

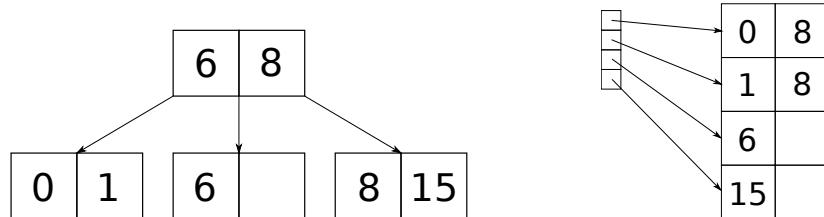
CSE 4/562 — Spring 2018 — Homework 2

Due: Thursday Mar 8, 11:59 PM

Consider the following two data structures that we discussed in class.

- **B+Tree:** With directory pages that hold 2 keys (and 3 pointers) and data pages that hold 2 records, as well as the standard requirement that pages be at least half-full.
- **Dynamic Hash Index:** With a fully in-memory directory table, and data pages that hold 2 records. If a leaf page becomes empty, it is merged with its counterpart. Use the identity hash function ($h(x) = x$).

We have instances of each index structure storing values 0, 1, 6, 8, 15 as follows:



As usual, state all assumptions that you make in answering these questions.

1 Index Insertion

Draw the state of each index structure after inserting: 7, 9, 3, 12

2 Index Deletion

Draw the state of each data structure after the previous insertions and subsequently deleting records 6 and 7.