

Input Array

14	7	3	9	6	3	11	13	0	10	4	15	9	2	15	7
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bucket 1

Pivot: 8

Bucket 2

0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Counting Array

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Reading

--	--	--	--

Cache miss: 0

Writing

Cache miss: 0

Input Array

14	7	3	9	6	3	11	13	0	10	4	15	9	2	15	7
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bucket 1

Pivot: 8

Bucket 2

								14							
0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Counting Array

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Reading

--	--	--	--

Cache miss: 1

Writing

Cache miss: 1

Input Array

14	7	3	9	6	3	11	13	0	10	4	15	9	2	15	7
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bucket 1

Pivot: 8

Bucket 2

7								14							
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Counting Array

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Reading

--	--	--	--

Cache miss: 1

Writing

Cache miss: 2

Input Array

14	7	3	9	6	3	11	13	0	10	4	15	9	2	15	7
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bucket 1

Pivot: 8

Bucket 2

7	3							14							
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Counting Array

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Reading

--	--	--	--

Cache miss: 1

Writing

Cache miss: 2

Input Array

14	7	3	9	6	3	11	13	0	10	4	15	9	2	15	7
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bucket 1

Pivot: 8

Bucket 2

7	3							14	9						
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Counting Array

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Reading

--	--	--	--

Cache miss: 1

Writing

Cache miss: 2

Input Array

14	7	3	9	6	3	11	13	0	10	4	15	9	2	15	7
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bucket 1

7	3	6					
0	1	2	3	4	5	6	7

Pivot: 8

Bucket 2

14	9						
0	1	2	3	4	5	6	7

Counting Array

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Reading

--	--	--	--

Cache miss: 2

Writing

Cache miss: 2

Input Array

14	7	3	9	6	3	11	13	0	10	4	15	9	2	15	7
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bucket 1

Pivot: 8

Bucket 2

7	3	6	3					14	9						
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Counting Array

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Reading

--	--	--	--

Cache miss: 2

Writing

Cache miss: 2

Input Array

14	7	3	9	6	3	11	13	0	10	4	15	9	2	15	7
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bucket 1

Pivot: 8

Bucket 2

7	3	6	3					14	9	11					
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Counting Array

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Reading

--	--	--	--

Cache miss: 2

Writing

Cache miss: 2

Input Array

14	7	3	9	6	3	11	13	0	10	4	15	9	2	15	7
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bucket 1

Pivot: 8

Bucket 2

7	3	6	3					14	9	11	13				
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Counting Array

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Reading

--	--	--	--

Cache miss: 2

Writing

Cache miss: 2

Input Array

14	7	3	9	6	3	11	13	0	10	4	15	9	2	15	7
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bucket 1

Pivot: 8

Bucket 2

7	3	6	3	0				14	9	11	13				
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Counting Array

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Reading

--	--	--	--

Cache miss: 3

Writing

Cache miss: 3

Input Array

14	7	3	9	6	3	11	13	0	10	4	15	9	2	15	7
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bucket 1

Pivot: 8

Bucket 2

7	3	6	3	0				14	9	11	13	10			
0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Counting Array

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Reading

--	--	--	--

Cache miss: 3

Writing

Cache miss: 4

Input Array

14	7	3	9	6	3	11	13	0	10	4	15	9	2	15	7
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bucket 1

Pivot: 8

Bucket 2

7	3	6	3	0	4			14	9	11	13	10			
0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Counting Array

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Reading

--	--	--	--

Cache miss: 3

Writing

Cache miss: 4

Input Array

14	7	3	9	6	3	11	13	0	10	4	15	9	2	15	7
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bucket 1

Pivot: 8

Bucket 2

7	3	6	3	0	4			14	9	11	13	10	15		
0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Counting Array

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Reading

--	--	--	--

Cache miss: 3

Writing

Cache miss: 4

Input Array

14	7	3	9	6	3	11	13	0	10	4	15	9	2	15	7
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bucket 1

Pivot: 8

Bucket 2

7	3	6	3	0	4			14	9	11	13	10	15	9	
0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Counting Array

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Reading

--	--	--	--

Cache miss: 4

Writing

Cache miss: 4

Input Array

14	7	3	9	6	3	11	13	0	10	4	15	9	2	15	7
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bucket 1

Pivot: 8

Bucket 2

7	3	6	3	0	4	2		14	9	11	13	10	15	9	
0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Counting Array

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Reading

--	--	--	--

Cache miss: 4

Writing

Cache miss: 4

Input Array

14	7	3	9	6	3	11	13	0	10	4	15	9	2	15	7
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bucket 1

Pivot: 8

Bucket 2

7	3	6	3	0	4	2		14	9	11	13	10	15	9	15
0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Counting Array

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Reading

--	--	--	--

Cache miss: 4

Writing

Cache miss: 4

Input Array

14	7	3	9	6	3	11	13	0	10	4	15	9	2	15	7
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bucket 1

Pivot: 8

Bucket 2

7	3	6	3	0	4	2	7	14	9	11	13	10	15	9	15
0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Counting Array

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Reading

--	--	--	--

Cache miss: 4

Writing

Cache miss: 4

Input Array

14	7	3	9	6	3	11	13	0	10	4	15	9	2	15	7
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bucket 1

Pivot: 8

Bucket 2

7	3	6	3	0	4	2	7	14	9	11	13	10	15	9	15
0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Counting Array

							1								
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Reading

--	--	--	--

Cache miss: 5

Writing

Cache miss: 5

Input Array

14	7	3	9	6	3	11	13	0	10	4	15	9	2	15	7
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bucket 1

Pivot: 8

Bucket 2

7	3	6	3	0	4	2	7	14	9	11	13	10	15	9	15
0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Counting Array

			1				1								
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Reading

--	--	--	--

Cache miss: 5

Writing

Cache miss: 6

Input Array

14	7	3	9	6	3	11	13	0	10	4	15	9	2	15	7
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bucket 1

Pivot: 8

Bucket 2

7	3	6	3	0	4	2	7	14	9	11	13	10	15	9	15
0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Counting Array

			1			1	1								
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Reading

--	--	--	--

Cache miss: 5

Writing

Cache miss: 6

Input Array

14	7	3	9	6	3	11	13	0	10	4	15	9	2	15	7
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bucket 1

Pivot: 8

Bucket 2

7	3	6	3	0	4	2	7	14	9	11	13	10	15	9	15
0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Counting Array

			2			1	1								
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Reading

--	--	--	--

Cache miss: 5

Writing

Cache miss: 6

Input Array

14	7	3	9	6	3	11	13	0	10	4	15	9	2	15	7
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bucket 1

Pivot: 8

Bucket 2

7	3	6	3	0	4	2	7	14	9	11	13	10	15	9	15
0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Counting Array

1			2			1	1								
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Reading

--	--	--	--

Cache miss: 6

Writing

Cache miss: 6

Input Array

14	7	3	9	6	3	11	13	0	10	4	15	9	2	15	7
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bucket 1

Pivot: 8

Bucket 2

7	3	6	3	0	4	2	7	14	9	11	13	10	15	9	15
0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Counting Array

1			2	1		1	1								
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Reading

--	--	--	--

Cache miss: 6

Writing

Cache miss: 6

Input Array

14	7	3	9	6	3	11	13	0	10	4	15	9	2	15	7
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bucket 1

Pivot: 8

Bucket 2

7	3	6	3	0	4	2	7	14	9	11	13	10	15	9	15
0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Counting Array

1		1	2	1		1	1								
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Reading

--	--	--	--

Cache miss: 6

Writing

Cache miss: 6

Input Array

14	7	3	9	6	3	11	13	0	10	4	15	9	2	15	7
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bucket 1

Pivot: 8

Bucket 2

7	3	6	3	0	4	2	7	14	9	11	13	10	15	9	15
0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Counting Array

1		1	2	1		1	2								
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Reading

--	--	--	--

Cache miss: 6

Writing

Cache miss: 6

Input Array

14	7	3	9	6	3	11	13	0	10	4	15	9	2	15	7
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bucket 1

Pivot: 8

Bucket 2

7	3	6	3	0	4	2	7	14	9	11	13	10	15	9	15
0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Counting Array

1		1	2	1		1	2							1	
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Reading

--	--	--	--

Cache miss: 7

Writing

Cache miss: 7

Input Array

14	7	3	9	6	3	11	13	0	10	4	15	9	2	15	7
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bucket 1

Pivot: 8

Bucket 2

7	3	6	3	0	4	2	7	14	9	11	13	10	15	9	15
0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Counting Array

1		1	2	1		1	2		1					1	
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Reading

--	--	--	--

Cache miss: 7

Writing

Cache miss: 8

Input Array

14	7	3	9	6	3	11	13	0	10	4	15	9	2	15	7
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bucket 1

Pivot: 8

Bucket 2

7	3	6	3	0	4	2	7	14	9	11	13	10	15	9	15
0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Counting Array

1		1	2	1		1	2		1		1			1	
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Reading

--	--	--	--

Cache miss: 7

Writing

Cache miss: 8

Input Array

14	7	3	9	6	3	11	13	0	10	4	15	9	2	15	7
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bucket 1

Pivot: 8

Bucket 2

7	3	6	3	0	4	2	7	14	9	11	13	10	15	9	15
0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Counting Array

1		1	2	1		1	2		1		1		1		
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Reading

--	--	--	--

Cache miss: 7

Writing

Cache miss: 8

Input Array

14	7	3	9	6	3	11	13	0	10	4	15	9	2	15	7
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bucket 1

Pivot: 8

Bucket 2

7	3	6	3	0	4	2	7	14	9	11	13	10	15	9	15
0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Counting Array

1		1	2	1		1	2		1	1			1	1	
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Reading

--	--	--	--

Cache miss: 8

Writing

Cache miss: 8

Input Array

14	7	3	9	6	3	11	13	0	10	4	15	9	2	15	7
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bucket 1

Pivot: 8

Bucket 2

7	3	6	3	0	4	2	7	14	9	11	13	10	15	9	15
0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Counting Array

1		1	2	1		1	2		1	1	1		1	1	1
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Reading

--	--	--	--

Cache miss: 8

Writing

Cache miss: 8

Input Array

14	7	3	9	6	3	11	13	0	10	4	15	9	2	15	7
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bucket 1

Pivot: 8

Bucket 2

7	3	6	3	0	4	2	7	14	9	11	13	10	15	9	15
0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Counting Array

1		1	2	1		1	2		2	1	1		1	1	1
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Reading

--	--	--	--

Cache miss: 8

Writing

Cache miss: 8

Input Array

14	7	3	9	6	3	11	13	0	10	4	15	9	2	15	7
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bucket 1

Pivot: 8

Bucket 2

7	3	6	3	0	4	2	7	14	9	11	13	10	15	9	15
0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Counting Array

1		1	2	1		1	2		2	1	1		1	1	2
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Reading

--	--	--	--

Cache miss: 8

Writing

Cache miss: 8

Input Array

14	7	3	9	6	3	11	13	0	10	4	15	9	2	15	7
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bucket 1

Pivot: 8

Bucket 2

7	3	6	3	0	4	2	7	14	9	11	13	10	15	9	15
0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Counting Array

1		1	2	1		1	2		2	1	1		1	1	2
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Reading

--	--	--	--

Cache miss: 8

Writing

Cache miss: 8

Total cache misses: 16