Review QUIZ 1 of 2

Divide-and-Conquer (D&C)

(All questions are based on Lecture Notes. Go to the Lecture Notes and fully understand the topics!)

Q1. Describe a **recursive Binary Search** algorithm? Worst-case Recurrence Equation? Calculate Big-O?

[GO TO Lecture Note Slide #13, #15, #17, #19]

Q2. Describe a **Ternary Search** algorithm that **searches** a sorted array of n items **by dividing it into three sorted subarrays** of n/3 items. Worst-case Recurrence Equation? Calculate Big-O?

[GO TO Lecture Note Slide #20, #21]

Q3. Describe a **Merge Sort** algorithm? Worst-case Recurrence Equation? Calculate Big-O?

[GO TO Lecture Note Slide #24, #25, #30, #29, #32, #36]

Q4. Describe a **Three-way Merge Sort** algorithm that **sorts** a list of n items **by dividing it into three sublists** of about n/3 items, sorting each sublist recursively and merging the three sorted sublists. Worst-case Recurrence Equation? Calculate Big-O?

[GO TO Lecture Note Slide #37, #38]

Review QUIZ 2 of 2

Divide-and-Conquer (D&C)

(All questions are based on Lecture Notes. Go to the Lecture Notes and fully understand the topics!)

Q5. Describe a **Quick Sort** algorithm? **Worst-case** Recurrence Equation? Calculate Big-O?
[GO TO Lecture Note Slide #47, #48, #56, #57, #64]

Q6. Best-case Recurrence Equation of a **Quick Sort** algorithm? Calculate Big-O?
[GO TO Lecture Note Slide #58, #59, #60, #65]

Q7. Average-case Recurrence Equation of a **Quick Sort** algorithm? Calculate Big-O?

[GO TO Lecture Note Slide #61, #62, #65]

Q8. When Not to use D&C? **Why not**? An example problem when D&C is not efficient?

[GO TO Lecture Note Slide #91, #92]