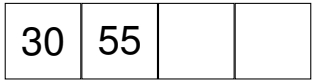
Programming Assignment: B+-Tree

- Implement a B+-Tree
- B+-Tree should work on fixed-size key types and a comparator
- Use the buffer manager to access pages
- B+-Tree must be thread-safe (see slides “Concurrent Access”)
- Determine suitable value for k (different for leaf and inner nodes!)
- Supported operations: point lookup, range lookup

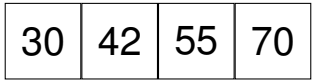
B+-Tree Insertion (no concurrency)

Insert 42 and 70:



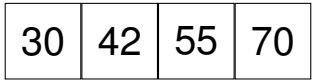
B+-Tree Insertion (no concurrency)

Insert 42 and 70:



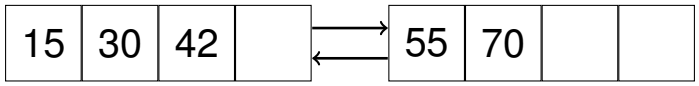
B+-Tree Insertion (no concurrency)

Insert 15:



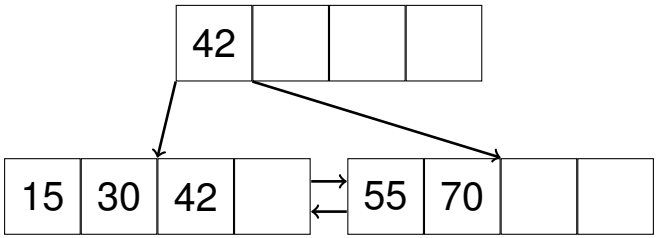
B+-Tree Insertion (no concurrency)

Insert 15:



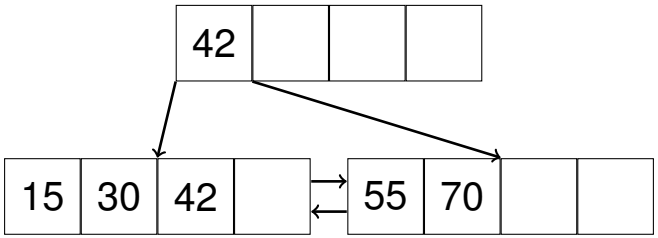
B+-Tree Insertion (no concurrency)

Insert 15:



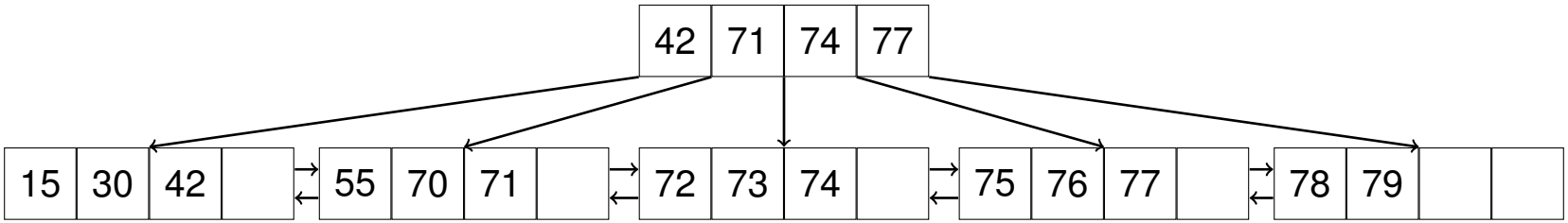
B+-Tree Insertion (no concurrency)

Insert 71-79:



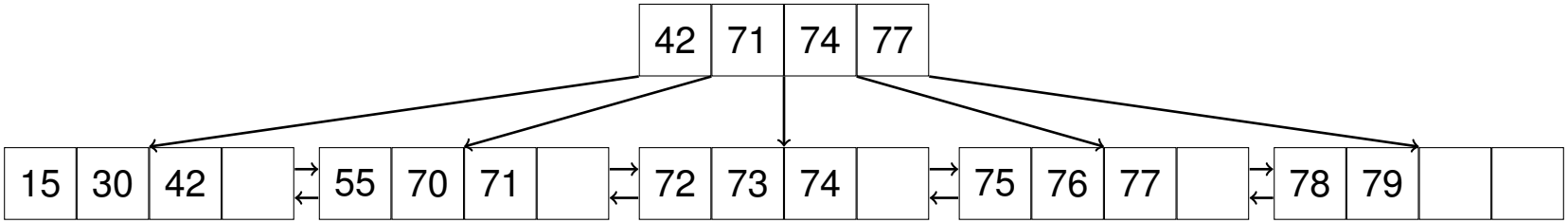
B+-Tree Insertion (no concurrency)

Insert 71-79:



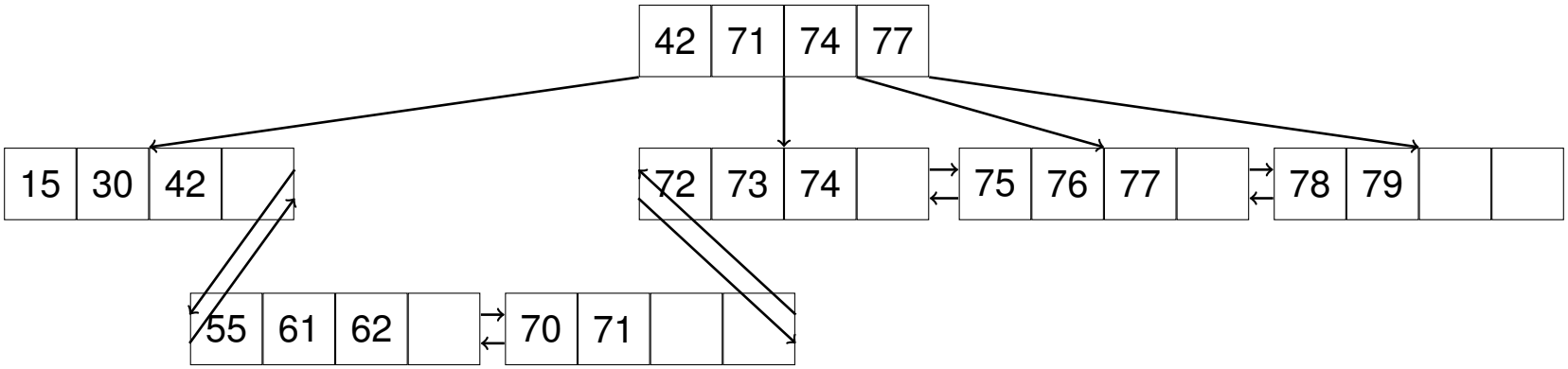
B+-Tree Insertion (no concurrency)

Insert 61, 62:



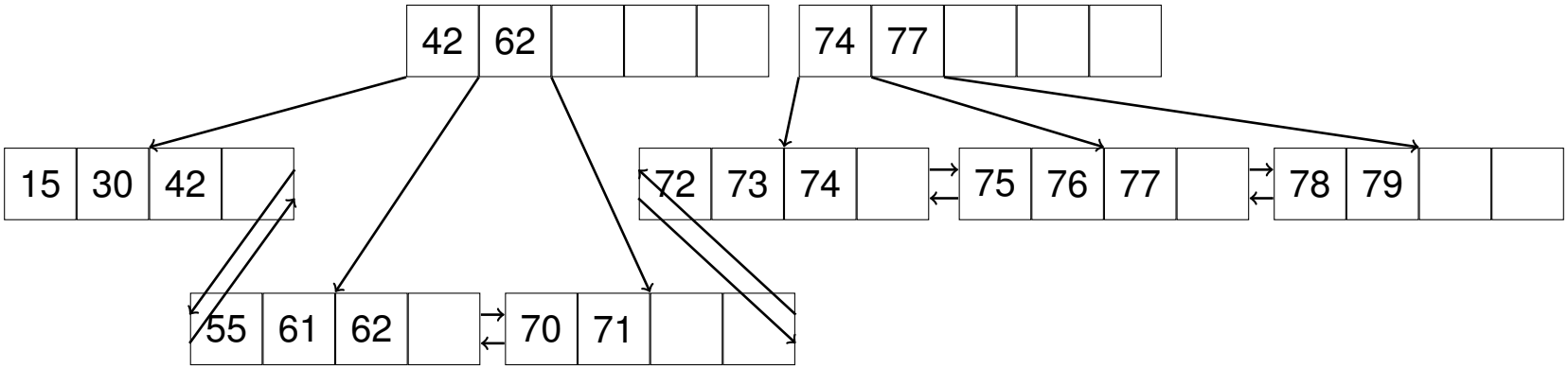
B+-Tree Insertion (no concurrency)

Insert 61, 62:

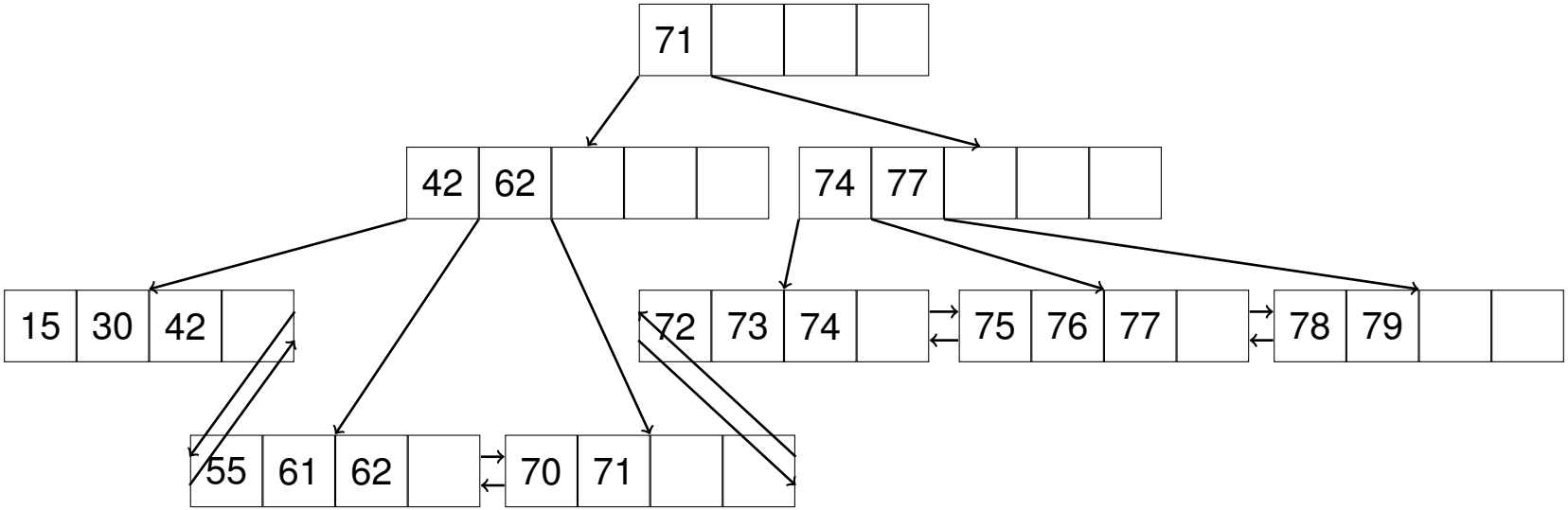


B+-Tree Insertion (no concurrency)

Insert 61, 62:

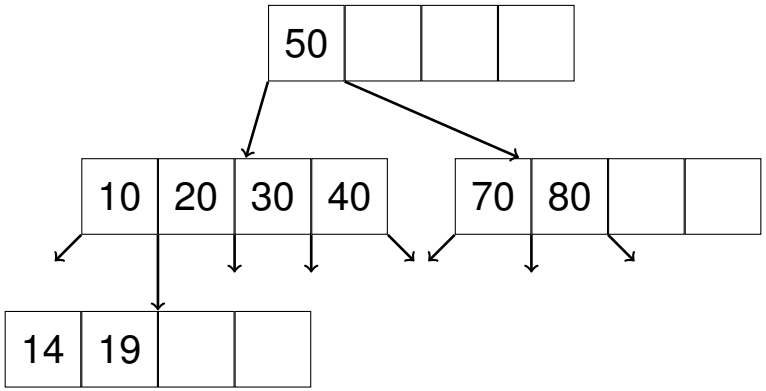


B+-Tree Insertion (no concurrency)



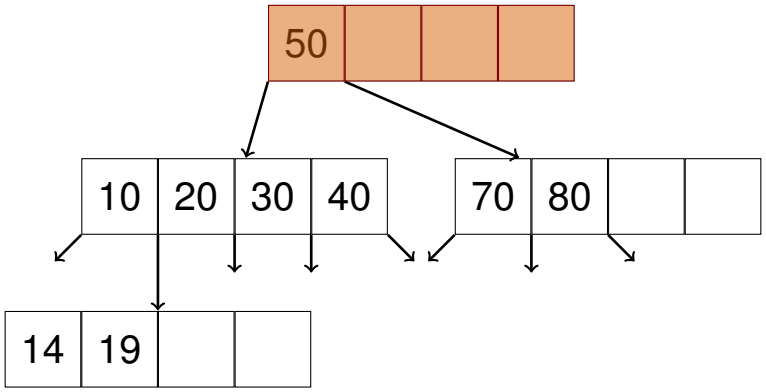
Concurrent B+-Tree Insertion

Insert 16:



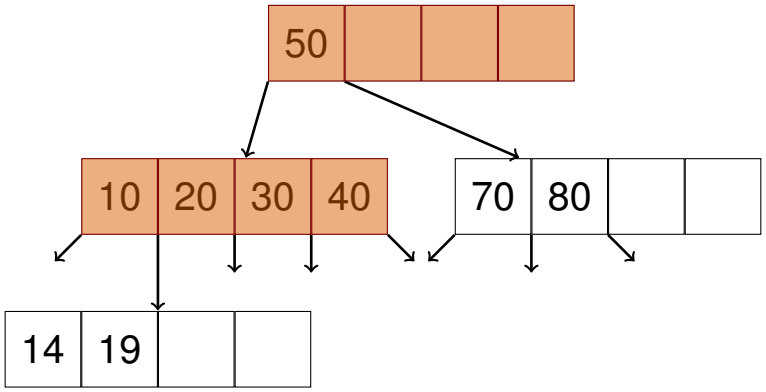
Concurrent B+-Tree Insertion

Insert 16:



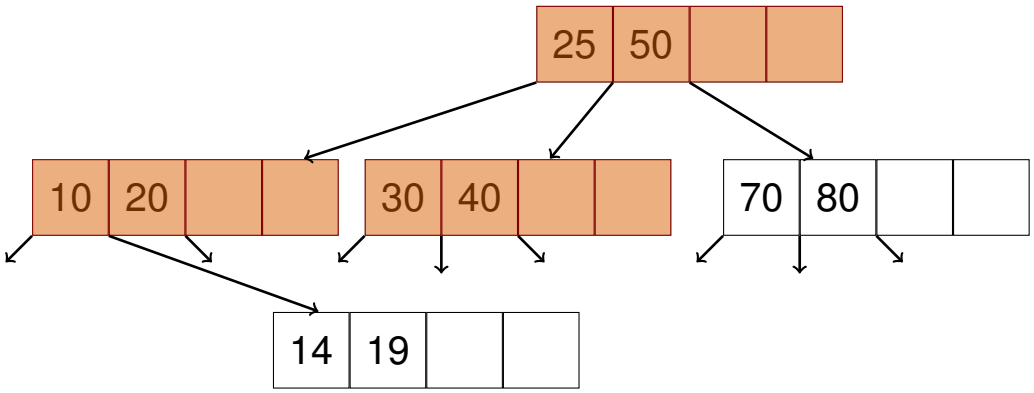
Concurrent B+-Tree Insertion

Insert 16:

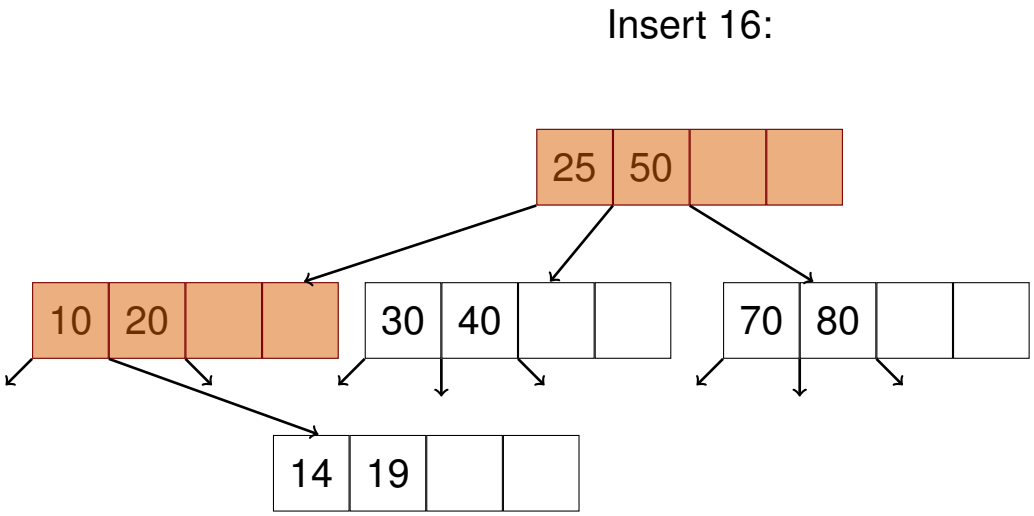


Concurrent B+-Tree Insertion

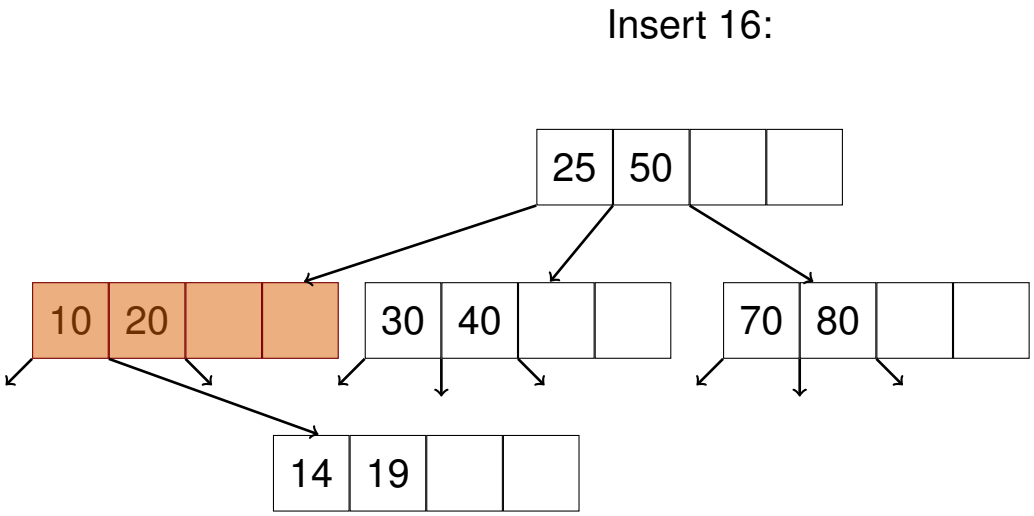
Insert 16:



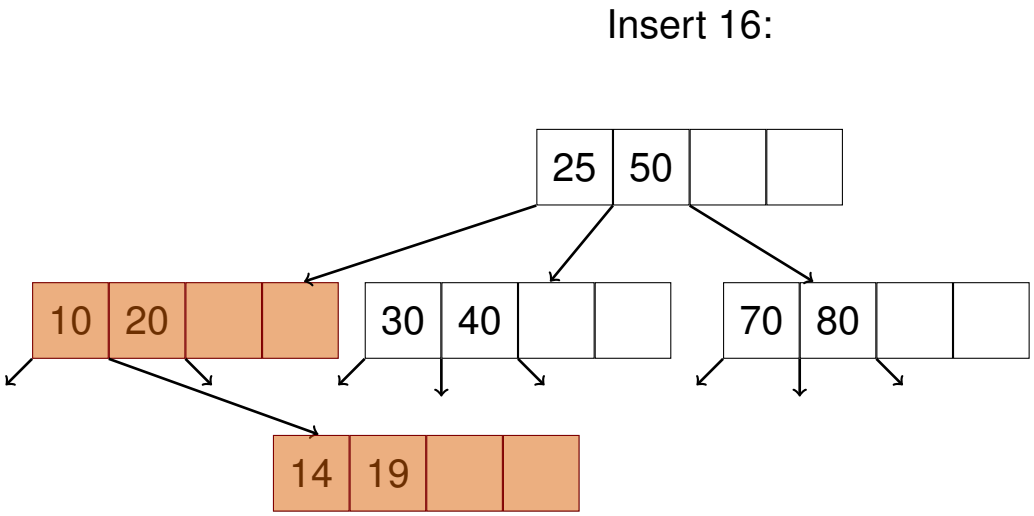
Concurrent B+-Tree Insertion



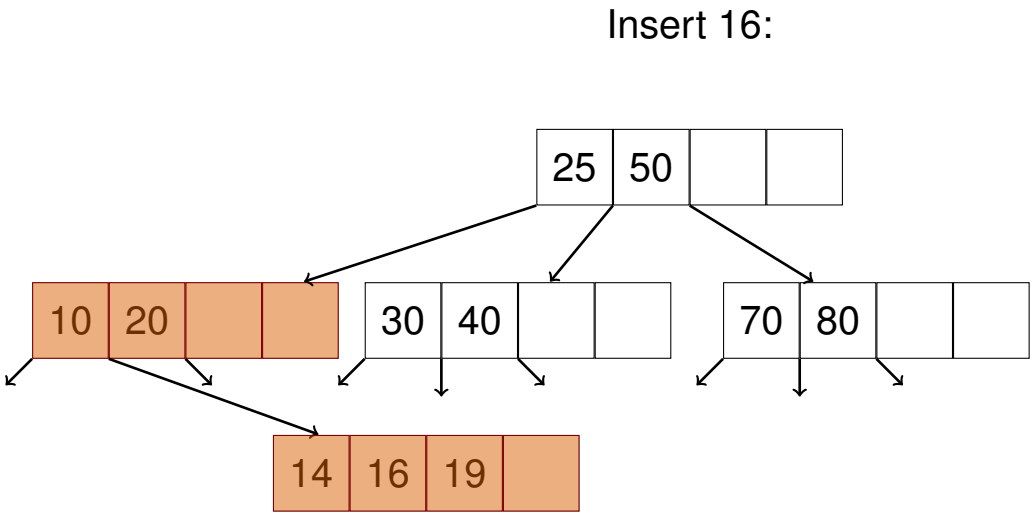
Concurrent B+-Tree Insertion



Concurrent B+-Tree Insertion



Concurrent B+-Tree Insertion



Concurrent B+-Tree Insertion

Insert 16: