**In-Class Exercise (Week4B) – Sorting – (MAX 2 people per team) 5 pts (everyone should keep a copy)**

**PRINT FULL NAMES AT THE TOP: Carter Rath**

**Quick Sort: Move S and L pointers from opposite ends. “OK” move. “Bad” stay.**

**2 6 4 1 7 less than 6 is Small (S)**

**Please write S or L above each number. Then start the S and L pointers from opposite ends.**

**1. Which elements get swapped? List the pairs:** 6 and 1 get swapped.

**2. When the loop stops, where are the S and L pointers?** The S is pointing at 6 and the L is pointing at 4.

**3. What should be the result? Draw | between the two sections.** 2, 1, and 4 are in L1. 6 and 7 are in L2.

S L S S L 6 is the pivot.

2 6 4 1 7

| |

S L S and L arrows will move since there are no mismatches.

S L S S L

2 6 4 1 7

| |

S L Both mismatch, so they will swap places. S and L move since there are no mismatches.

S S S L L

2 1 4 6 7

||

S L Both S and L are on 4. L pointer stays since it is a mismatch. S moves since it is not.

S S S L L

2 1 4 6 7



| |

L S Crossed! Line is drawn before the S pointer.

**4 3 1 2 7 5 less than 4 is Small (S)**

**Please write S or L above each number. Then start the S and L pointers from opposite ends.**

**1. Which elements get swapped? List the pairs:** 2 and 4 swap.

**4. When the loops stops, where are the S and L pointers?** S is pointing at 4 and L is pointing at 1.

**5. What should be the result? Draw | between the two sections.** 2, 3, and 1 arein L1. 4, 7, and 5 are in L2.

L S S S L L 4 is the pivot.

4 3 1 2 7 5

| |

S L S stays since there is a mismatch. L moves since there is no mismatch.

L S S S L L

4 3 1 2 7 5

| |

S L S stays since there is a mismatch. L moves since there is no mismatch.

L S S S L L

4 3 1 2 7 5

| |

S L Both mismatch, so they will swap places. S and L move since there are no mismatches.

S S S L L L

2 3 1 4 7 5

| |

S L L stays since there is a mismatch. S moves since there is no mismatch.

S S S L L L

2 3 1 4 7 5

||

S L L stays since there is a mismatch. S moves since there is no mismatch.

S S S L L L

2 3 1 4 7 5



| |

L S Crossed! Line is drawn before S pointer.