X-Sender: hector@db.stanford.edu
Date: Tue, 01 Apr 2003 11:28:52 -0800
To: Diane Shankle <shankle@ee.Stanford.EDU>
From: Hector Garcia-Molina <hector@cs.stanford.edu>
Subject: Re: Quals Question 2003

At 09:15 AM 4/1/2003 -0800, you wrote:
> Still waiting for all the Quals Questions to be turned in.!

I may have already sent my question in, but just in case,
here it is again...

hector

Hector Garcia-Molina
EE Quals Question 2003
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(1) Define briefly what a binary search tree is.

(2) Write a procedure for searching a binary tree.
There is a global variable T that points to the root of the tree.
(If the tree is empty, T is null.)
The procedure takes as a parameter the value to search for,
and returns a pointer. If the value was found in the tree, the
returned pointer identifies the node holding the value.
If not, the returned pointer is null.

(3) Write a procedure for inserting a new value into the same tree.
The input parameter is the value to be inserted.
No value is returned.
Duplicates are allowed in the tree, so a new node is created
even if the value is already in the tree.

(4) If there are N nodes in the tree,
What is the worst-case number of nodes that must be inspected
in a search? What is the average case?