Database Development and Design (CPT201)

Tutorial 2

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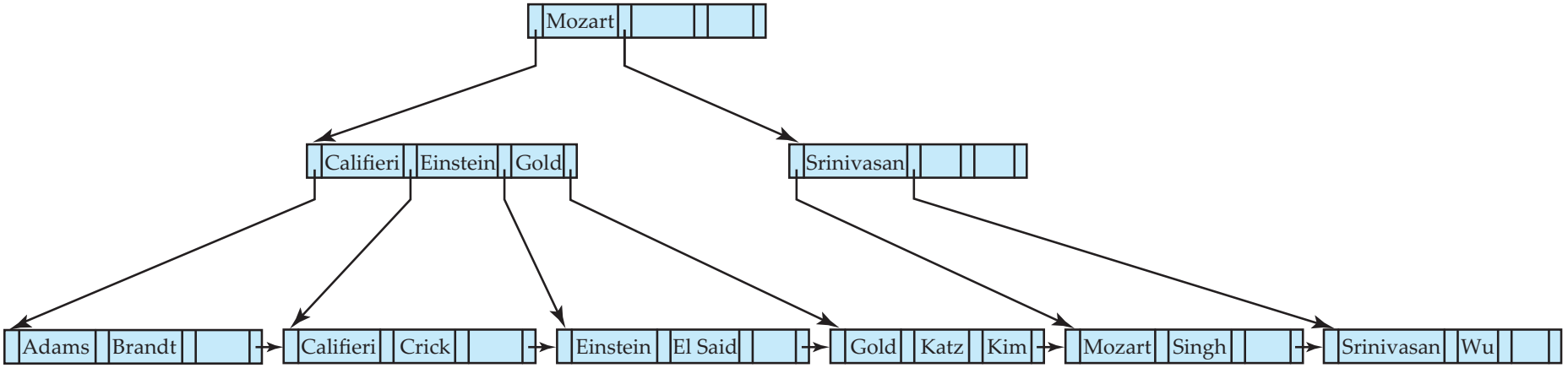
Q1



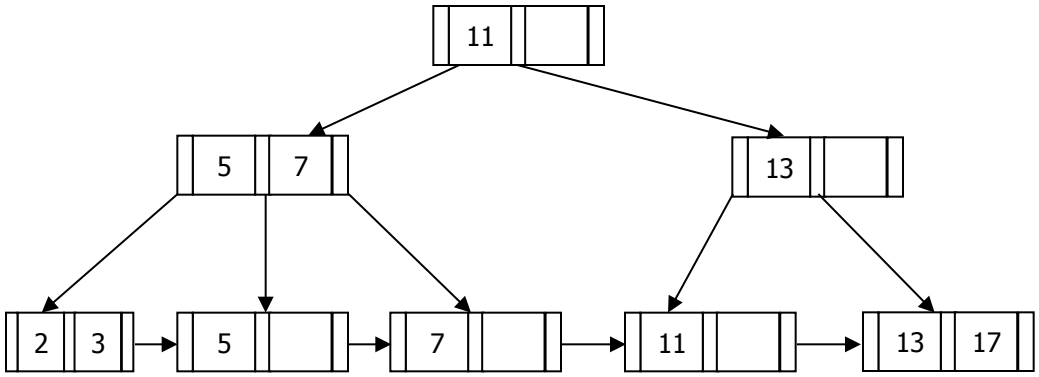
Question:

What will happen after insertion of “Lamport”?

Q2

- Construct a B+ tree for the following set of key values for n=3.
  - (2, 3, 5, 7, 11, 13, 17)

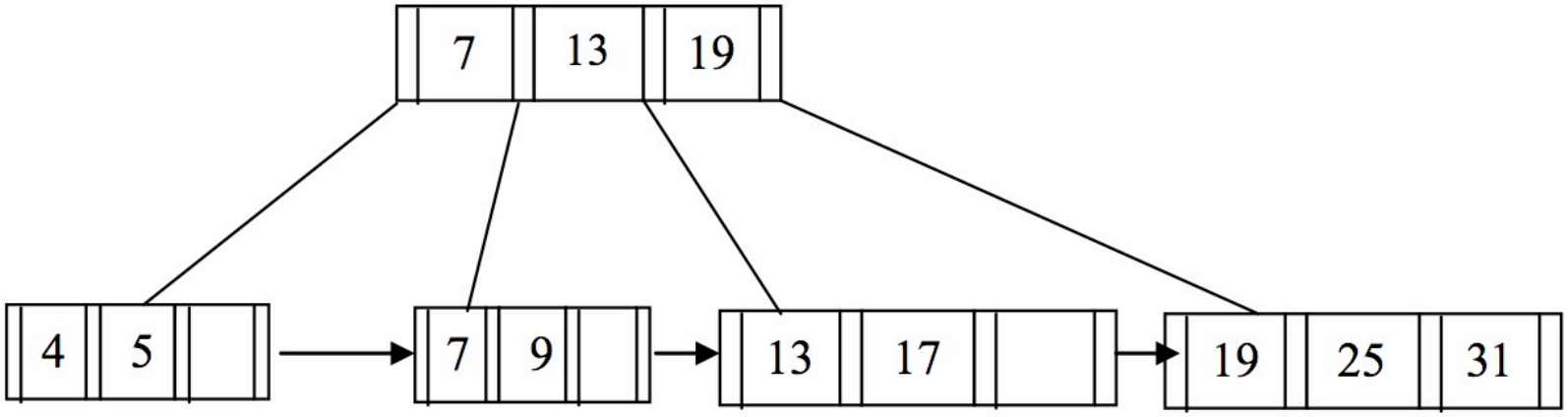
Q3



- Initial tree shown above
- (1). Delete 5, then delete 11 from the above figure, what does the tree look like?
- (2). With the initial tree, delete 11 from the above figure, what does the tree look like?

Q4

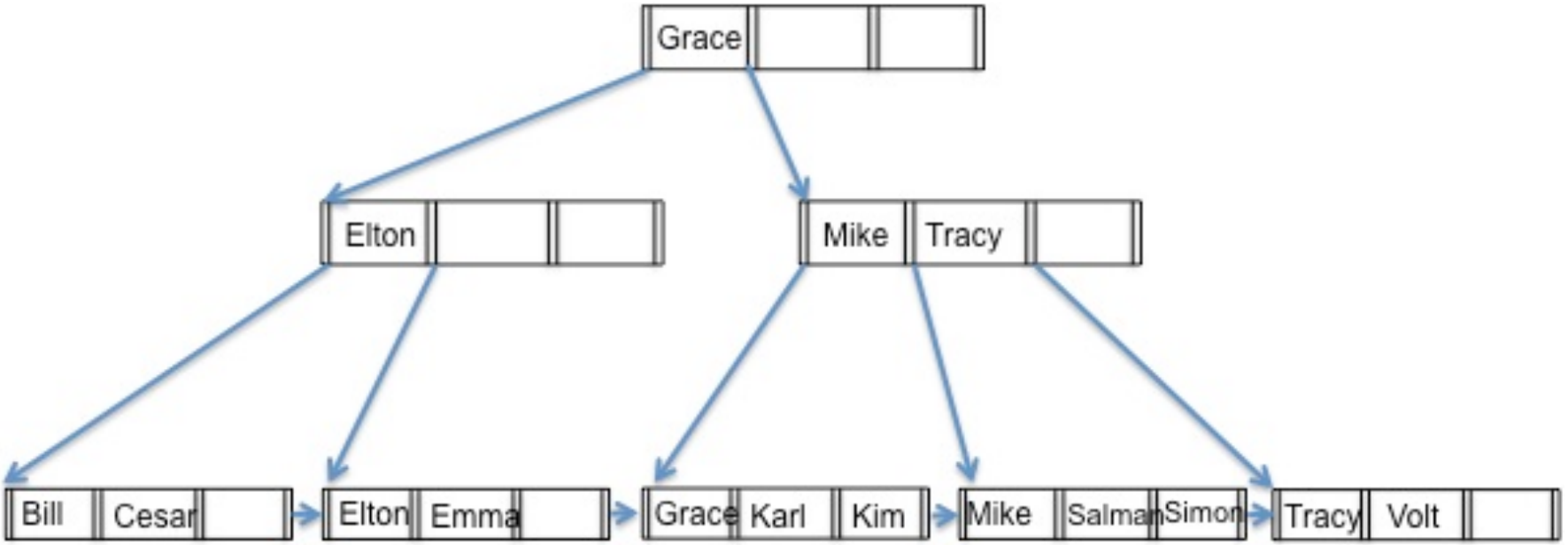
- Consider the following B+ tree. The number of pointers that fits in one node is 4.
- Draw the trees after each of the following update operations is performed (Subsequent operations are performed based on the previous ones).
  - 1. Insert 33
  - 2. Insert 11
  - 3. Delete 25



Q5

- Consider the B+ tree with *N=4* (the number of pointers can be stored in one node) below, which is created on names of some people.
  - 1. Briefly describe how to locate the record with the search key value of "Simon".
  - 2. Draw the B+ tree after inserting a search key "Grace".
  - 3. Draw the B+ tree after deleting a search key "Messi".
  - 4. Draw the B+ tree after inserting a search key "Yan".
  - 5. Based on the previous result, draw the B+ tree after inserting a search key "Sophie".
  - 6. Based on the previous result, draw the B+ tree after deleting search key "Bill".

Q5 cont'd


Grace
Elton
Mike
Tracy
Bill
Cesar
Elton
Emma
Grace
Karl
Kim
Mike
Salman
Simon
Tracy
Volt