Date: May 7th 11:30am-1:00pm

1-2 pages of cheat sheet is allowed!

Chapter 4 Stack and Queue

How does stack and queue work?

Chapter 6 Tree

basic tree terminologies

tree traversal algorithms

BST definition
How to perform search/insert/remove from BST

What is a heap data structure?
How to insert /remove an item into a heap?
How to implement a heap using an array data structure?

What is a priority queue (PQ) data structure?

Chapter 7 Hashing

How does hashing work?

Chapter 9 Balanced Tree

Why do we want to balance tree data structure?
What is a rotation? How to do a rotation on tree?

What is an AVL tree?
How to mark the balance of each node on an AVL tree? (slide 19)

Please go through **extra slides** that are provided on 2-3 tree and red-black tree, focusing on the following contents:

What is a 2-3 tree?
How to insert an item into 2-3 tree?

What is a Left-leaning red-black BST? Why do we need it?
How to convert a 2-3 tree into a LL red-black BST?

What is a B-tree? Which applications are the B-tree used for?

Chapter 10

Basic Graph terminology
Graph representation: Adjacency-matrix and adjacency list, comparing these two representations
Graph traversal: Breath first search and depth first search traversal algorithms