Group 3

Graded

Group

kambeh liban karshe
Collins Munene Kariuki
Blessing Adomakoh
...and 3 more
View or edit group

Total Points

1 / 1 pts

Question 1

Attended and participated **1** / 1 pt

✔ **– 0 pts** Correct

No questions assigned to the following page.

CS140 - Group Assignment 3

Due: Friday, Feb. 9 at 10pm

Note: you only need to submit one assignment *per group*.

1. Induction on trees

   Use a proof by strong induction to show that a binary tree of height h has at most 2^h leaf nodes.

2. Recreating binary search trees

   (a) Suppose that we have numbers between 1 and 1000 in a binary search tree, and we want to search for the number 363. Which (and there might be more than one) of the following sequences could *not* be the sequence of nodes examined?

   i. 2, 252, 401, 398, 330, 344, 397, 363
   ii. 924, 220, 911, 244, 898, 258, 362, 363
   iii. 925, 202, 911, 240, 912, 245, 363
   iv. 2, 399, 387, 219, 266, 382, 381, 278, 363
   v. 935, 278, 347, 621, 299, 392, 358, 363

   (b) Given any sequence of numbers and any number for which you're searching, how could you determine whether the sequence could be the sequence of nodes examined?

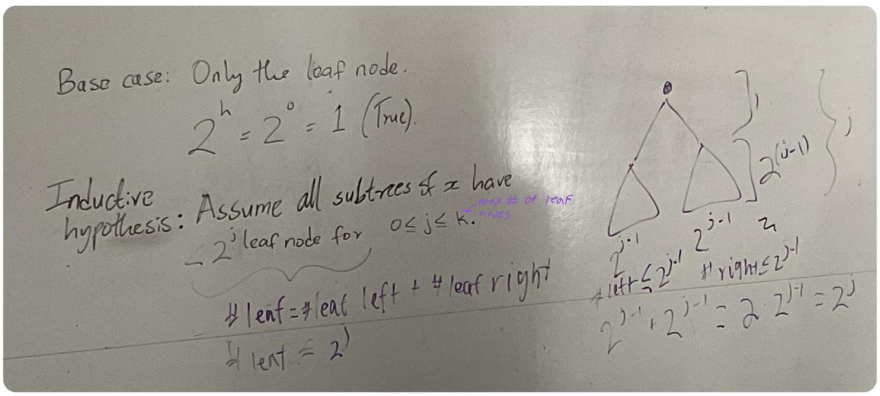
3. Group experience

   What was each person's favorite class in high school? Least favorite? (Don't forget your TA!)

No questions assigned to the following page.

1. Induction on trees

   Use a proof by strong induction to show that a binary tree of height h has at most 2^h leaf nodes.



2. Recreating binary search trees

   (a) Suppose that we have numbers between 1 and 1000 in a binary search tree, and we want to search for the number 363. Which (and there might be more than one) of the following sequences could *not* be the sequence of nodes examined?

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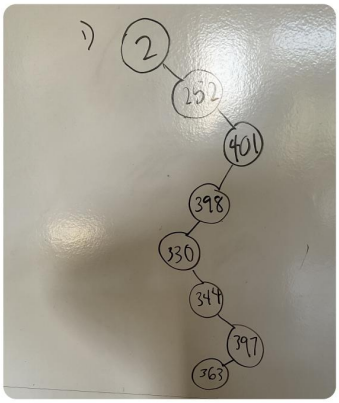

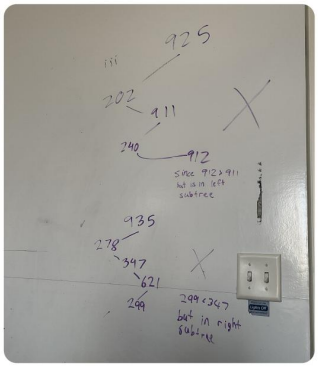

   (b) Given any sequence of numbers and any number for which you're searching, how could you determine whether the sequence could be the sequence of nodes examined?

Group experience

when we go left the number preceding the new number on the left side is the new-max

when we go right the number preceding the new number on the right side is the new-min

No questions assigned to the following page.

3. Group experience

   What was each person's favorite class in high school? Least favorite? (Don't forget your TA!)

Rediet: Fav: IB History least Fav: Bio

Sophia: Favorite: math least fav: Chem

Collin: Fav: physics least fav: bio

niel: Fav: gov least fav: Chem

Blessing: Fav: IB psychology HL, least fav: AP Euro

Kambe: Fav: Art, least Fav: English