

# Today - Lecture 16 - CS163

1) Topic #11 Graphs & Heaps

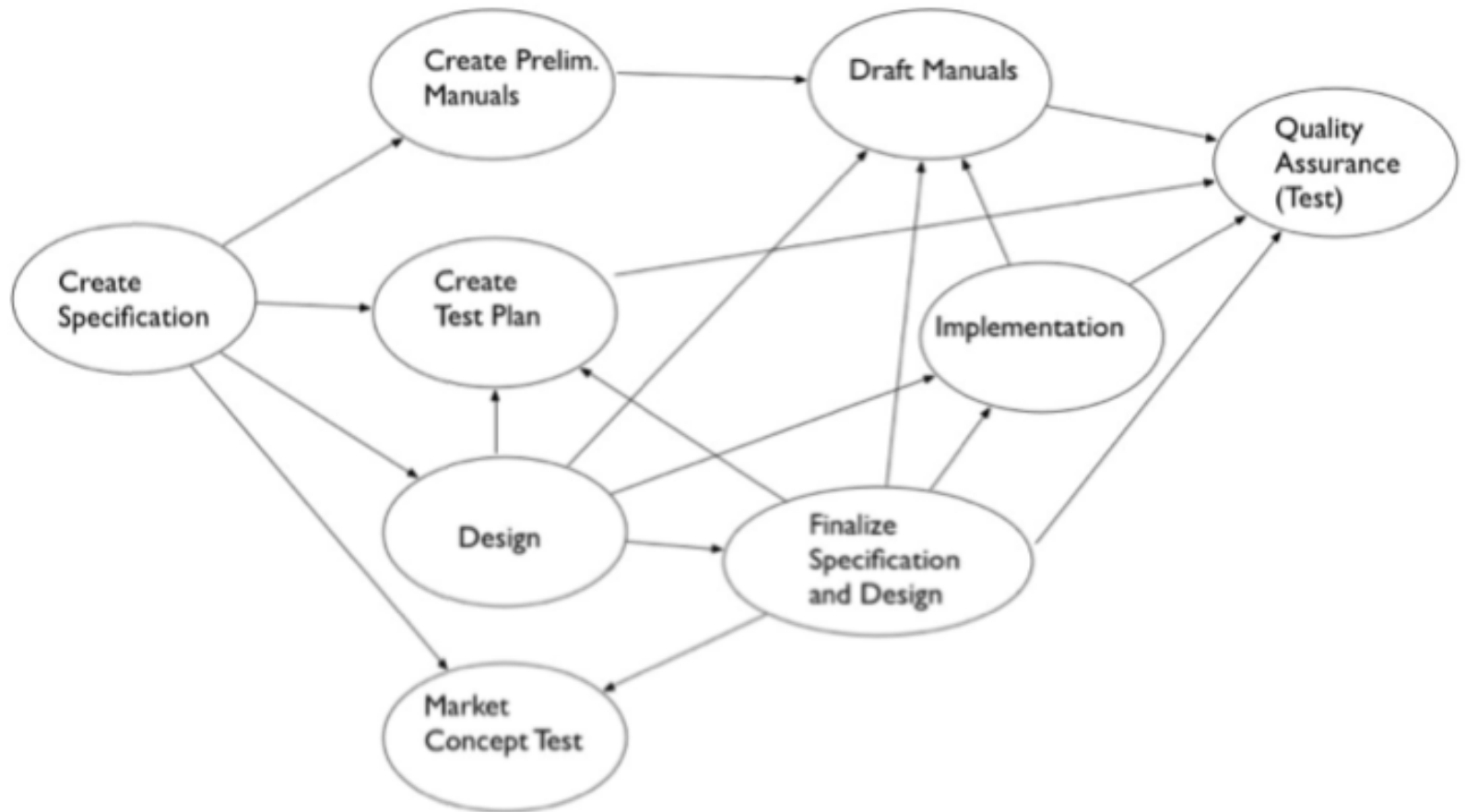
2) Discuss Deletion Algs

Next part:

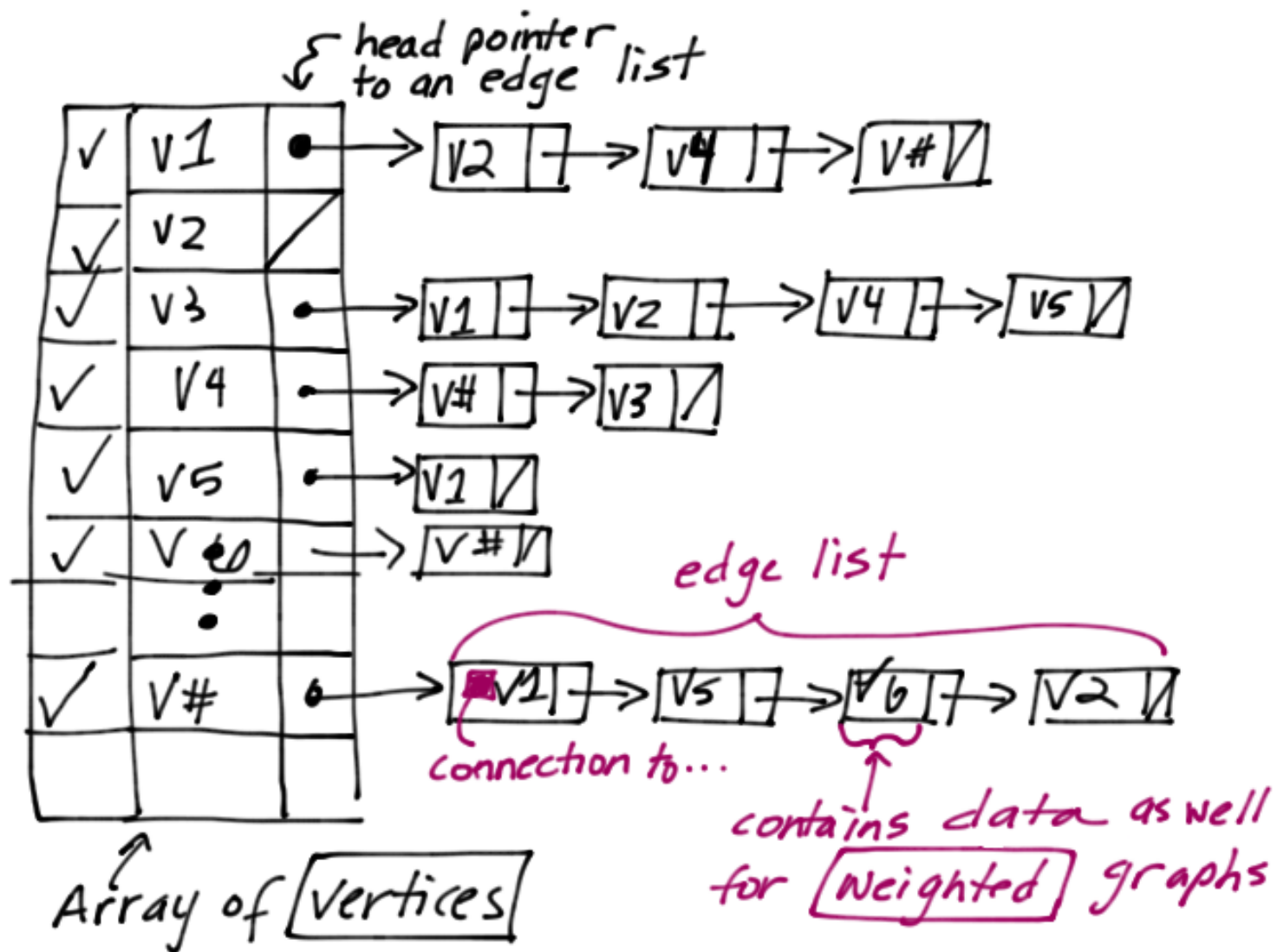
- Measuring Efficiency
- Sorting Algorithms

3) Examine what happens  
when we insert data  
that is already in order

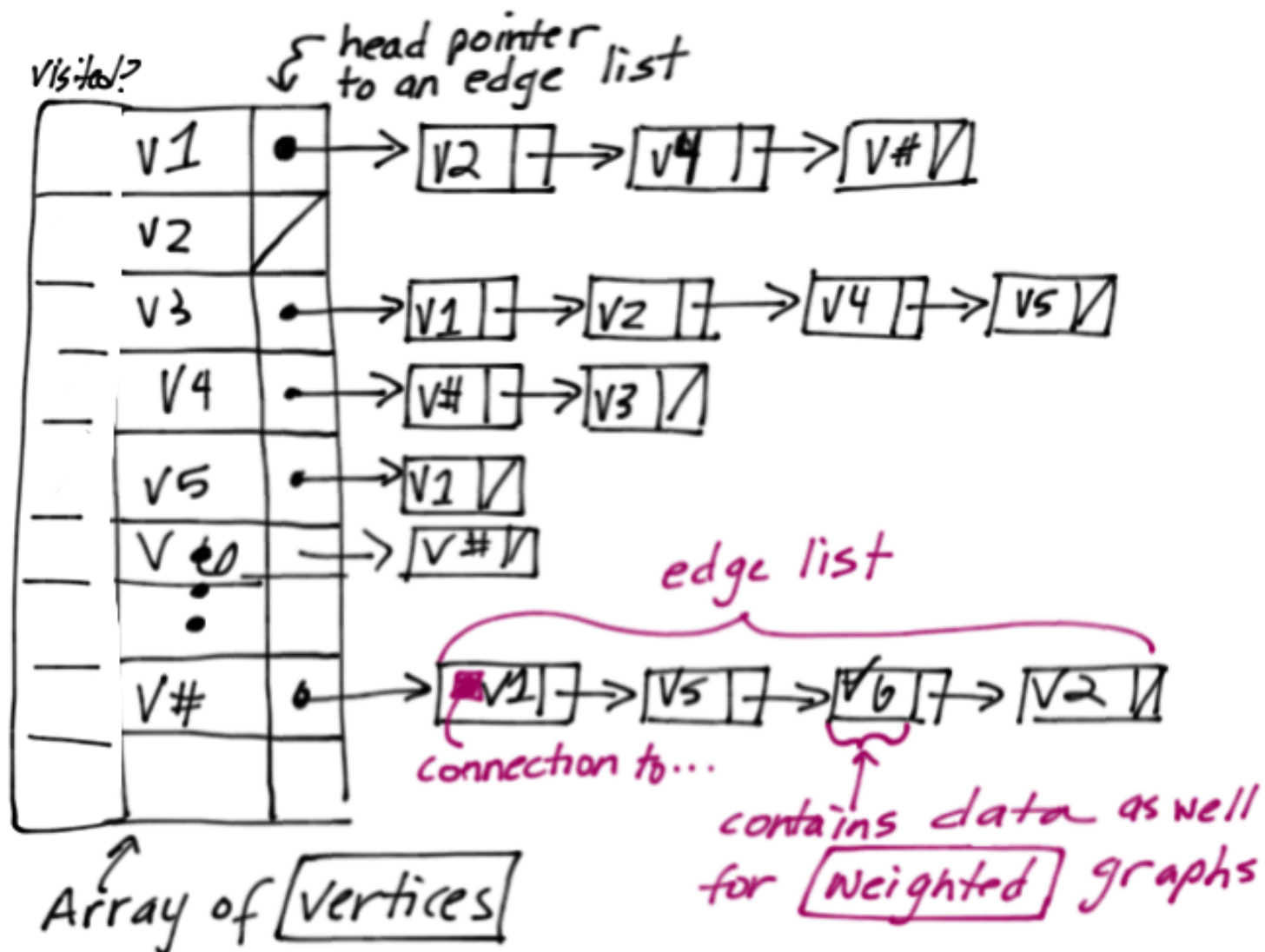
# Example use of Graphs



# Depth First:



# Breadth First!

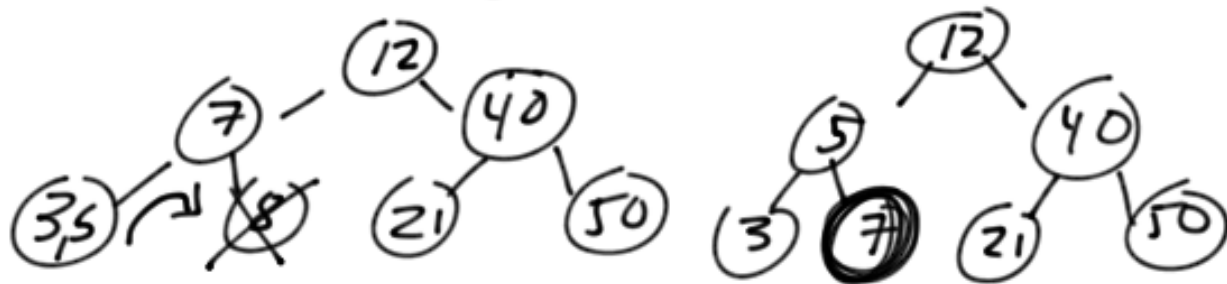


## 2-3 Tree Removal

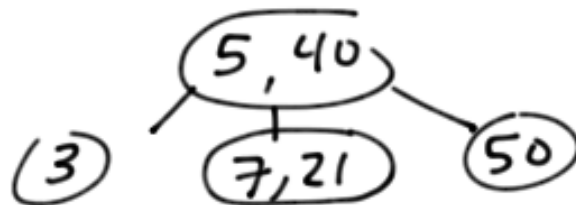


1) Causes No change in shape:  
8 or 12, 3 or 5

2) Remove (13) → "borrow" (12)



Remove (8)  
Remove (12)



# 2-3-4 Tree Removal

