Homework 9: Searching Ordered Data and Search Trees

Data Structures

Write pseudo-code not Java for problems requiring code. You are responsible for the appropriate level of detail.

For questions 1 – 2, compare the efficiency of using sequential search on an ordered table of size n and an unordered table of the same size for the key *target*:

1. a) If no record with the key *target* is present.

b) If one record with the key *target* is present and only one is sought.

1. a) If more than one record with the key *target* is present and it is desired to find only the first one.

b) If more than one record with the key *target* is present and it is desired to find them all.

1. Write a method delete(key1, key2) to delete all records with keys between key1 and key2 (inclusive) from a binary search tree whose nodes look like this:

|  |  |  |
| --- | --- | --- |
| Left | **key*i*** | **right** |

1. Write a method to delete a record from a B-tree of order n.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| p0 | **r1** | **p1** | **r2** | **p2** | **r3** | **…….** | **pn-1** | **rn** | **pn** |