Complexity

Correction

Exercise 1 - Time Complexity

1. O(n)
2. $O(n^2)$
3. O(1)
4. O(log(n))
5. O(n log(n))
6. $O(2^n)$
7. $O(n^3)$
8. $O(2^n)$
9. $O(n^{0.5})$
10. $O(n^2)$

Exercise 2 - Space Complexity

1. O(1)
2. O(n)
3. $O(n^2)$
4. O(n)
5. O(n)
6. O(n)
7. O(n)
8. O(n)
9. O(1)
10. $O(n^2)$

Exercise 3 - Sorting Algorithm

Array Sorting Algorithms

Algorithm	Time Complexity			Space Complexity
	Best	Average	Worst	Worst
Quicksort	Ω(n log(n))	θ(n log(n))	O(n^2)	O(log(n))
Mergesort	Ω(n log(n))	θ(n log(n))	O(n log(n))	O(n)
Timsort	Ω(n)	θ(n log(n))	O(n log(n))	O(n)
Heapsort	Ω(n log(n))	θ(n log(n))	O(n log(n))	O(1)
Bubble Sort	Ω(n)	θ(n^2)	O(n^2)	O(1)
Insertion Sort	Ω(n)	θ(n^2)	O(n^2)	O(1)
Selection Sort	Ω(n^2)	θ(n^2)	O(n^2)	O(1)