question 2

```
public static ListADT<String> union(ListADT<String> list1, ListADT<String> list2) {
    ListADT<String> newList = new ListADT<String>();

    if ((list1 == null) || (list2 == null)) {
        throw new BadListException();
    } else if (list1.isEmpty() && list2.isEmpty()) {
        return newList;
    } else if (list1.isEmpty()) {
        //add strings from list2 (without duplicates) to newList
        ListADTIterator<String> iter1 = list2.iterator();
        while (iter1.hasNext()) {
            ListADTIterator<String> iter2 = newList.iterator();
            while (iter2.hasNext()) {
                String temp = iter1.next();
                if (temp.equals(iter2.next())) {
                    newList.add(temp);
                    break;
                }
            }
        }
        return newList;
    } else if (list2.isEmpty()) {
        //add strings from list1 (without duplicate) to newList
        ListADTIterator iter1 = list1.iterator();
        while (iter1.hasNext()) {
            ListADTIterator<String> iter2 = newList.iterator();
            while (iter2.hasNext()) {
```

```

        String temp = iter1.next();
        if (temp.equals(iter2.next())) {
            newList.add(temp);
            break;
        }
    }
}
return newList;
} else {
//add strings from list1 (without duplicates) to newList
ListADTIterator<String> iter1 = list1.iterator();
while (iter1.hasNext()) {
    ListADTIterator<String> iter2() = newList.iterator();
    while (iter2.hasNext()) {
        String temp = iter1.next();
        if (temp.equals(iter2.next())) {
            newList.add(temp);
            break;
        }
    }
}
//add strings from list2 if not already in new list
iter1 = list2.iterator();
while (iter1.hasNext()) {
    ListADTIterator<String> iter2 = newList.iterator();
    String temp = list2.next();
    while (iter2.hasNext()) {
        if (temp.equals(iter2.next())) {
            newList.add(temp);
            break;
        }
    }
}
}
}
}
}
}
}

```