CS2x1:Data Structures and Algorithms

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Exercise : Sorting (1)

An array contains four occurrences of 0, five occurrences of 1, and three occurrences of 2 in any order. The array is to be sorted using swap operations (elements that are swapped need to be adjacent).

(i) What is the minimum number of swaps needed to sort such an array in the worst case?

(ii) Give an ordering of elements in the above array so that the minimum number of swaps needed to sort the array is maximum.

Exercise : Sorting (2)

Which of the following sorting algorithm is the lowest worst case time complexity?

(a) Bubble sort
(b) Heap sort
(c) Selection sort
(d) Quick sort

Exercise: Searching (1)

There are two sorted lists each of length *n*. An element to be searched in both lists. The lists are mutually exclusive. The maximum number of comparisons required using binary search to find an element and its time complexity?

List of Topics [C201]

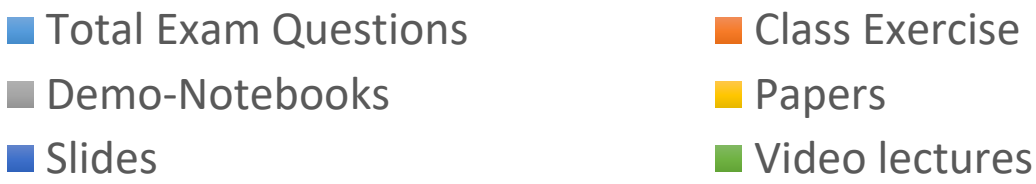
- Introduction:
  - *Data structures*
  - *Abstract data types*
  - *Analysis of algorithms.*

- Creation and manipulation of data structures:
  - *Arrays; Stacks; Queues; Linked lists; Trees; Heaps; Hash tables; Balanced trees [AVL]; Graphs*.

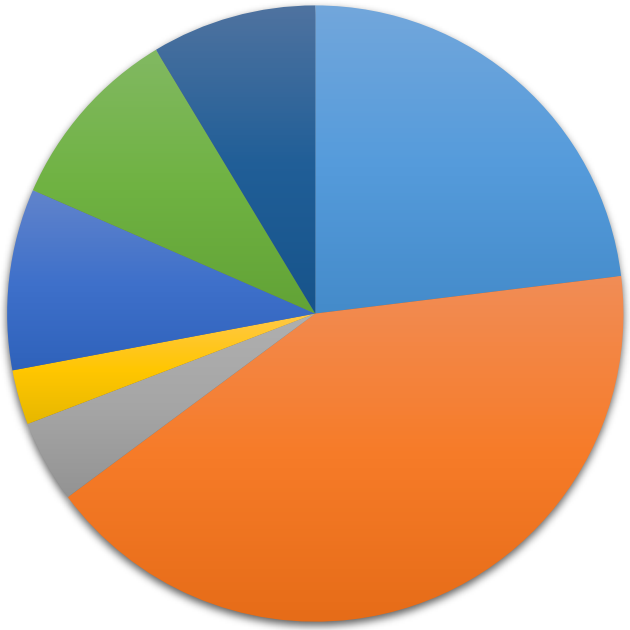
- *Algorithms for sorting and searching*, *depth-first and breadth-first search, shortest paths and minimum spanning tree*.

Statistics (1)

- Video Lectures
- Textbooks
- Slides
- Research Papers
- Practice Questions
- Marked-Slides
- Exams
- Demo-Notebooks

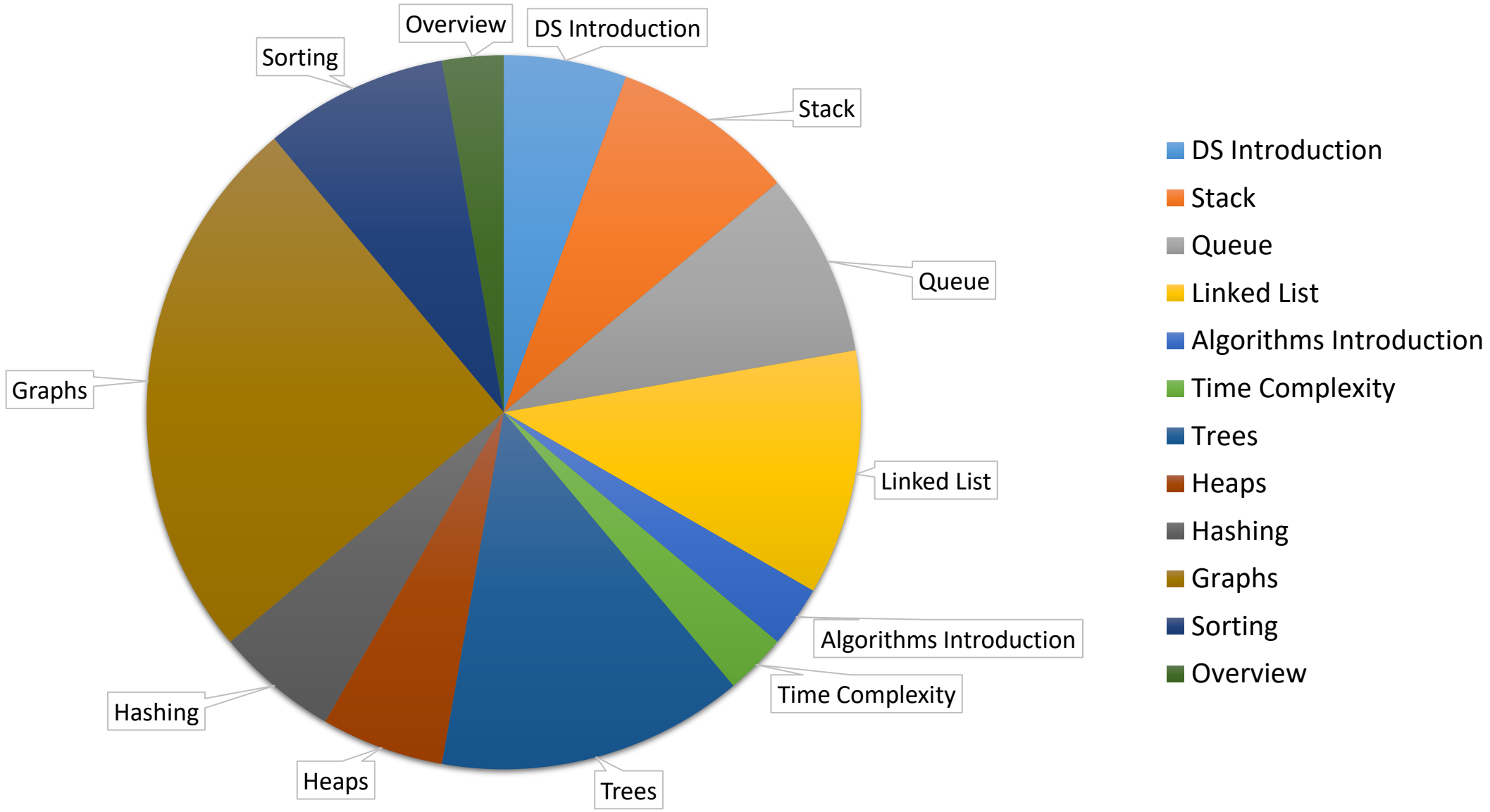


- Warshall.pdf
- stack-initally-named
- Recursive Functions
- Quicksort.pdf
- Prims.pdf
- optil1.pdf
- opitl2.pdf
- Krukskal.pdf
- Floyd.pdf
- Dijkstra.pdf
- Bellman.pdf

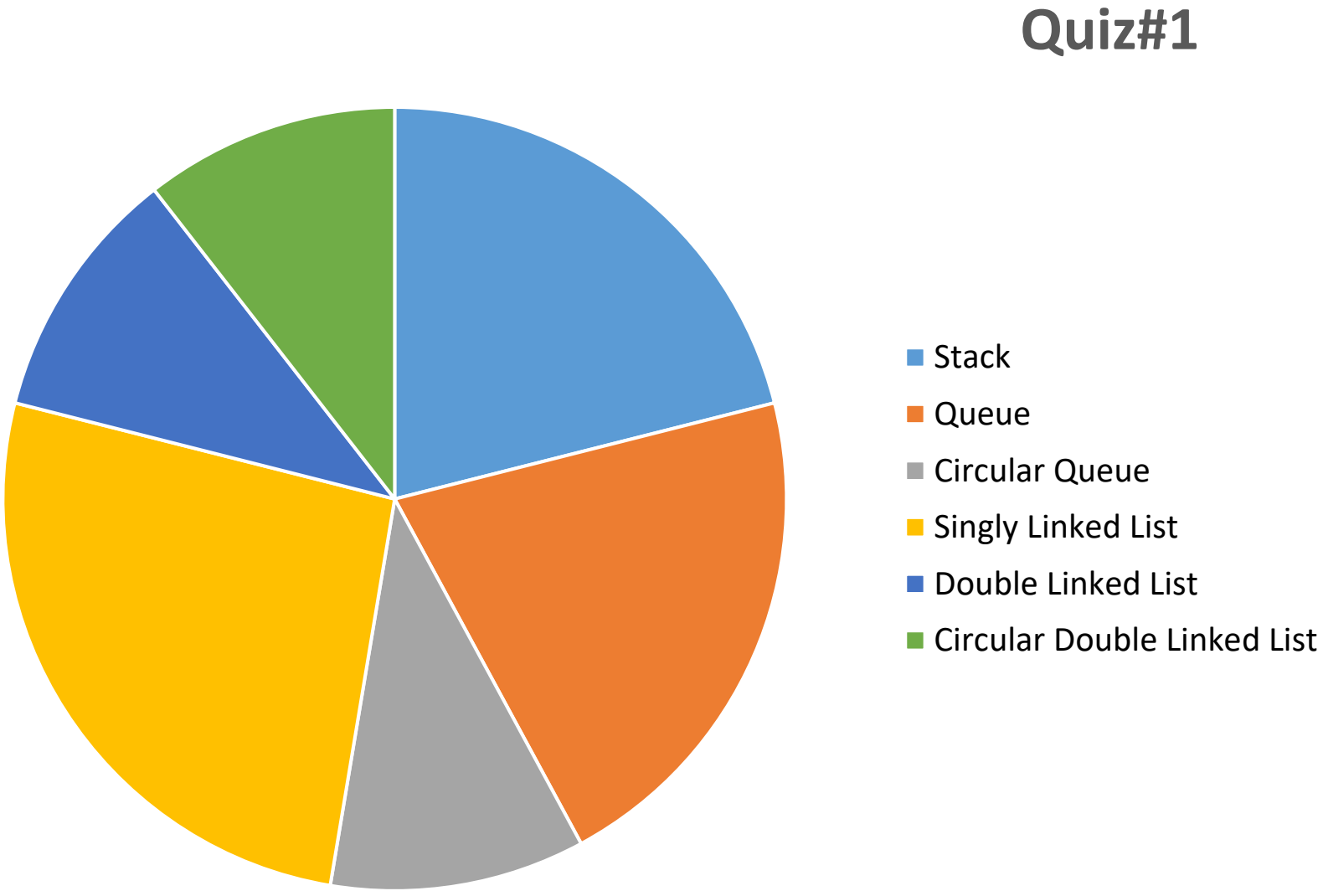


- Stack
- SpanningTree
- Sorting
- Singly Linked List
- Searching
- Queue
- Pointers
- Circular Queue
- AVLtree

Statistics (2)



Statistics (3)



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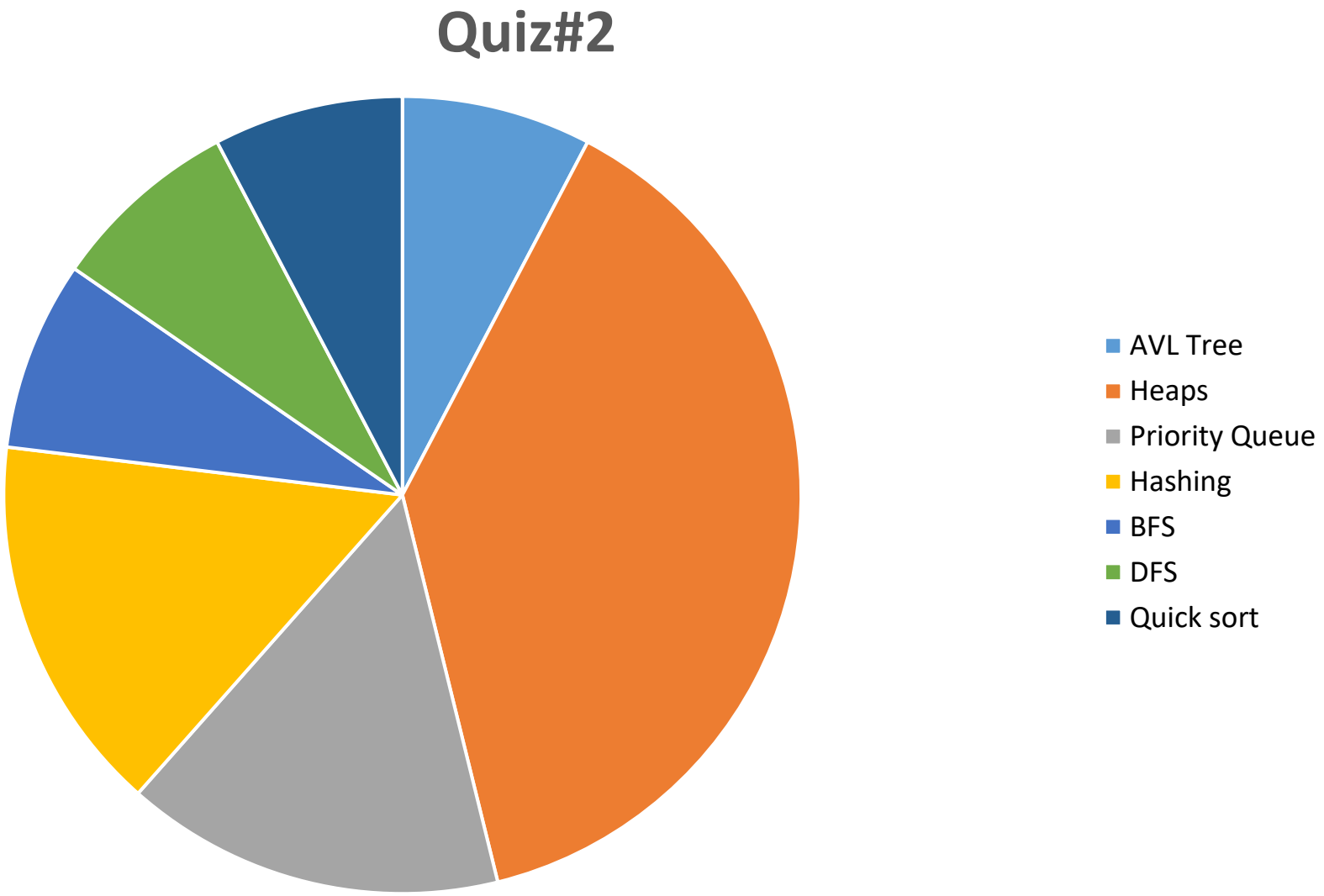
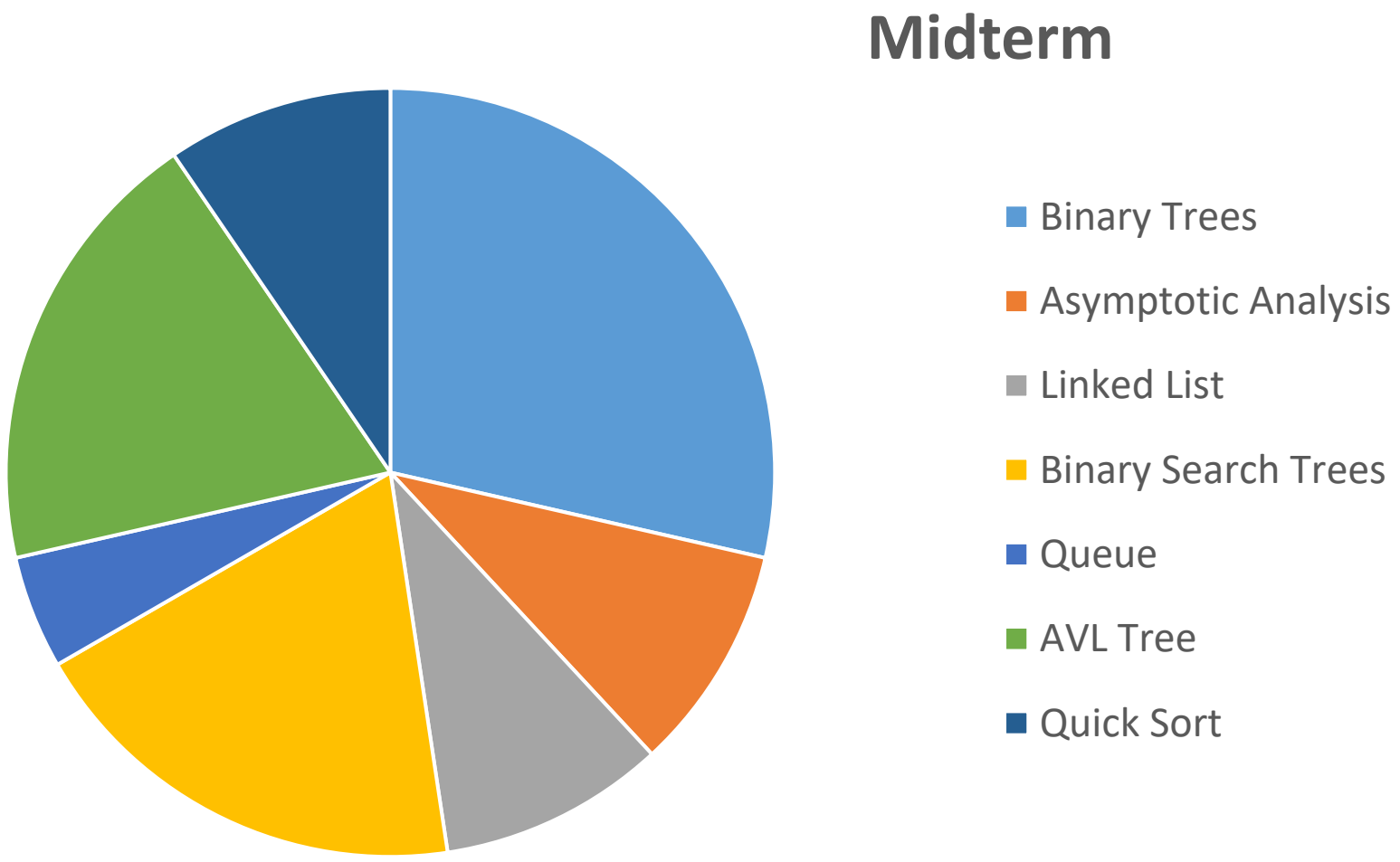
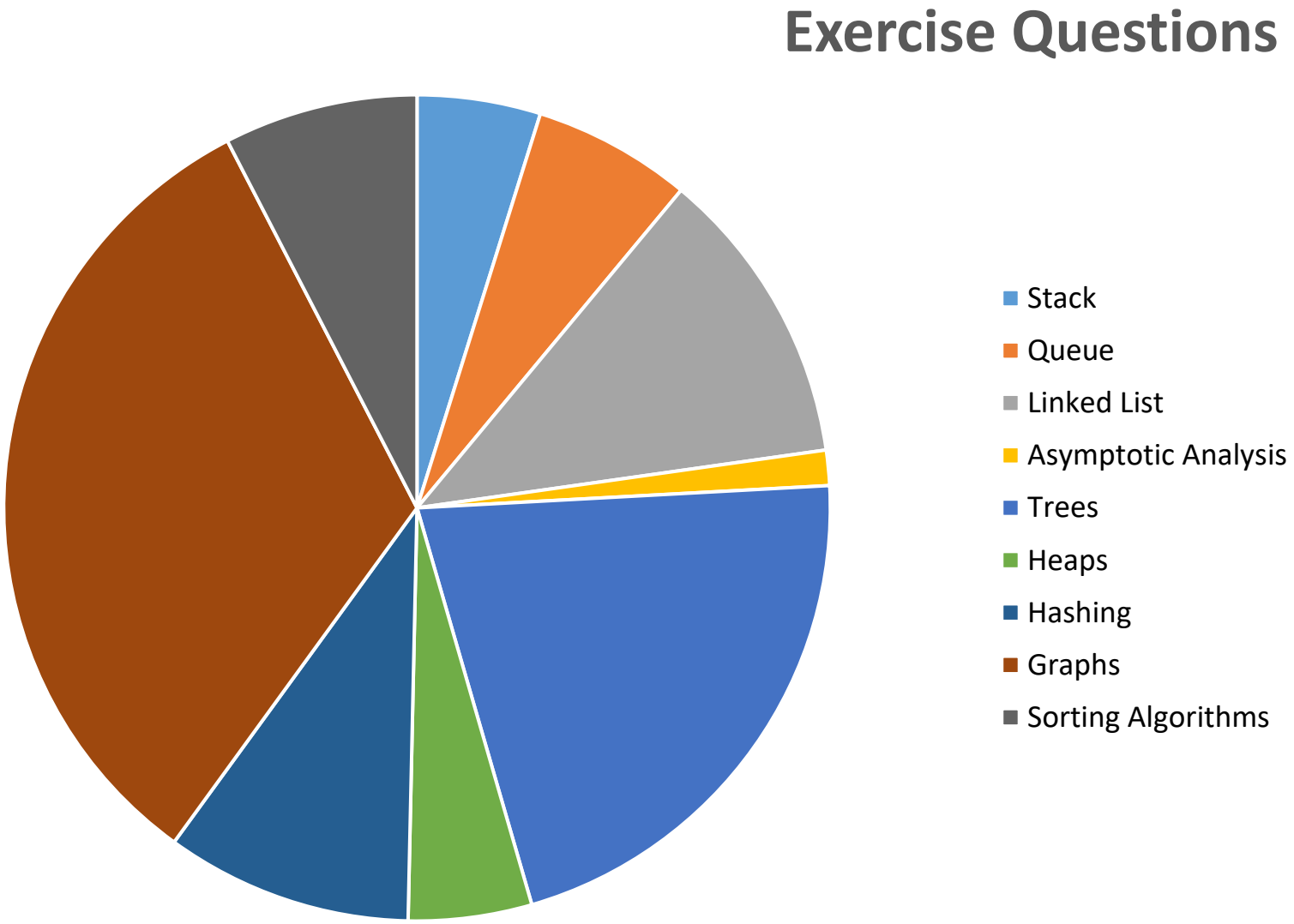


Statistics (5)

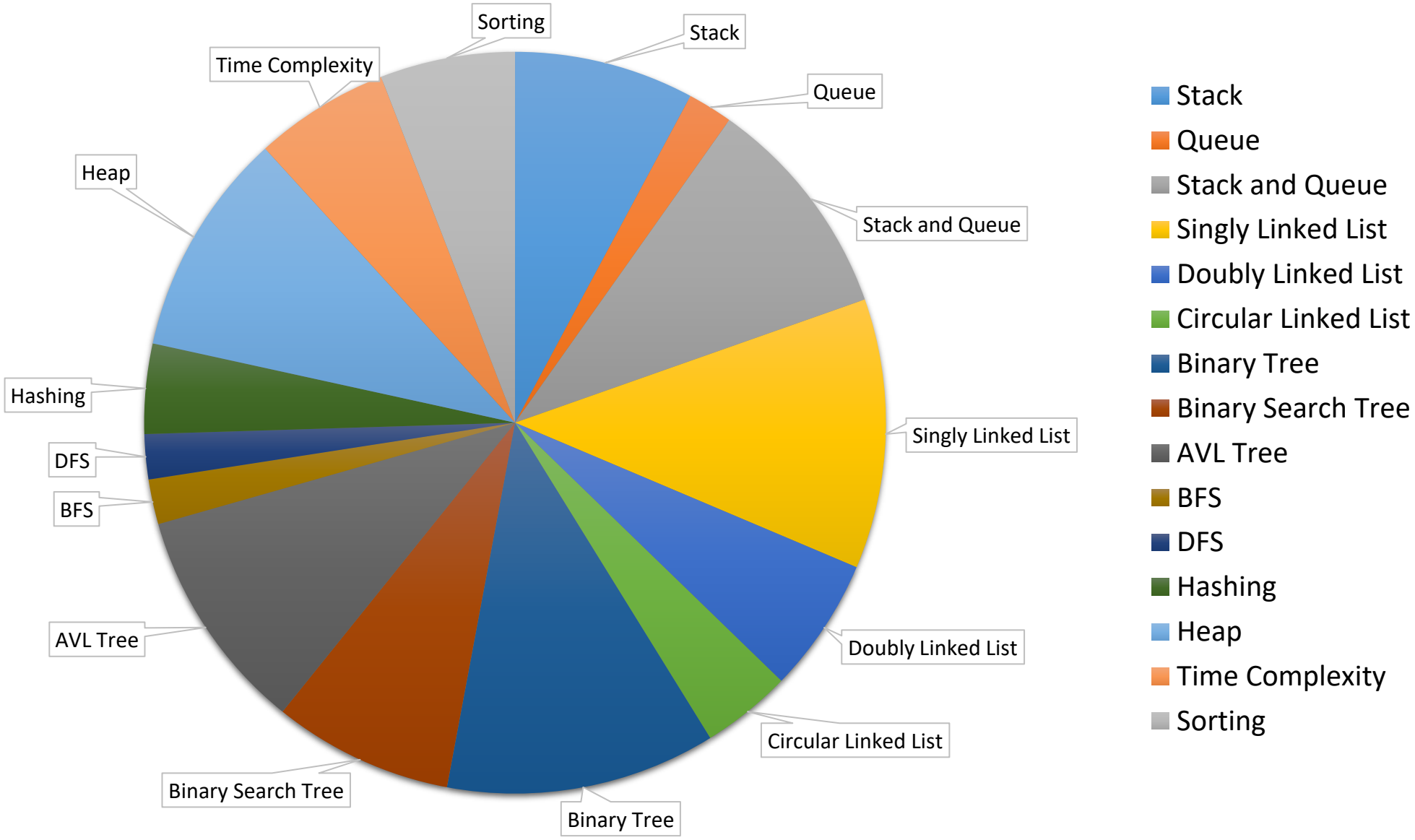


Statistics (6)



Statistics (7)

CS2x1 Quiz and Mid-Sem Questions



thank you!

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