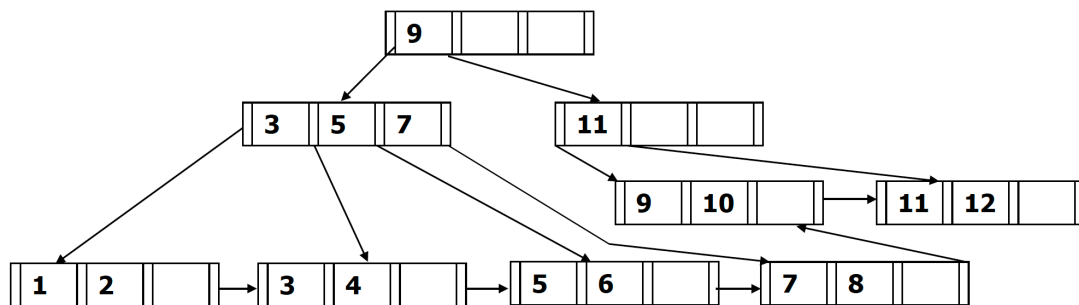**Problem 1. (B+ Tree Construction and Insertion)**

Suppose each B+ tree node can hold up to 4 pointers, construct a B+-tree for the following set of key values by inserting them **sequentially**:

$$(1, 3, 5, 7, 9, 2, 4, 6, 8, 10)$$

Problem 2. (B+ Tree Deletion)

Show the form of the B+ tree after each of the following deletions:

a)   Delete 9

b)   Delete 7

c)   Delete 8

Problem 3. (Extendible Hashing)

Set the bucket size to be 3 and the hash function returns X LSBs(Least Significant Bits), where X is the global depth.

Show the process of hashing the following elements: 16, 4, 6, 22, 24, 10, 31, 7, 9, 20, 26.

You can refer to the following figure which shows the initial hashing frame.