**CS2Honors. Topics since Quiz#1**

Prim's Algorithm (Greedy)

Kruskal's Algorithm (Greedy)

Dijkstra's Algorithm (Greedy and Dynamic Programming)

Hamiltonian Path; Hamiltonian Cycle

Travelling Salesman Problem (minimum cost tour)

Decision vs Optimization Problems (achieving a goal vs achieving min cost)

Polynomial == Easy; Exponential == Hard

Polynomial reducibility

Satisfiability of Booolean expressions as a potentially hard decision problem

P, NP, NP-Hard, NP-Complete

P =? NP

Satisfiability as the first NP-Complete problem

SAT is polynomial reducible to (<=P) 3-SAT

SAT3 <=P SubsetSum

SubsetSum =P Partition

Network Flow

More DFS applications including data flow analysis

Recognizing cycles (loops) via DFS

Scheduling problems introduced

Partition and scheduling problems

Scheduling problems (fixed number of processors, minimize final finishing time)

Greedy heuristics

Scheduling anomalies, level strategy for UET trees, level strategy for UET dags

Bin packing (fixed capacity, minimize number of bins)

Huffman codes