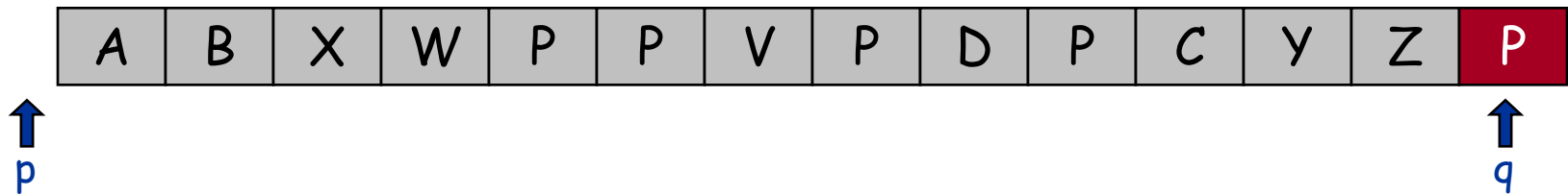


3-Way Partitioning

3-way partitioning.

- Choose partitioning element.
- Scan from left \geq element.
- Scan from right \leq element.
- Exchange.
- Move to left or right end if equal.
- Repeat until pointers cross.



partition element



unpartitioned

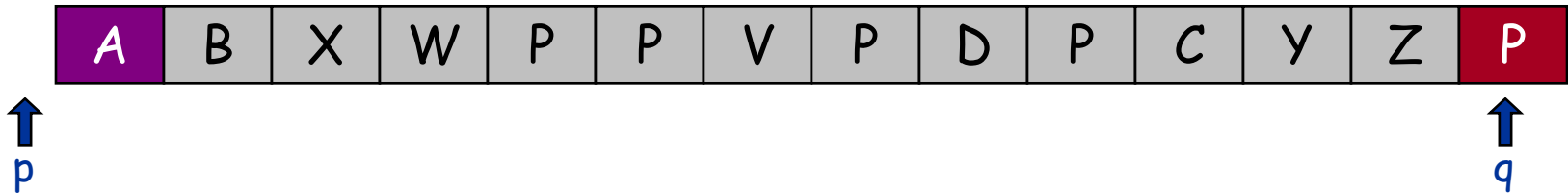


partitioned

3-Way Partitioning

3-way partitioning.

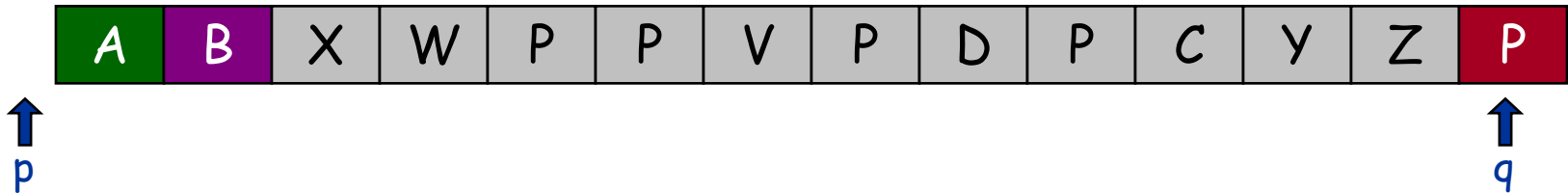
- Choose partitioning element.
- Scan from left \geq element.
- Scan from right for \leq element.
- Exchange.
- Move to left or right end if equal.
- Repeat until pointers cross.



3-Way Partitioning

3-way partitioning.

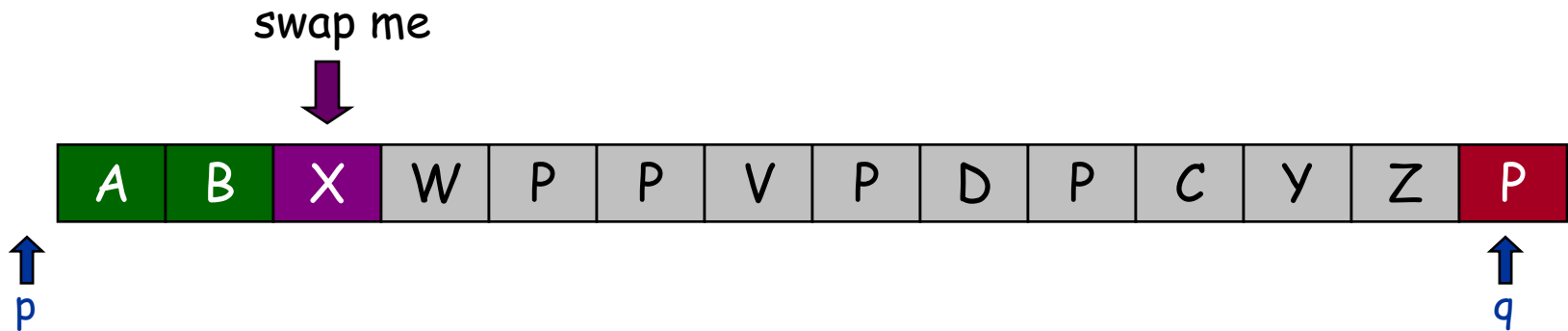
- Choose partitioning element.
- Scan from left \geq element.
- Scan from right for \leq element.
- Exchange.
- Move to left or right end if equal.
- Repeat until pointers cross.



3-Way Partitioning

3-way partitioning.

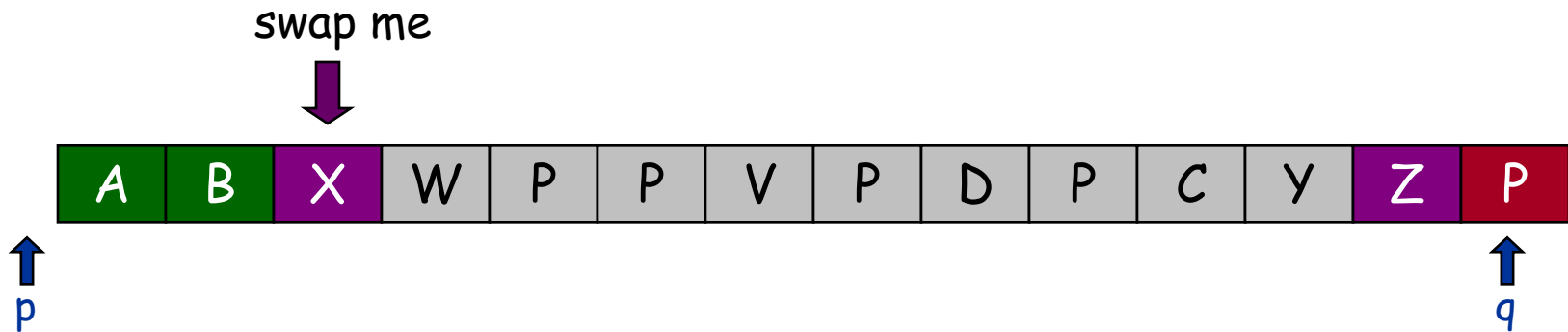
- Choose partitioning element.
- Scan from left \geq element.
- Scan from right \leq element.
- Exchange.
- Move to left or right end if equal.
- Repeat until pointers cross.



3-Way Partitioning

3-way partitioning.

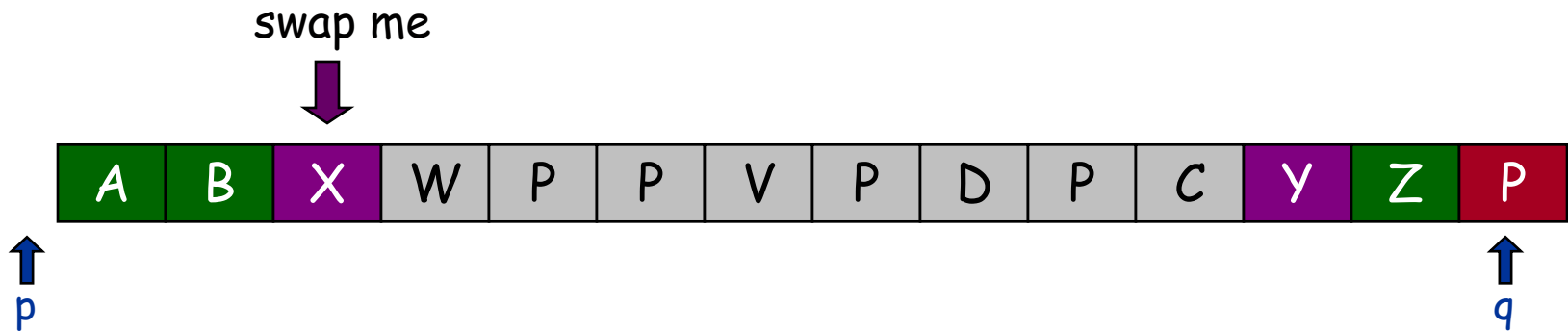
- Choose partitioning element.
- Scan from left \geq element.
- Scan from right \leq element.
- Exchange.
- Move to left or right end if equal.
- Repeat until pointers cross.



3-Way Partitioning

3-way partitioning.

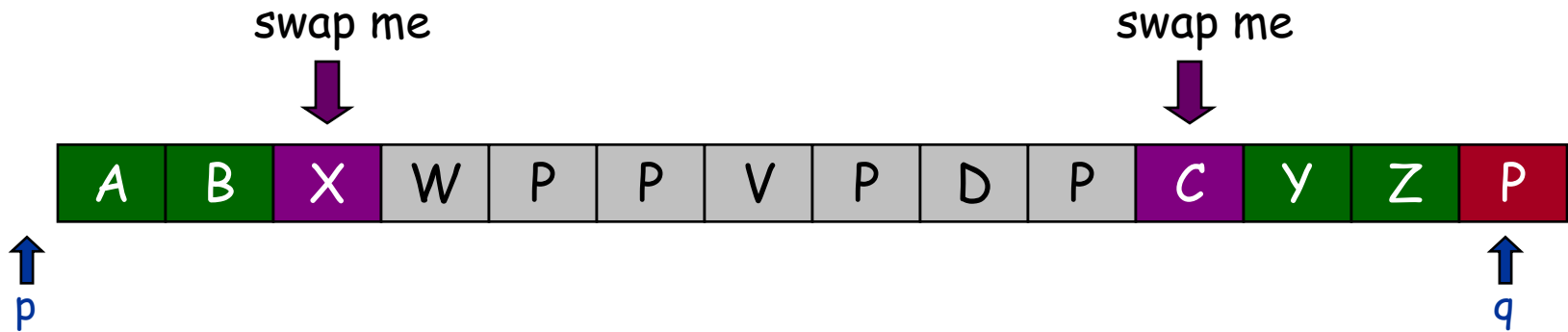
- Choose partitioning element.
- Scan from left \geq element.
- Scan from right \leq element.
- Exchange.
- Move to left or right end if equal.
- Repeat until pointers cross.



3-Way Partitioning

3-way partitioning.

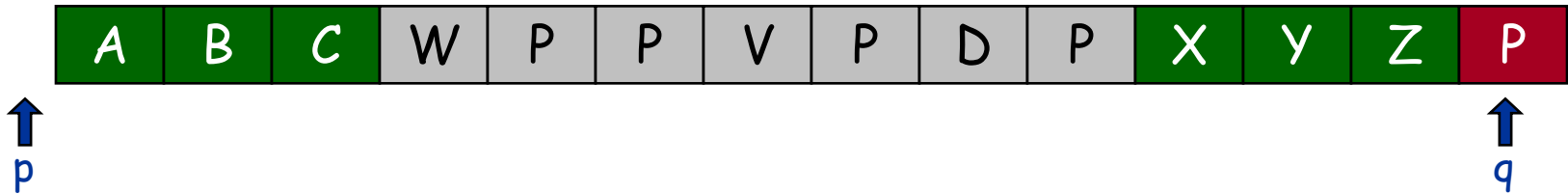
- Choose partitioning element.
- Scan from left \geq element.
- Scan from right \leq element.
- Exchange.
- Move to left or right end if equal.
- Repeat until pointers cross.



3-Way Partitioning

3-way partitioning.

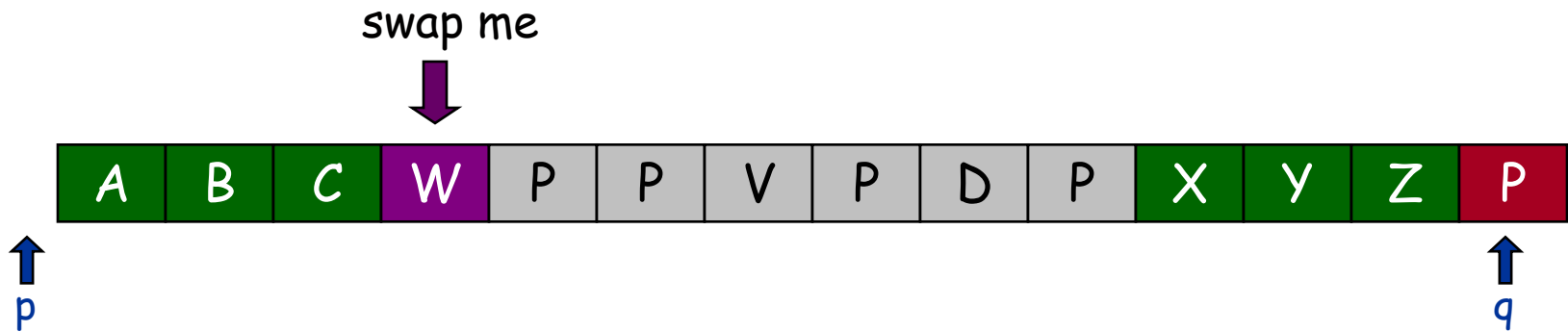
- Choose partitioning element.
- Scan from left \geq element.
- Scan from right for \leq element.
- Exchange.
- Move to left or right end if equal.
- Repeat until pointers cross.



3-Way Partitioning

3-way partitioning.

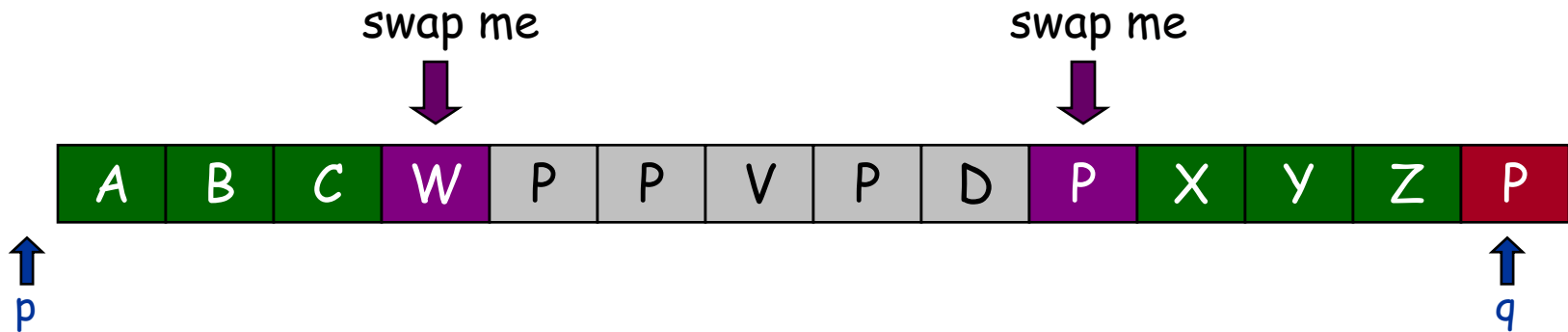
- Choose partitioning element.
- Scan from left \geq element.
- Scan from right \leq element.
- Exchange.
- Move to left or right end if equal.
- Repeat until pointers cross.



3-Way Partitioning

3-way partitioning.

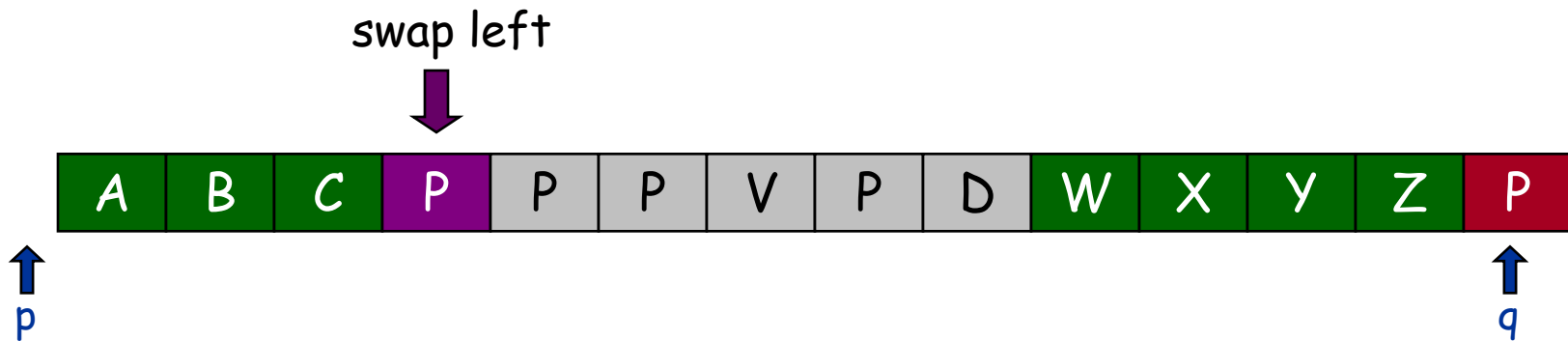
- Choose partitioning element.
- Scan from left \geq element.
- Scan from right \leq element.
- Exchange.
- Move to left or right end if equal.
- Repeat until pointers cross.



3-Way Partitioning

3-way partitioning.

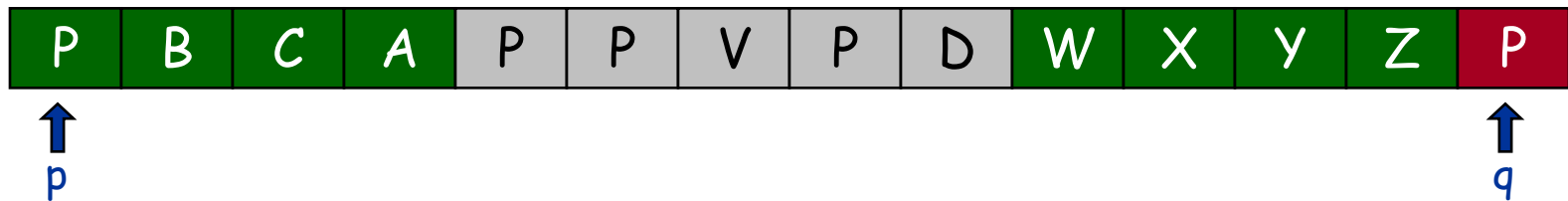
- Choose partitioning element.
- Scan from left \geq element.
- Scan from right \leq element.
- Exchange.
- Move to left or right end if equal.
- Repeat until pointers cross.



3-Way Partitioning

3-way partitioning.

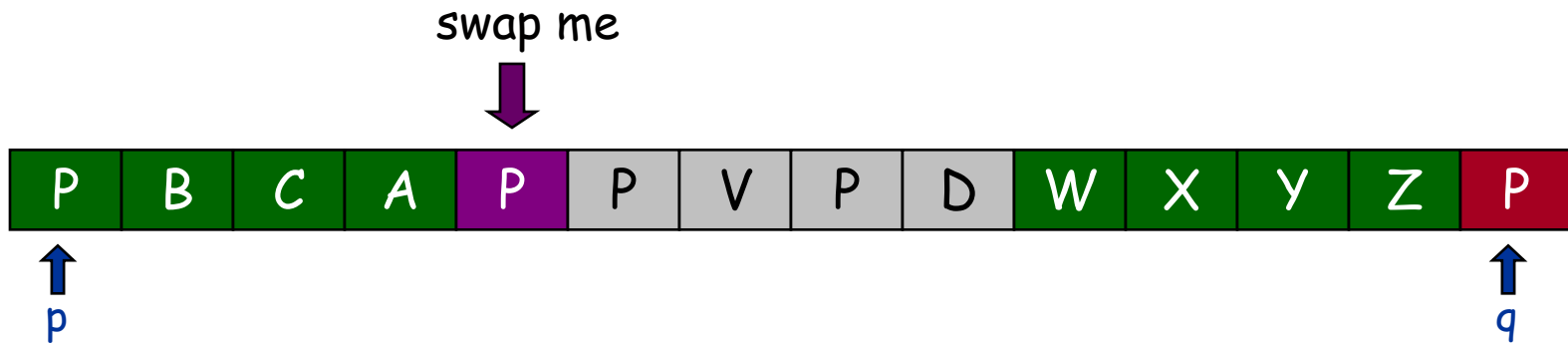
- Choose partitioning element.
- Scan from left \geq element.
- Scan from right for \leq element.
- Exchange.
- Move to left or right end if equal.
- Repeat until pointers cross.



3-Way Partitioning

3-way partitioning.

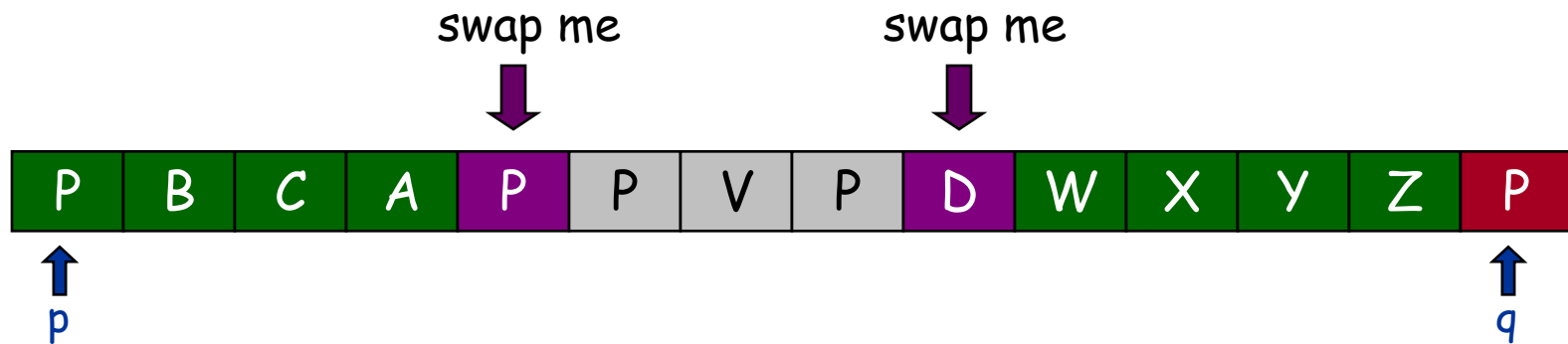
- Choose partitioning element.
- Scan from left \geq element.
- Scan from right \leq element.
- Exchange.
- Move to left or right end if equal.
- Repeat until pointers cross.



3-Way Partitioning

3-way partitioning.

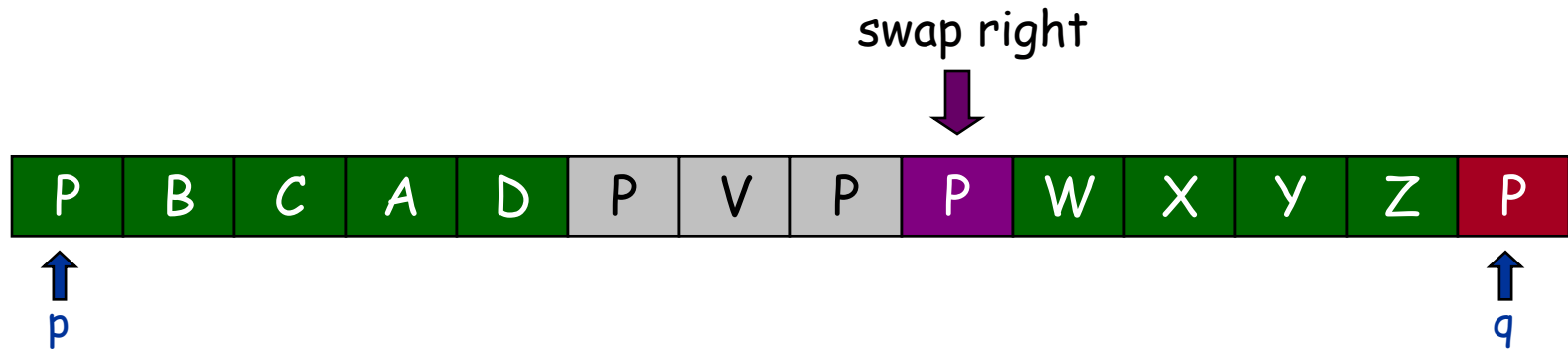
- Choose partitioning element.
- Scan from left \geq element.
- Scan from right \leq element.
- Exchange.
- Move to left or right end if equal.
- Repeat until pointers cross.



3-Way Partitioning

3-way partitioning.

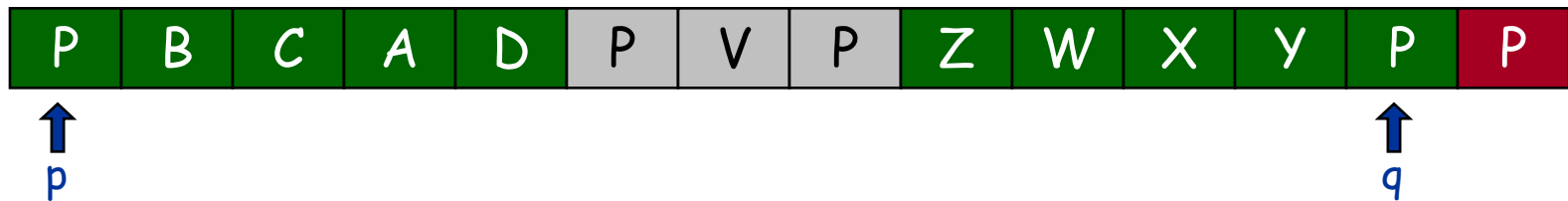
- Choose partitioning element.
- Scan from left \geq element.
- Scan from right \leq element.
- Exchange.
- Move to left or right end if equal.
- Repeat until pointers cross.



3-Way Partitioning

3-way partitioning.

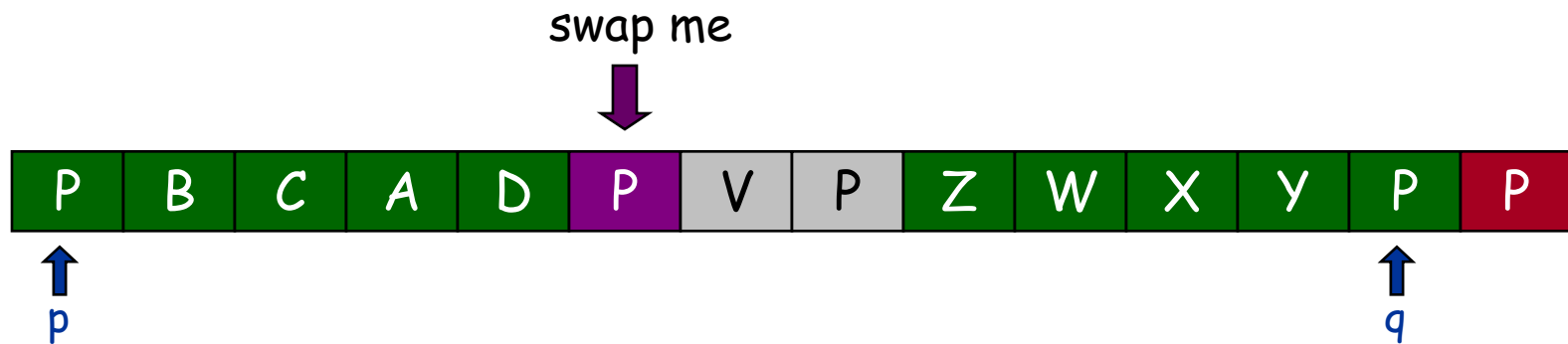
- Choose partitioning element.
- Scan from left \geq element.
- Scan from right for \leq element.
- Exchange.
- Move to left or right end if equal.
- Repeat until pointers cross.



3-Way Partitioning

3-way partitioning.

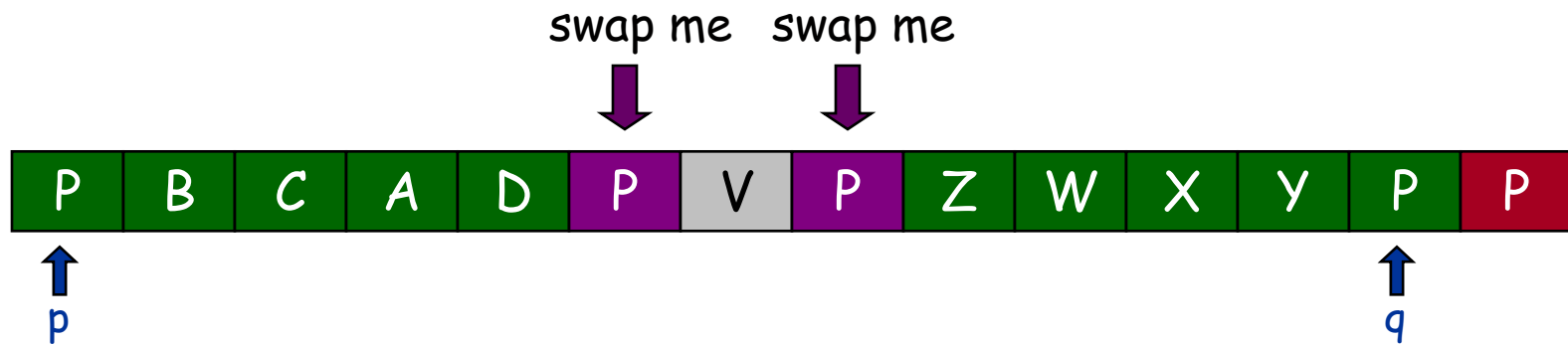
- Choose partitioning element.
- Scan from left \geq element.
- Scan from right \leq element.
- Exchange.
- Move to left or right end if equal.
- Repeat until pointers cross.



3-Way Partitioning

3-way partitioning.

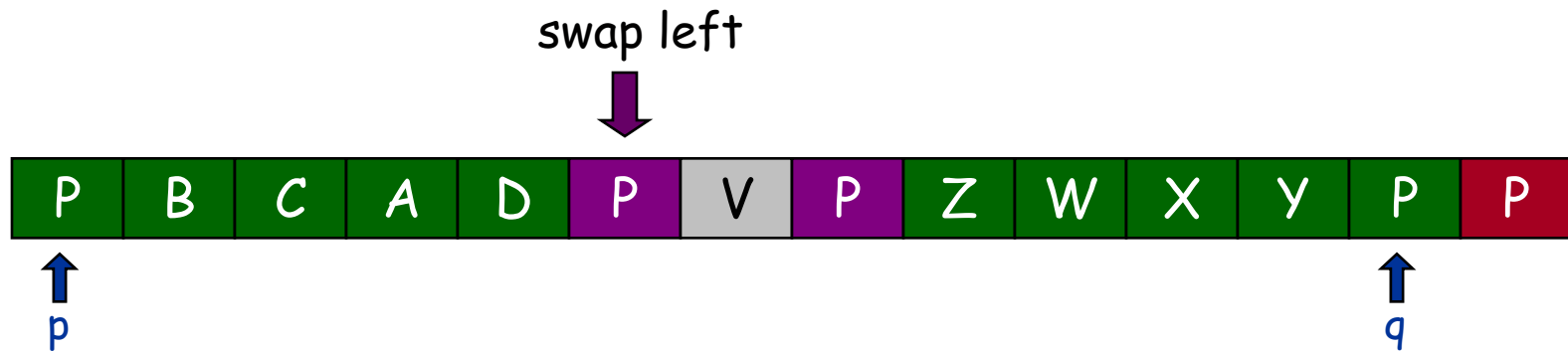
- Choose partitioning element.
- Scan from left \geq element.
- Scan from right \leq element.
- Exchange.
- Move to left or right end if equal.
- Repeat until pointers cross.



3-Way Partitioning

3-way partitioning.

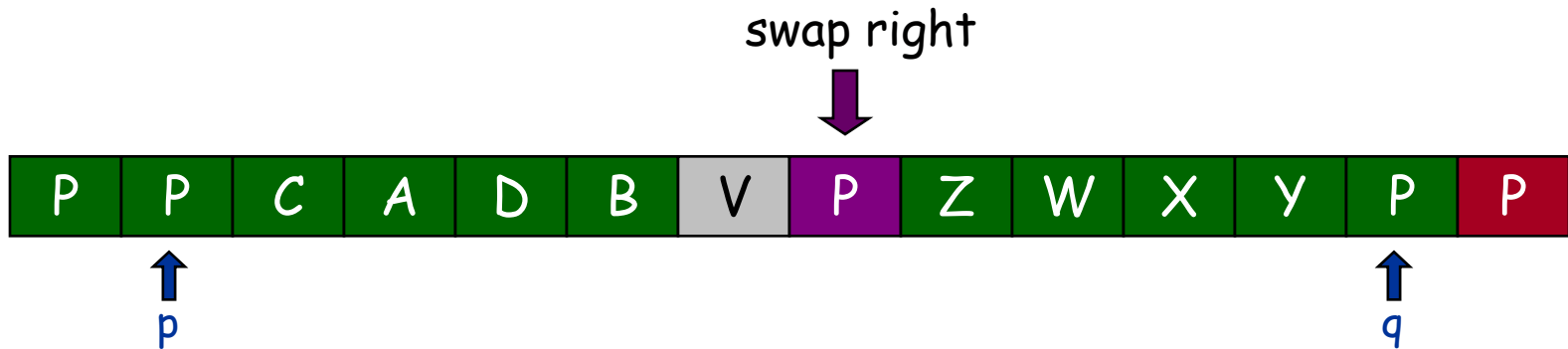
- Choose partitioning element.
- Scan from left \geq element.
- Scan from right \leq element.
- Exchange.
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- Repeat until pointers cross.



3-Way Partitioning

3-way partitioning.

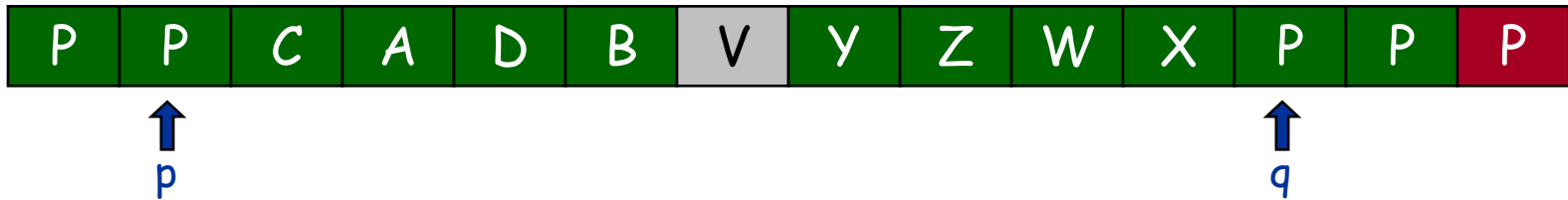
- Choose partitioning element.
- Scan from left \geq element.
- Scan from right \leq element.
- Exchange.
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3-Way Partitioning

3-way partitioning.

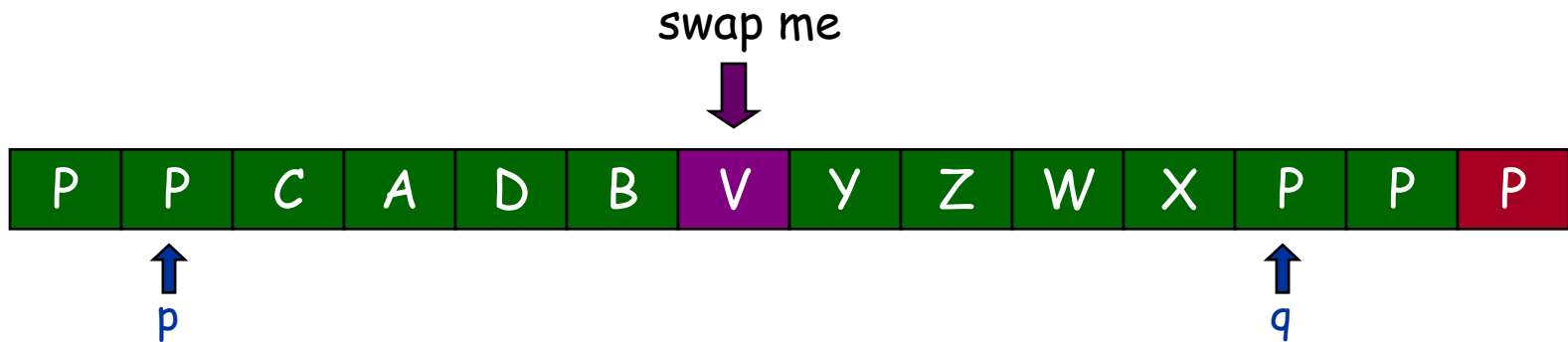
- Choose partitioning element.
- Scan from left \geq element.
- Scan from right for \leq element.
- Exchange.
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- Repeat until pointers cross.



3-Way Partitioning

3-way partitioning.

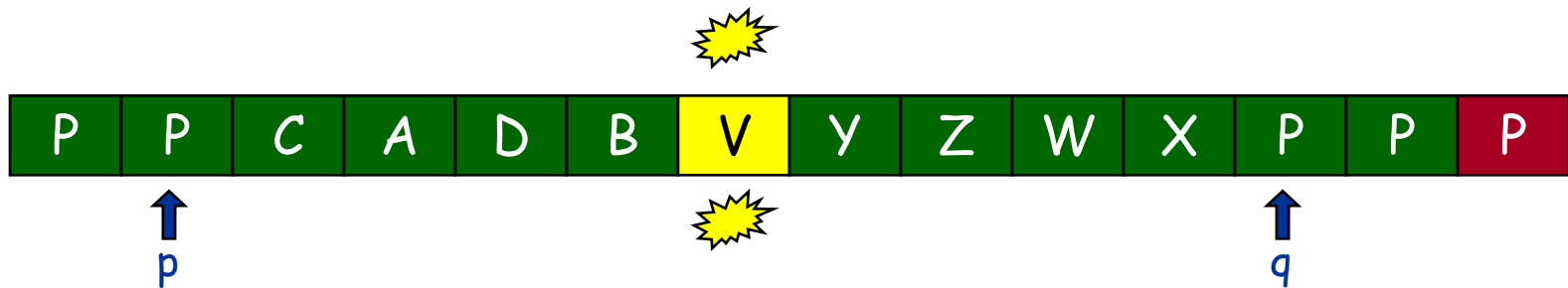
- Choose partitioning element.
- Scan from left \geq element.
- Scan from right \leq element.
- Exchange.
- Move to left or right end if equal.
- Repeat until pointers cross.



3-Way Partitioning

3-way partitioning.

- Choose partitioning element.
- Scan from left \geq element.
- Scan from right \leq element.
- Exchange.
- Move to left or right end if equal.
- Repeat until pointers cross.

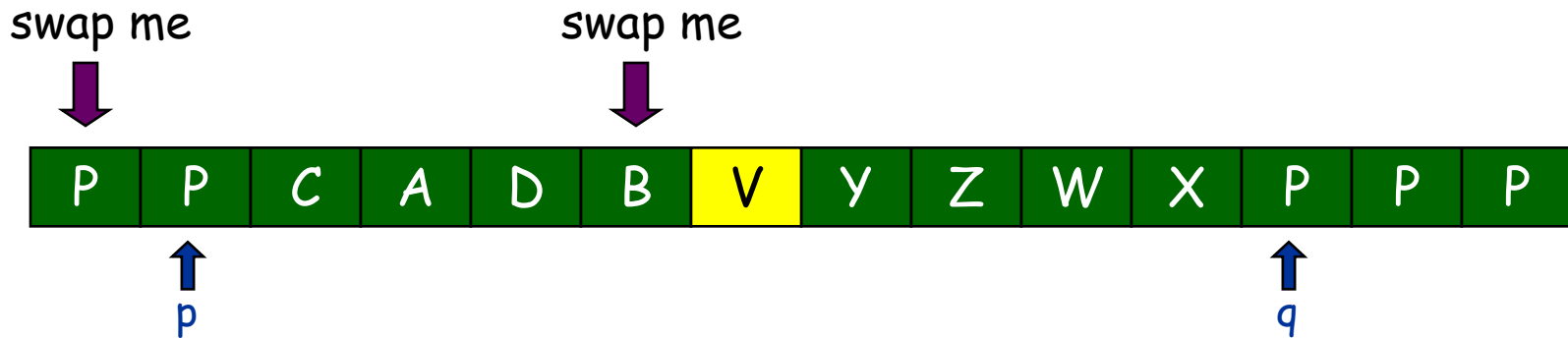


pointers cross

3-Way Partitioning

3-way partitioning.

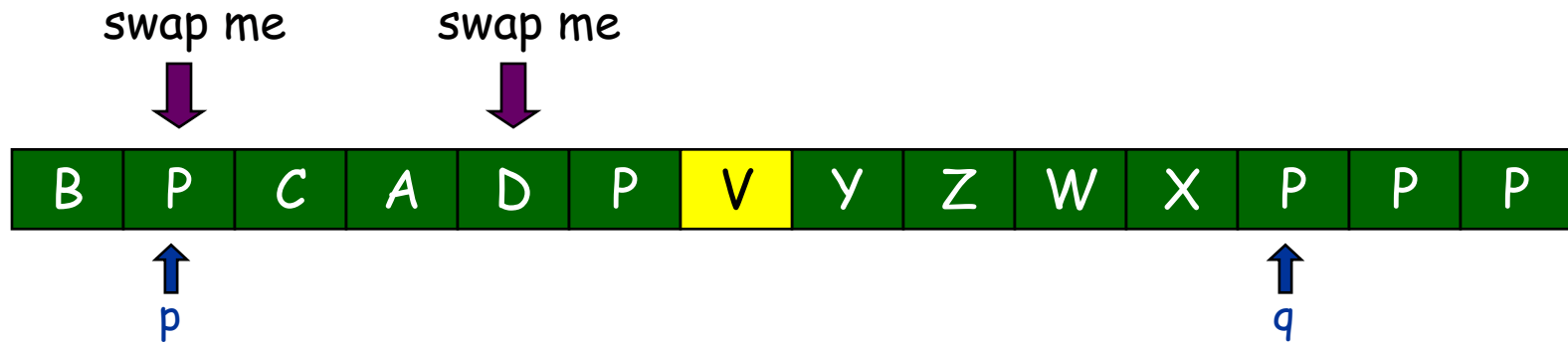
- Swap elements on left with elements in middle.
- Swap elements on right with elements in middle.



3-Way Partitioning

3-way partitioning.

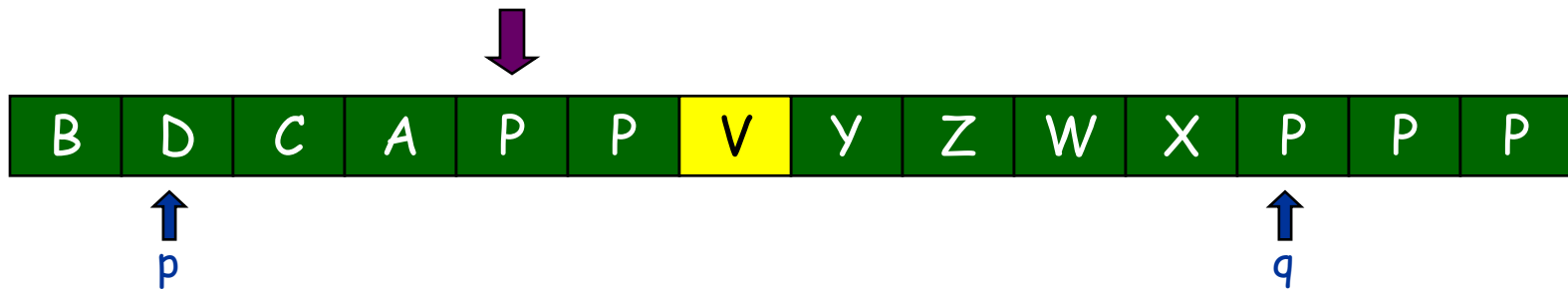
- Swap elements on left with elements in middle.
- Swap elements on right with elements in middle.



3-Way Partitioning

3-way partitioning.

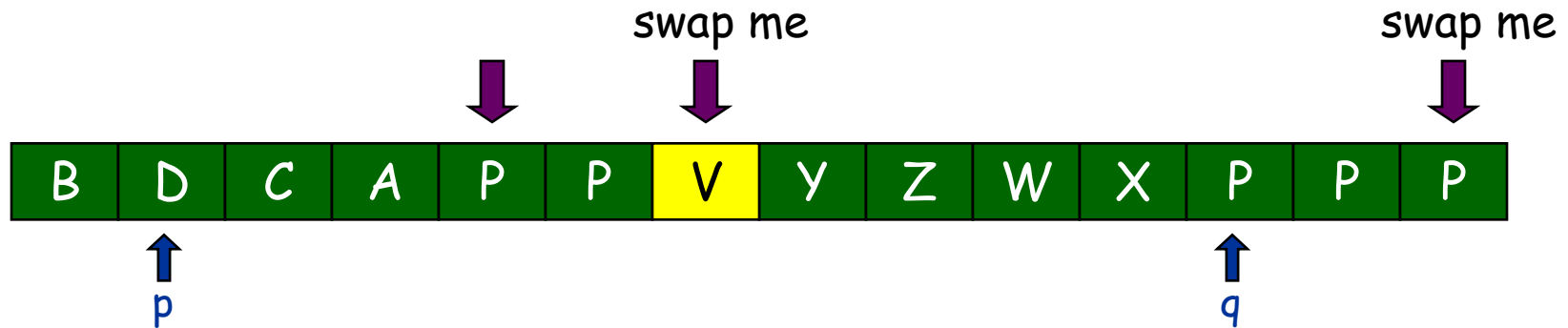
- Swap elements on left with elements in middle.
- Swap elements on right with elements in middle.



3-Way Partitioning

3-way partitioning.

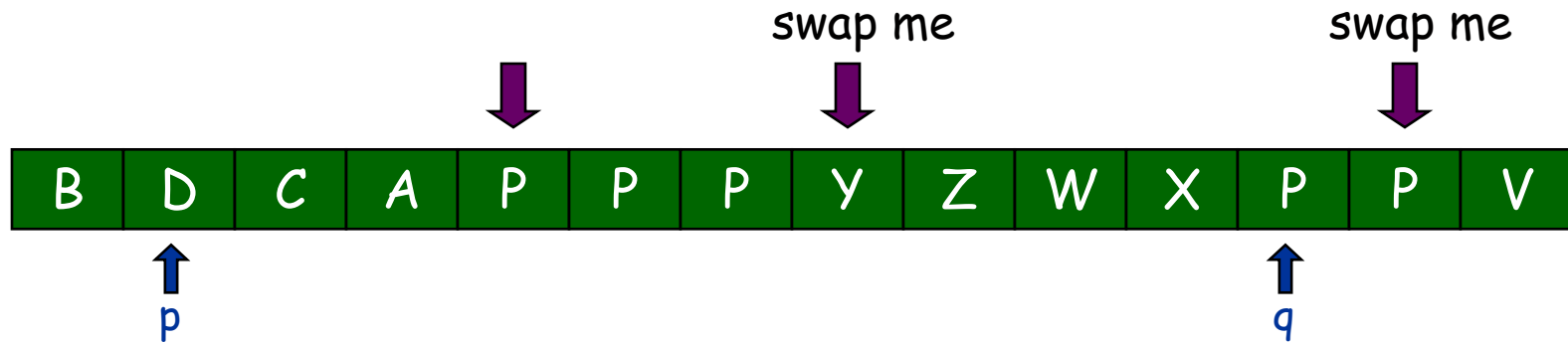
- Swap elements on left with elements in middle.
- Swap elements on right with elements in middle.



3-Way Partitioning

3-way partitioning.

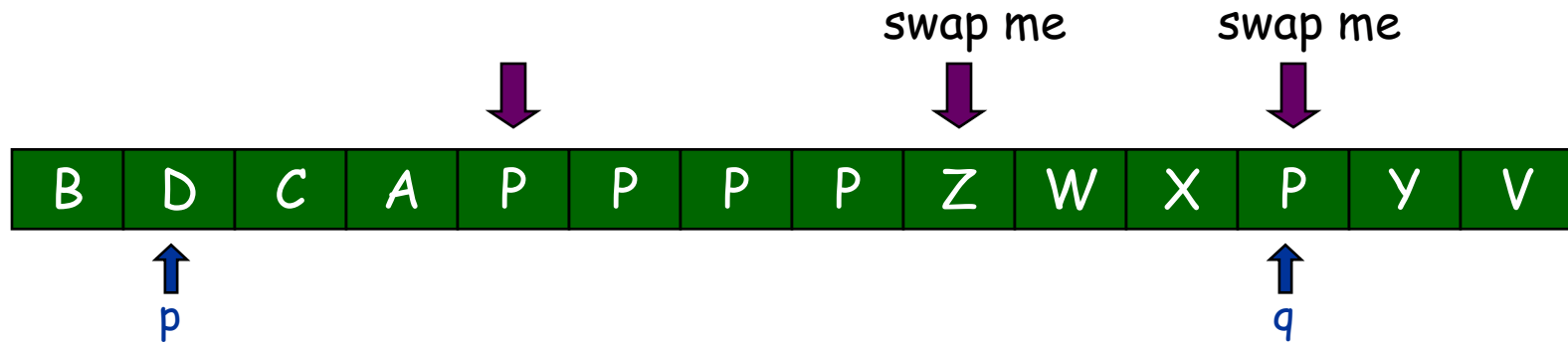
- Swap elements on left with elements in middle.
- Swap elements on right with elements in middle.



3-Way Partitioning

3-way partitioning.

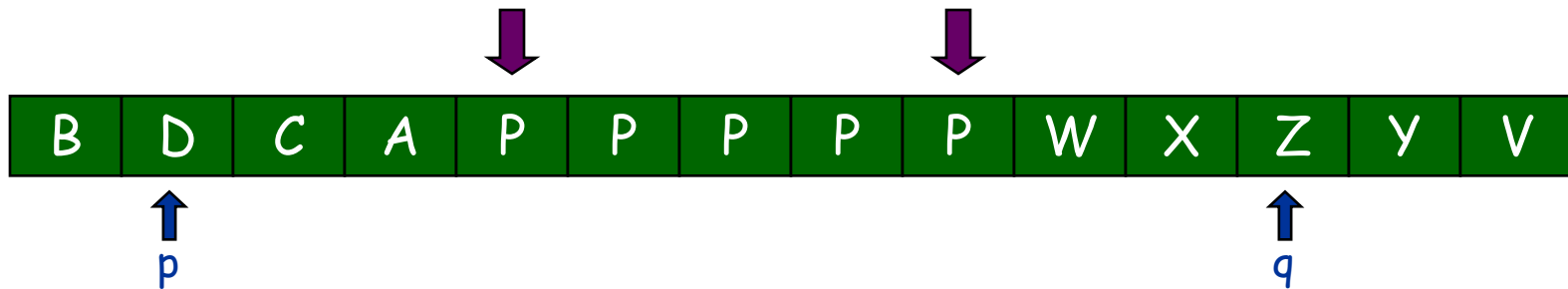
- Swap elements on left with elements in middle.
- Swap elements on right with elements in middle.



3-Way Partitioning

3-way partitioning.

- Swap elements on left with elements in middle.
- Swap elements on right with elements in middle.



3-way partitioned!