420-B31

Lab 6 Answer Sheet

# Part A – Testing Review

Question 1 – BasicCollection Review

\*Recall for a collection that the Object State that is relevant is the size, the contents of the collection and the position of the iterator.

| **Method** | **New Object State** | **Returned Value** |
| --- | --- | --- |
| **Collection c = new BasicCollection<String>();** |  |  |
| **c.add("peach");** |  |  |
| **c.add("apple");** |  |  |
| **c.contains("orange");** |  |  |
| **c.isEmpty();** |  |  |
| **Collection c2 = new BasicCollection<String>();** |  |  |
| **c2.add("peach");** |  |  |
| **c2.add("orange");** |  |  |
| **c2.containsAll(c);** |  |  |
| **c2.remove("apple");** |  |  |
| **c2.remove("peach");** |  |  |
| **Iterator<String> iter = c.iterator();** |  |  |
| **iter.hasNext();** |  |  |
| **String s = iter.next();** |  |  |
| **s = iter.next();** |  |  |
| **iter.remove();** |  |  |
| **iter.hasNext();** |  |  |
| **c.remove("peach");** |  |  |
| **s = iter.next();** |  |  |

Question 2 – containsAll() test case

**Test Case 1: containsAll()** method – two empty collections

| **Operation** | **Purpose** | **Object**  **State** | **Expected**  **Result** |
| --- | --- | --- | --- |
| **Collection c1 = new BasicCollection<String>();** | To create an empty collection | c1.size = 0 | A BasicCollection object for Strings |
| **Collection c2 = new BasicCollection<String>();** | To create a second empty collection |  |  |
| **c1.containsAll(c2);** |  |  | true |

**Test Case 2: containsAll()** method – two identical non-empty collections

| **Operation** | **Purpose** | **Object**  **State** | **Expected**  **Result** |
| --- | --- | --- | --- |
| **Collection c1 = new BasicCollection<String>();** | To create an empty collection | c1.size = 0 | A BasicCollection object for Strings |
| **c1.add("A");** | To add to the collection | c1.size = 1  "A" | true |
| **c1.add("B");** | To add to the collection | c1.size = 2  "A" "B" | true |
| **c1.add("C");** | To add to the collection | c1.size = 3  "A" "B" "C" | true |
| **Collection c2 = new BasicCollection<String>();** | To create a second empty collection | c2.size = 0 |  |
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**Test Case 3: containsAll()** method –two non-empty collections – second collection a subset of the first

| **Operation** | **Purpose** | **Object**  **State** | **Expected**  **Result** |
| --- | --- | --- | --- |
| **Collection c1 = new BasicCollection<String>();** | To create an empty collection | c1.size = 0 | A BasicCollection object for Strings |
| **c1.add("A");** | To add to the collection | c1.size = 1  "A" | true |
| **c1.add("B");** | To add to the collection | c1.size = 2  "A" "B" | true |
| **c1.add("C");** | To add to the collection | c1.size = 3  "A" "B" "C" | true |
| **Collection c2 = new BasicCollection<String>();** | To create a second empty collection |  |  |
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**Test Case 4: containsAll()** method – two non-empty collections with the same number of elements, but different values

| **Operation** | **Purpose** | **Object**  **State** | **Expected**  **Result** |
| --- | --- | --- | --- |
| **Collection c1 = new BasicCollection<String>();** | To create an empty collection | c1.size = 0 | A BasicCollection object for Strings |
| **c1.add("A");** | To add to the collection | c1.size = 1  "A" | true |
| **c1.add("B");** | To add to the collection | c1.size = 2  "A" "B" | true |
| **c1.add("C");** | To add to the collection | c1.size = 3  "A" "B" "C" | true |
| **Collection c2 = new BasicCollection<String>();** | To create a second empty collection |  |  |
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**Test Case 5: containsAll()** method – two non-empty collections with the first a subset of the second

| **Operation** | **Purpose** | **Object**  **State** | **Expected**  **Result** |
| --- | --- | --- | --- |
| **Collection c1 = new BasicCollection<String>();** | To create an empty collection | c1.size = 0 | A BasicCollection object for Strings |
| **c1.add("A");** | To add to the collection | c1.size = 1  "A" | true |
| **c1.add("B");** | To add to the collection | c1.size = 2  "A" "B" | true |
| **Collection c2 = new BasicCollection<String>();** | To create a second empty collection |  |  |
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