

Data Structures



Key Indexed Searching and Sorting

Key-Indexed Searching - Setup

	0	1	2	3	4	5	
A =	5	1	7	2	8	4	

	0	1	2	3	4	5	6	7	8	
B =	0	0	0	0	0	0	0	0	0	

	0	1	2	3	4	5	6	7	8	
B =	0	1	1	0	1	1	0	1	1	

Key-Indexed Searching

	0	1	2	3	4	5	6	7	8
B =	0	1	1	0	1	1	0	1	1

Search 8

$B[8] = 1$

Search 3

$B[3] = 0$

Key-Indexed Sorting

	0	1	2	3	4	5	6	7	8
B =	0	1	1	0	1	1	0	1	1

	0	1	2	3	4	5
A =						

Key-Indexing - Restrictions?

Must be Non-Negative Integers

Cannot have Repeated Elements

Out of Place - must account for Space

Key-Indexing - Negative Integers

A =

0	1	2	3	4
3	-3	1	5	-2

**Shift Amount
Extra!!**

B` =

-3	-2	-1	0	1	2	3	4	5
1	1	0	0	1	0	1	0	1

B =

0	1	2	3	4	5	6	7	8
1	1	0	0	1	0	1	0	1

Key-Indexing - Non Distinct Integers

A =

0	1	2	3	4
1	-3	1	5	1

B` =

0	1	2	3	4	5	6	7	8
1	0	0	0	1	0	0	0	1

B =

0	1	2	3	4	5	6	7	8
1	0	0	0	3	0	0	0	1