Attendance Quiz Tracing

Unsorted Number: A [15, 35, 20, 10, 25]

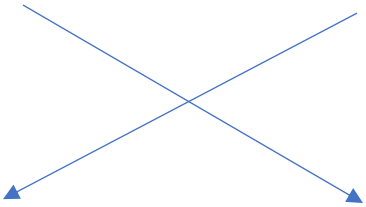
with Quick Sort Algorithm

Based on Lecture Slide # 44 - Sorting

doQuickSort(A, 0, A.length - 1); // doQuickSort(A, 0, 4); // At beginning

<table>
<tr><td>Start= 0
Pivot= 15
Scan= 1
Eoll= 0</td><td>
<table>
<tr><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td></tr>
<tr><td>15</td><td>35</td><td>20</td><td>10</td><td>25</td></tr>
</table>
</td></tr>
<tr><td>Start= 0
Pivot= 15
Scan= 2
Eoll= 0</td><td>
<table>
<tr><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td></tr>
<tr><td>15</td><td>35</td><td>20</td><td>10</td><td>25</td></tr>
</table>
</td></tr>
<tr><td>Start= 0
Pivot= 15
Scan= 3
Eoll= 0

A[scan] < pivotValue
10 < 15
endOfLeftList ++;

Eoll= 1
swap(A, endOfLeftList, scan);</td><td>
<table>
<tr><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td></tr>
<tr><td>15</td><td>35</td><td>20</td><td>10</td><td>25</td></tr>
</table>

<table>
<tr><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td></tr>
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Scan= 4
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<table>
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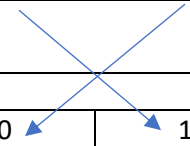

</td></tr>
<tr><td>Final Swap:

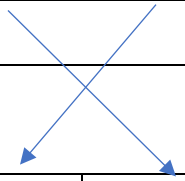
swap(A, start, endOfLeftList);

Start= 0, Pivot= 15
Scan= 4, Eoll= 1</td><td>
<table>
<tr><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td></tr>
<tr><td>10</td><td>15</td><td>20</td><td>35</td><td>25</td></tr>
</table>
</td></tr>
<tr><td>Return</td><td>Eoll = 1</td></tr>
</table>

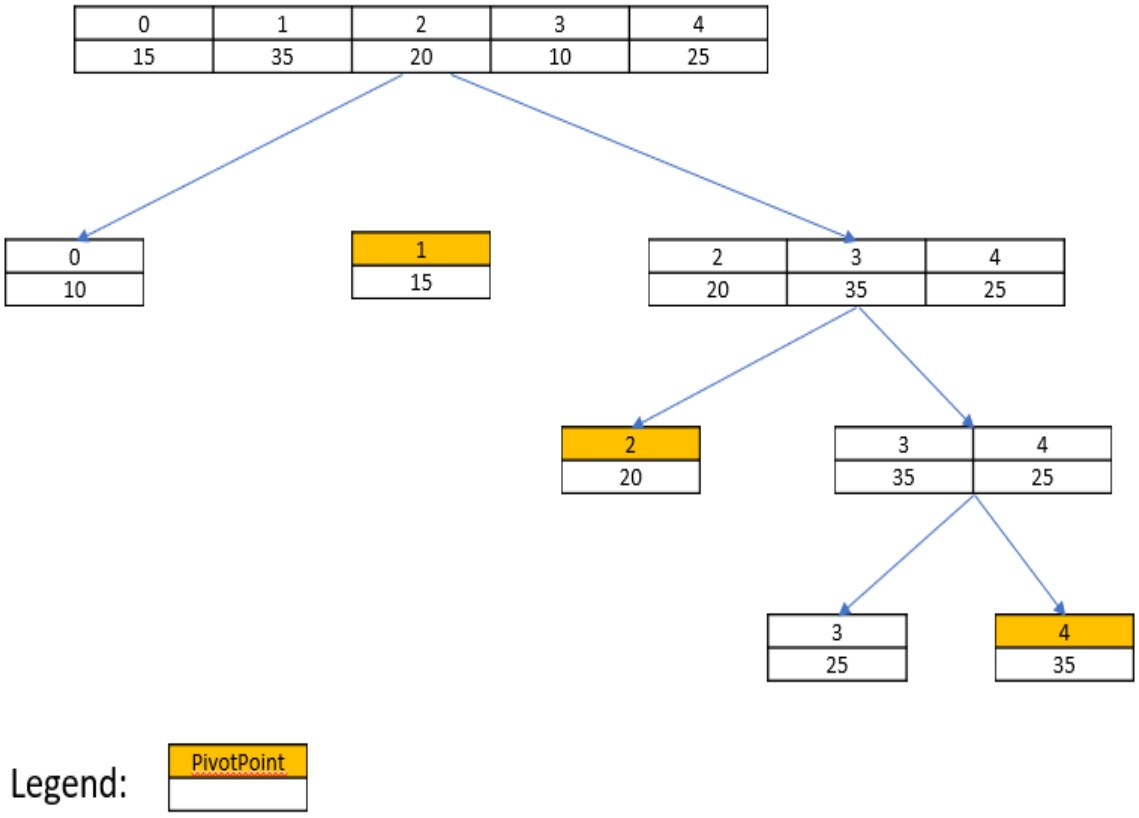
doQuickSort(A, 2, A.length - 1); // doQuickSort(A,2, 4);

Start= 2 Pivot= 20 Scan= 3 Eoll= 2	<table><tr><td>2</td><td>3</td><td>4</td></tr><tr><td>20</td><td>35</td><td>25</td></tr></table>
Start= 2 Pivot= 20 Scan= 4 Eoll= 2	<table><tr><td>2</td><td>3</td><td>4</td></tr><tr><td>20</td><td>35</td><td>25</td></tr></table>
Final Swap: swap(A, start, endOfLeftList); Start= 2, Pivot=20 Scan= 4, Eoll= 2	<table><tr><td>2</td><td>3</td><td>4</td></tr><tr><td>20</td><td>35</td><td>25</td></tr></table>
Return	Eoll = 2

doQuickSort(A, 3, A.length - 1); // doQuickSort(A,3, 4);

Start= 3
Pivot= 35
Scan= 4
Eoll= 3
 	
A[scan] < pivotValue
25 < 35
endOfLeftList ++;
 	
Eoll= 4
Scan= 4
swap(A, endOfLeftList, scan);
	<table><tr><td>3</td><td>4</td></tr><tr><td>35</td><td>25</td></tr></table>
	<table><tr><td>3</td><td>4</td></tr><tr><td>35</td><td>25</td></tr></table>
	 

Final Swap: swap(A, start, endOfLeftList); Start= 3, Pivot=35 Scan= 4, Eoll= 4	<table><tr><td>3</td><td>4</td></tr><tr><td>25</td><td>35</td></tr></table>
Return	Eoll = 4



Recursion Tree for Quick Sort