

ESO207: Assignment 4

Due on 5 October,2015

Note With pseudo-code give sufficient explanation so one can understand easily. Also give the proof of correctness (show that it indeed computes the desired result) and provide the time complexity analysis (not just the time complexity).

Q1. We wish to add a pointer to each non-nil node of a Red-Black tree which points to the node carrying the next element in order (element with the next higher key). The pointer from the maximum element will be null.

(i) Describe the Insert operation by writing the pseudocode so that this pointer is correctly updated/maintained. Give complete details of the modified Insert operation. Also analyse the time complexity of the operation.

(ii) Give the similar solution, as in (i), for Delete operation.