**Readme for SP5 Q2**

**Group-45:**

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**Q2 files consists of:**QuickSort.java  
QuickSortDualPivotPartition.java  
Timer.java  
SP5Q2.java  
  
**Refer SP5\_Q2\_Analysis.xlsx for comparison analysis between dual-pivot quick sort and quick sort**

**How to run Q2:**

Import all the above files in eclipse project under package cs6301.g45 and also please include Timer.java provided by professor.

Run SP5Q2.java

**Example - 1:**

Enter the size of the array:

10000

Enter -> 1 for distinct inputs

-> 2 for duplicate inputs

1

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QuickSort:

First 10 elements in the Input unsorted array : 7971 9785 2214 5349 894 1019 3040 5220 4995 585

Time: 13 msec.

Memory: 2 MB / 123 MB.

First 10 elements in the Output sorted array : 0 2 2 3 6 7 8 9 9 10

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Dual-pivot QuickSort:

First 10 elements in the Input unsorted array : 7971 9785 2214 5349 894 1019 3040 5220 4995 585

Time: 13 msec.

Memory: 2 MB / 123 MB.

First 10 elements in the Output sorted array : 0 2 2 3 6 7 8 9 9 10

**Example - 2:**

Enter the size of the array:

50000

Enter -> 1 for distinct inputs

-> 2 for duplicate inputs

2

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QuickSort:

First 10 elements in the Input unsorted array : 336 497 421 194 132 393 343 438 166 294

Time: 46 msec.

Memory: 4 MB / 123 MB.

First 10 elements in the Output sorted array : 0 0 0 0 0 0 0 0 0 0

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Dual-pivot QuickSort:

First 10 elements in the Input unsorted array : 336 497 421 194 132 393 343 438 166 294

Time: 58 msec.

Memory: 4 MB / 123 MB.

First 10 elements in the Output sorted array : 0 0 0 0 0 0 0 0 0 0

**Example - 3:**

Enter the size of the array:

1000000

Enter -> 1 for distinct inputs

-> 2 for duplicate inputs

1

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QuickSort:

First 10 elements in the Input unsorted array : 263695 626431 136636 24315 237999 87829 171834 322928 661181 901128

Time: 424 msec.

Memory: 51 MB / 123 MB.

First 10 elements in the Output sorted array : 0 0 1 1 2 2 4 6 7 7

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Dual-pivot QuickSort:

First 10 elements in the Input unsorted array : 263695 626431 136636 24315 237999 87829 171834 322928 661181 901128

Time: 575 msec.

Memory: 40 MB / 123 MB.

First 10 elements in the Output sorted array : 0 0 1 1 2 2 4 6 7 7