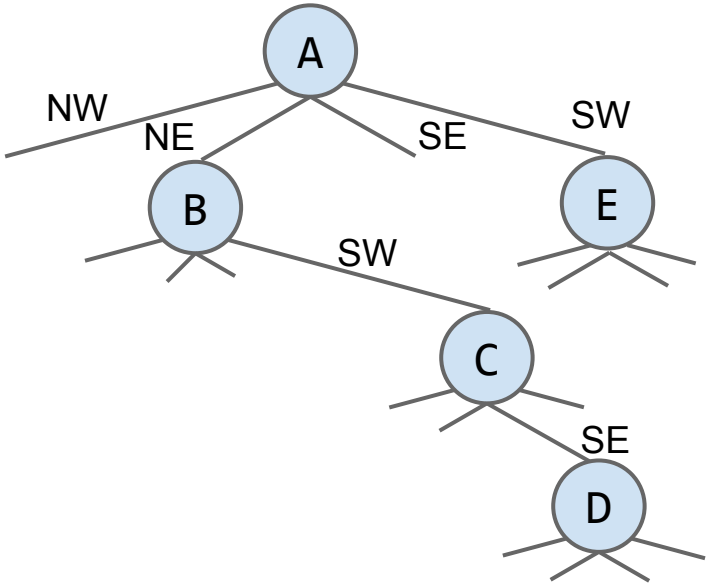
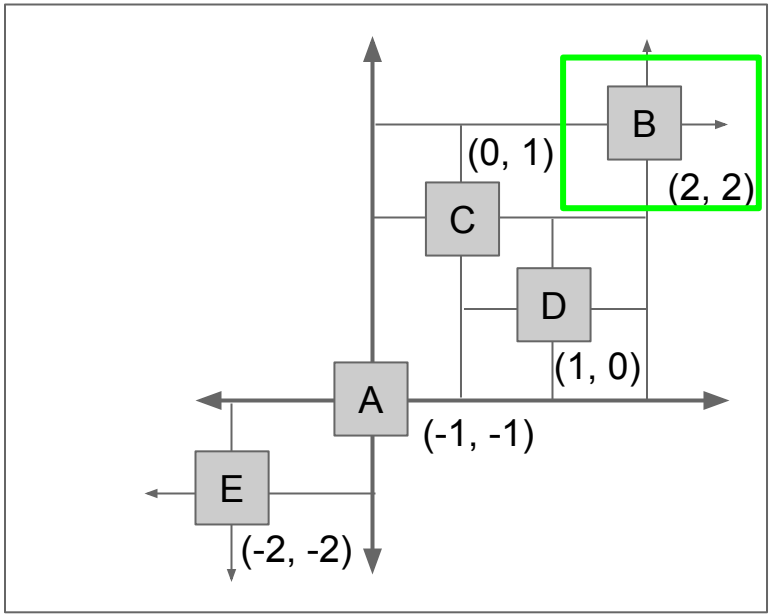
QuadTree Range Search Demo



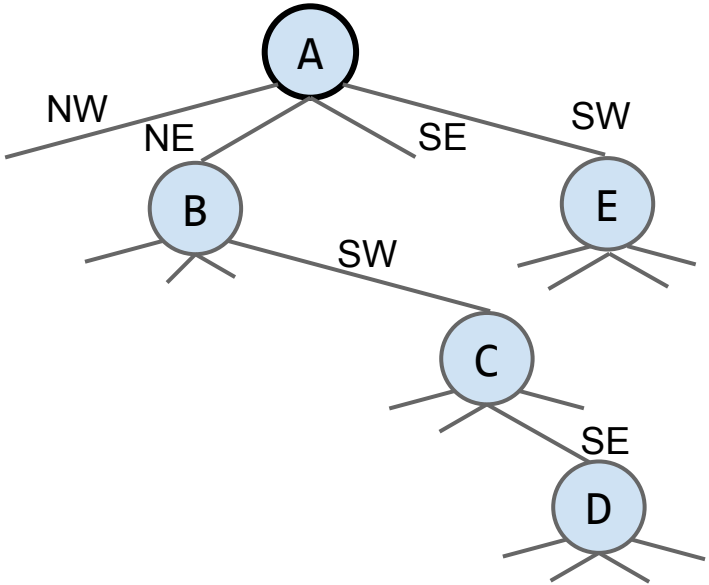


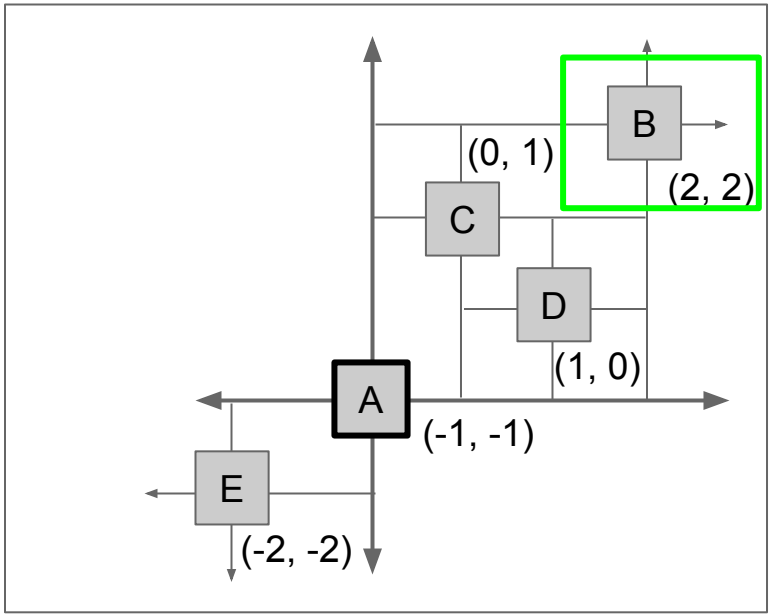
Goal: Find points in green rectangle.

results = []

QuadTree Range Search Demo

Start at root.





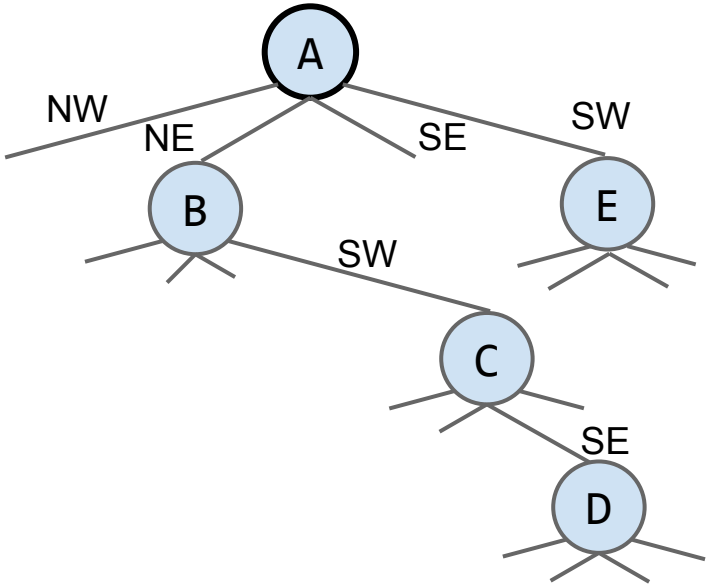
Goal: Find points in green rectangle.

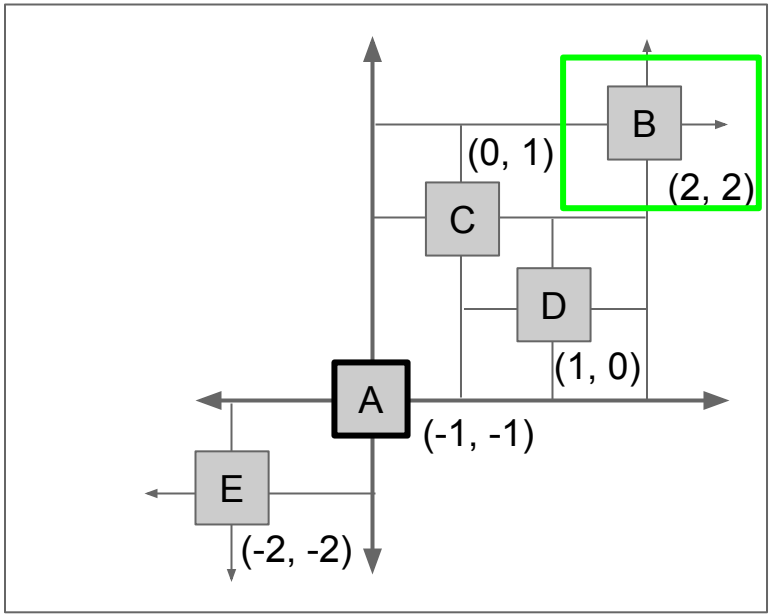
results = []

QuadTree Range Search Demo

Start at root.

- Is A in the box? No.





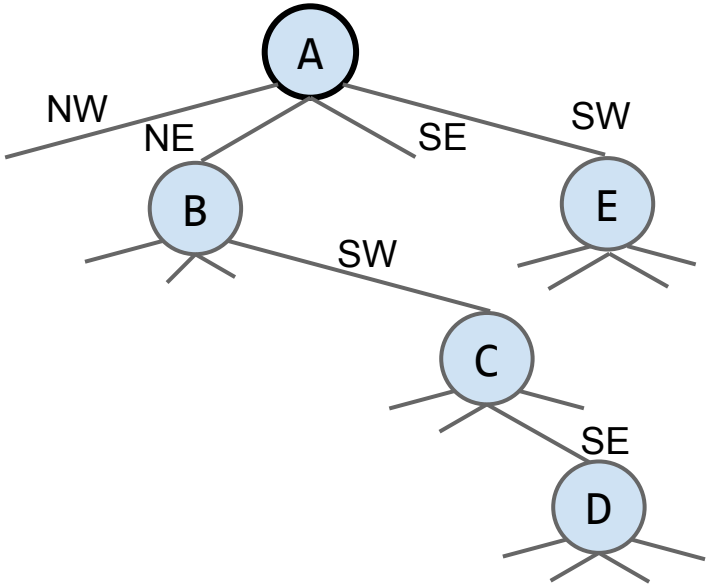
Goal: Find points in green rectangle.

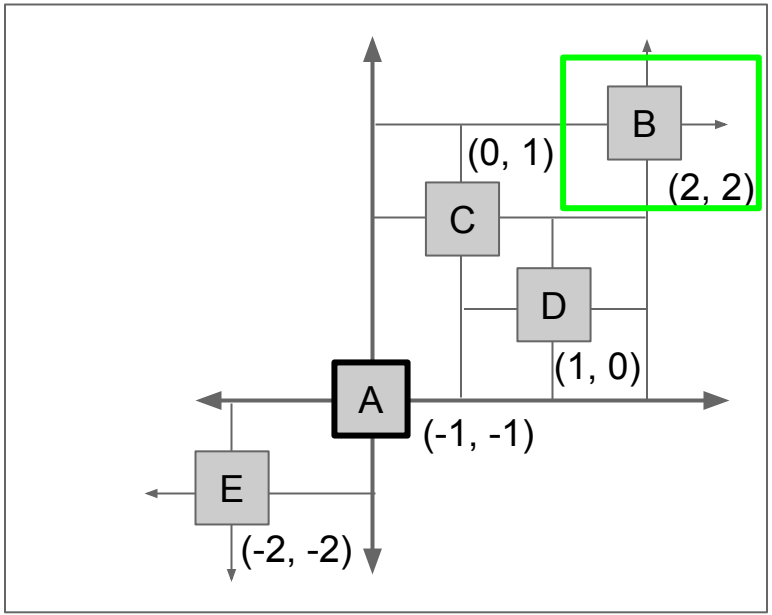
results = []

QuadTree Range Search Demo

Start at root.

- Is A in the box? No.
- Which subspaces might have good points?





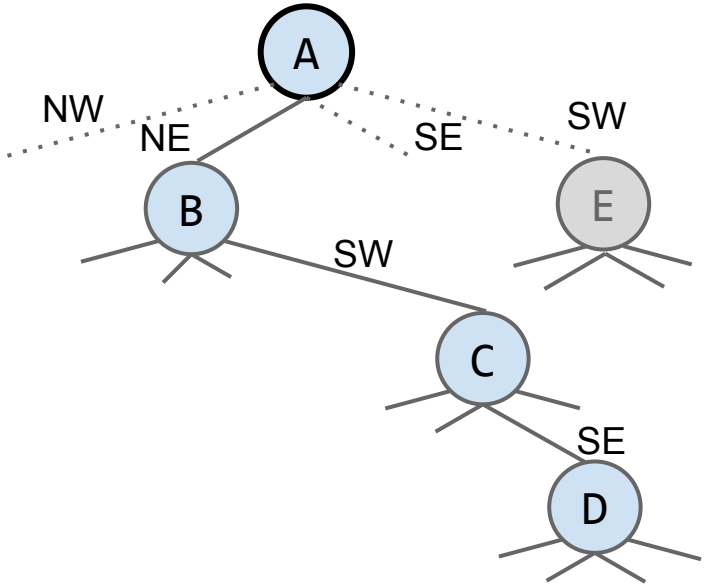
Goal: Find points in green rectangle.

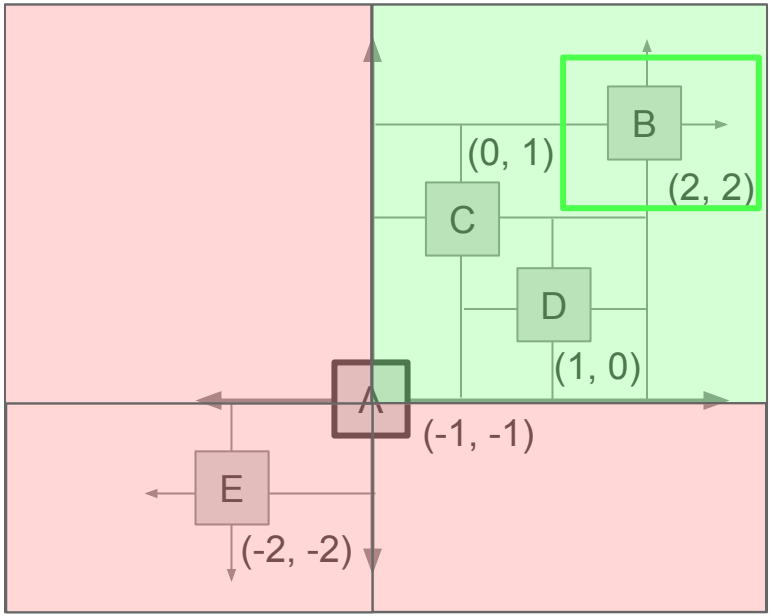
results = []

QuadTree Range Search Demo

Start at root.

- Is A in the box? No.
- Which subspaces might have good points? Only NE. Prune the others.





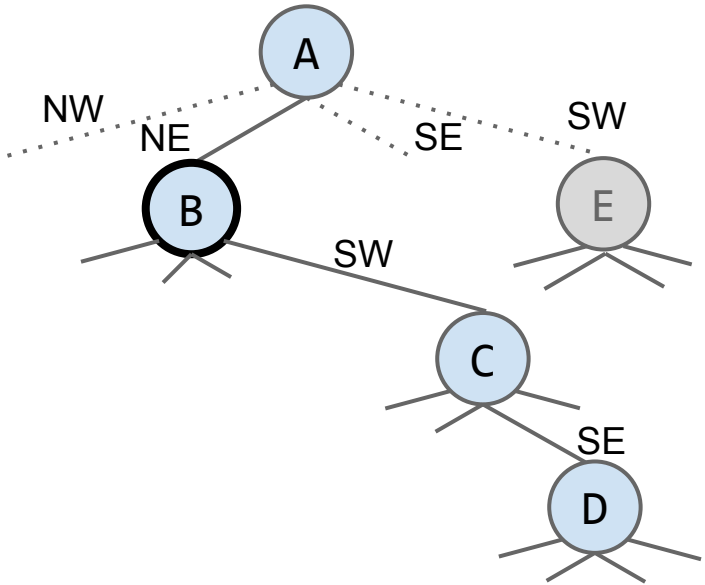
Goal: Find points in green rectangle.

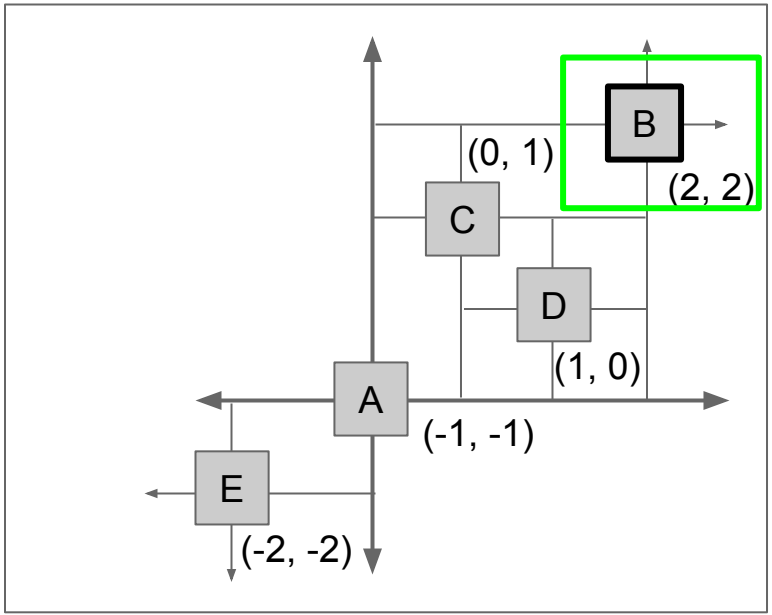
results = []

QuadTree Range Search Demo

Examine B.

- Is B in the box?





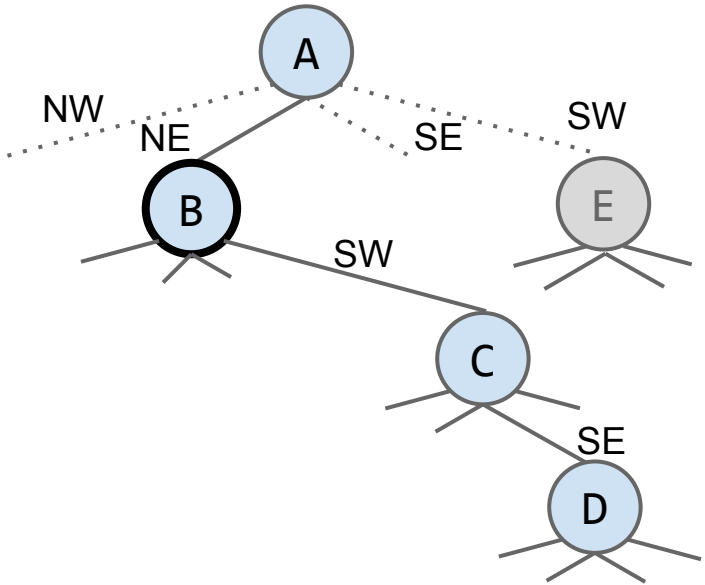
Goal: Find points in green rectangle.

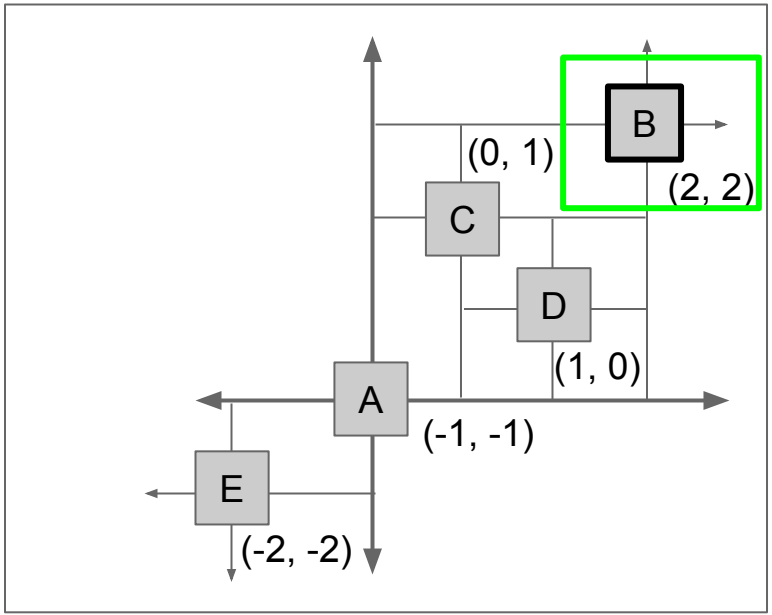
results = []

QuadTree Range Search Demo

Examine B.

- Is B in the box? Yes, so add to results.





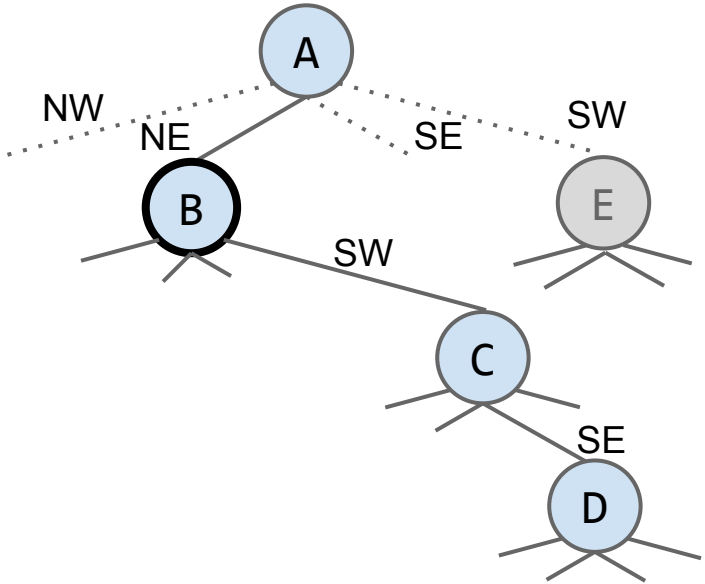
Goal: Find points in green rectangle.

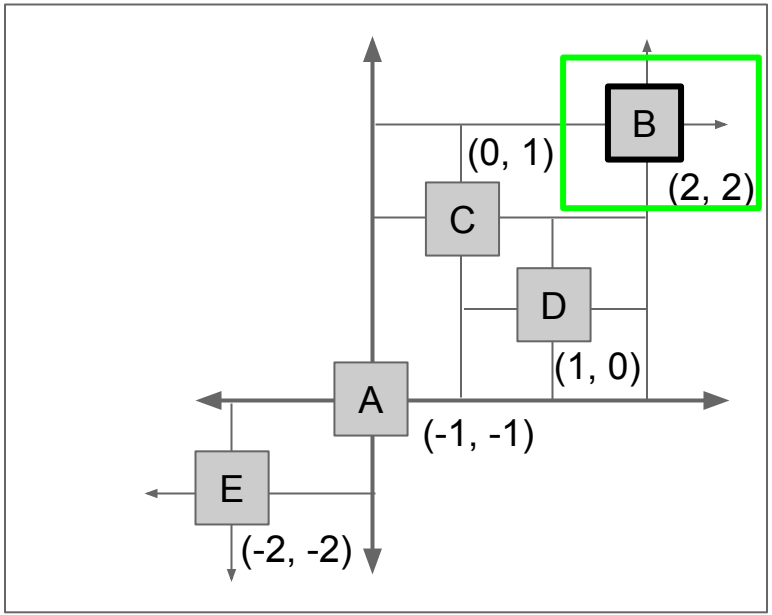
results = [B]

QuadTree Range Search Demo

Examine B.

- Is B in the box? Yes, so add to results.
- Which subspaces might have good points?





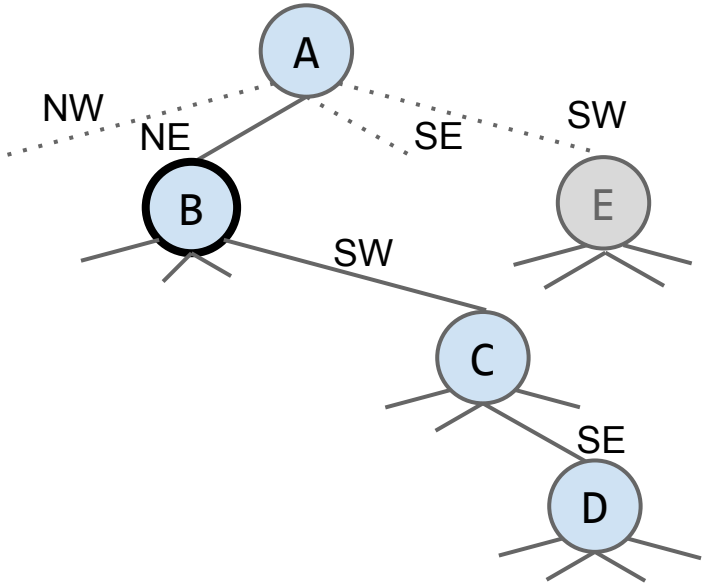
Goal: Find points in green rectangle.

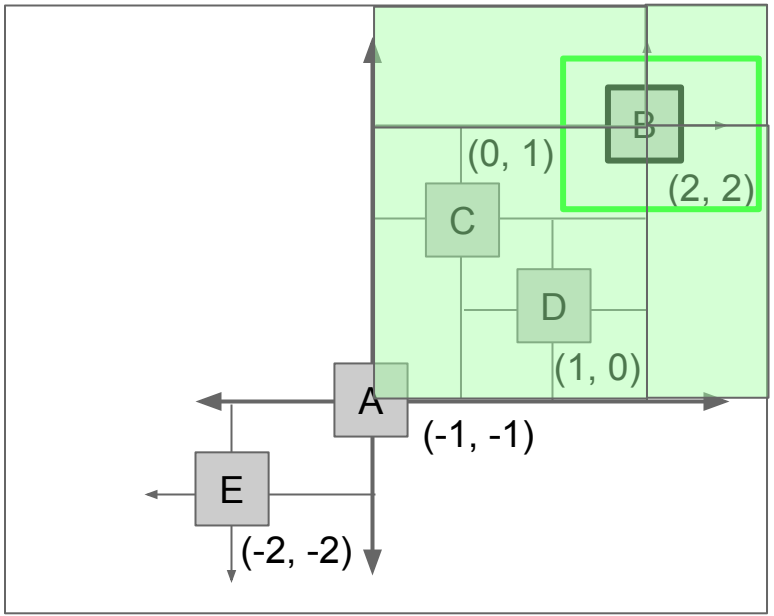
results = [B]

QuadTree Range Search Demo

Examine B.

- Is B in the box? Yes, so add to results.
- Which subspaces might have good points? All four, so explore all four.





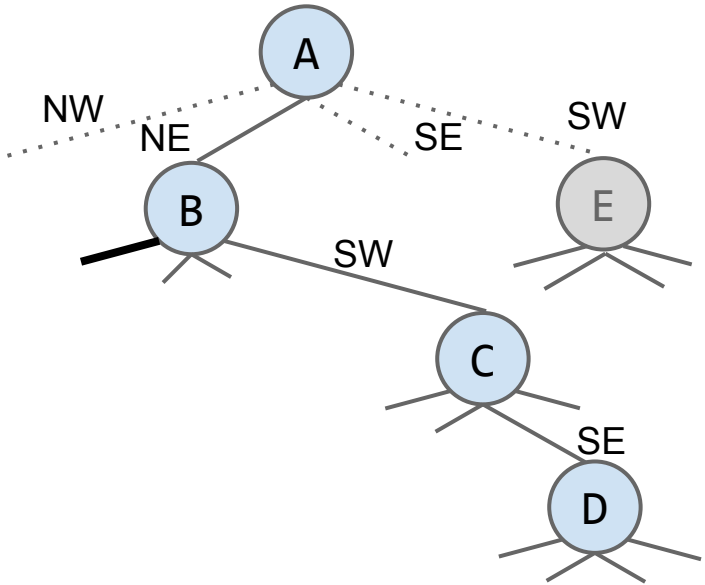
Goal: Find points in green rectangle.

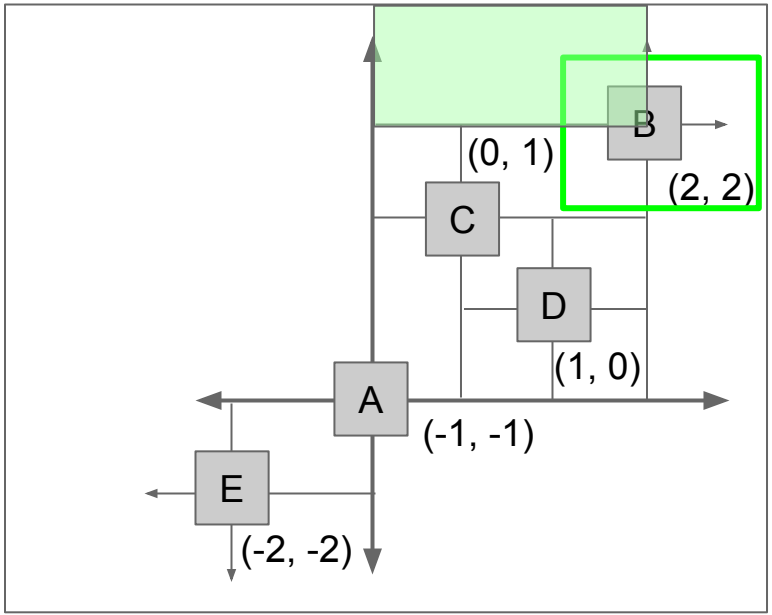
results = [B]

QuadTree Range Search Demo

Examine B's NW link (null).

- Node is null, so return.





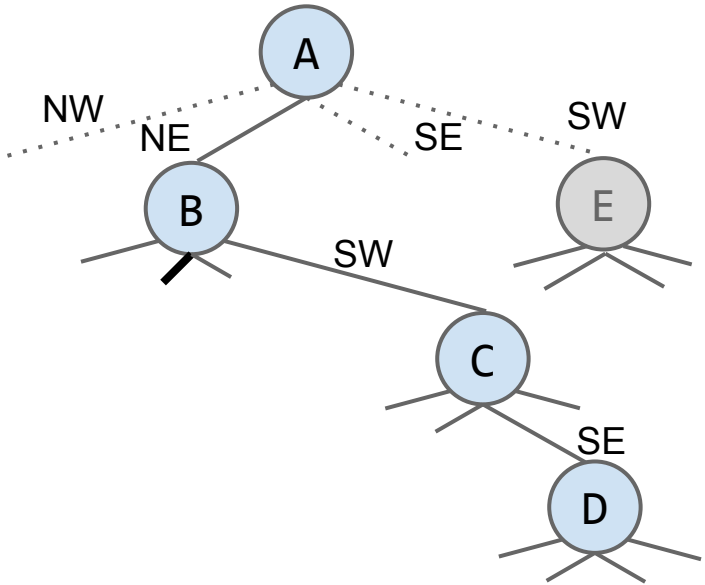
Goal: Find points in green rectangle.

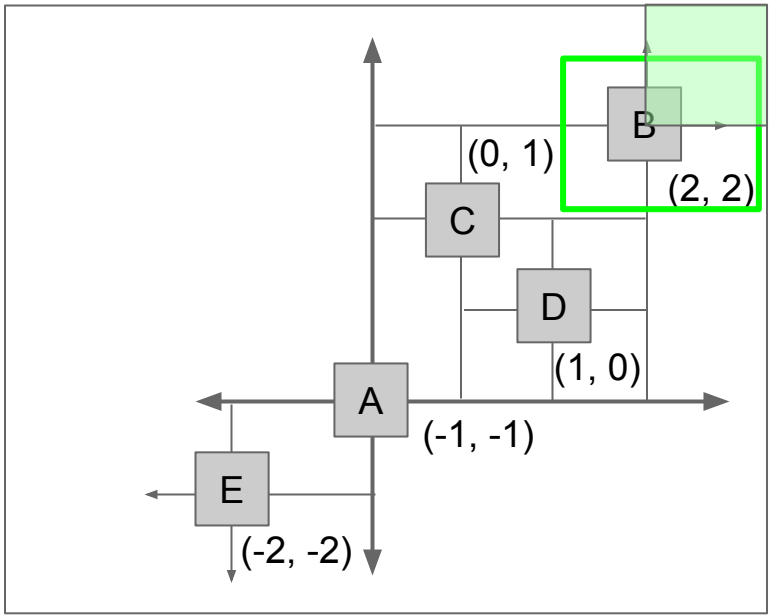
results = [B]

QuadTree Range Search Demo

Examine B's NE link (null).

- Node is null, so return.





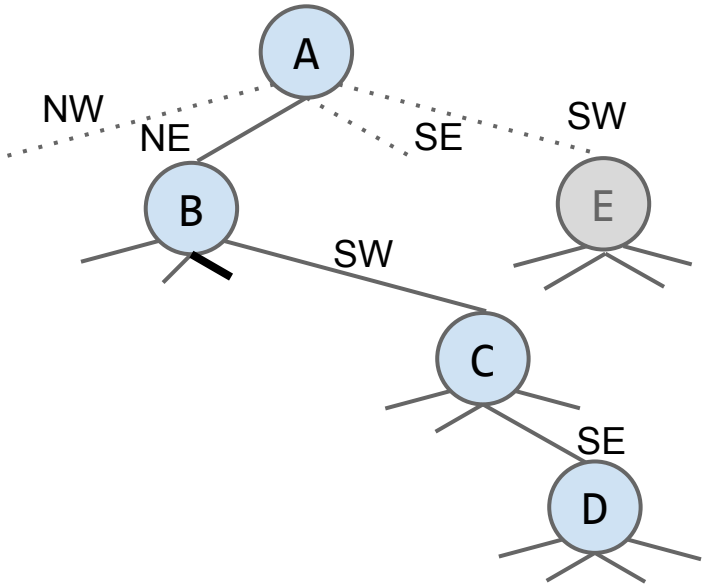
Goal: Find points in green rectangle.

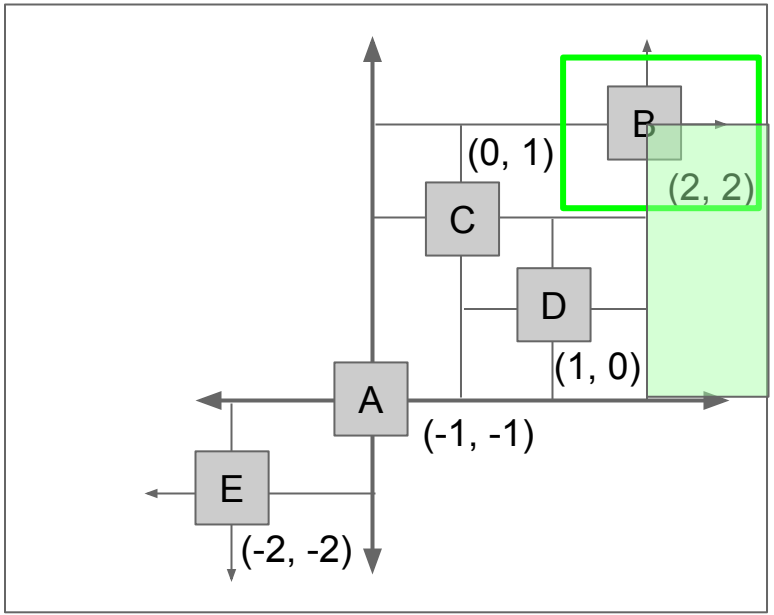
results = [B]

QuadTree Range Search Demo

Examine B's SE link (null).

- Node is null, so return.





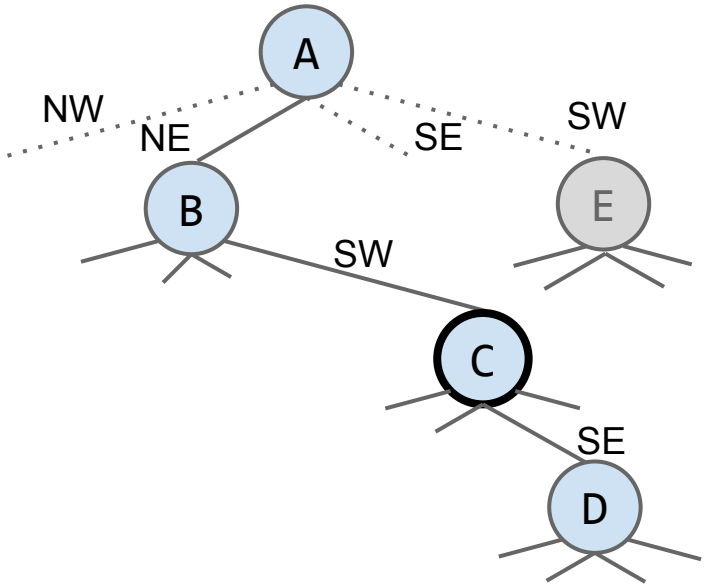
Goal: Find points in green rectangle.

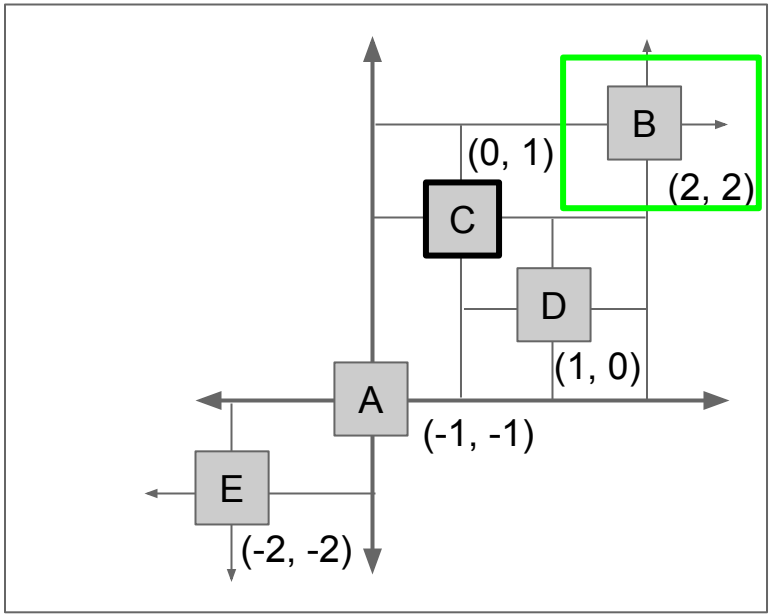
results = [B]

QuadTree Range Search Demo

Examine C.

- Is C in the rectangle? No.





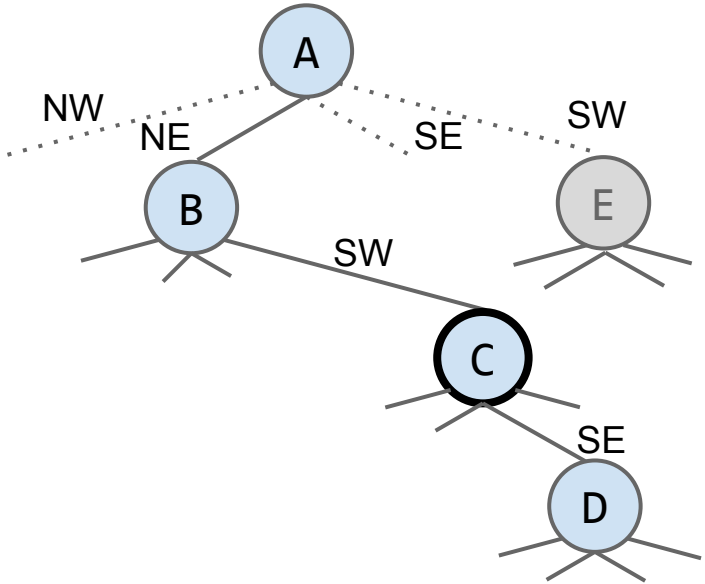
Goal: Find points in green rectangle.

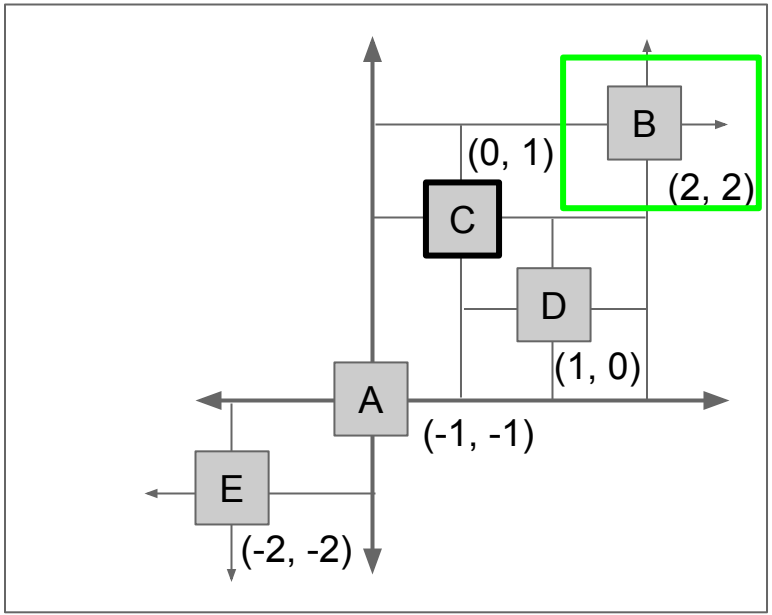
results = [B]

QuadTree Range Search Demo

Examine C.

- Is C in the rectangle? No.
- Which subspaces might have good points?





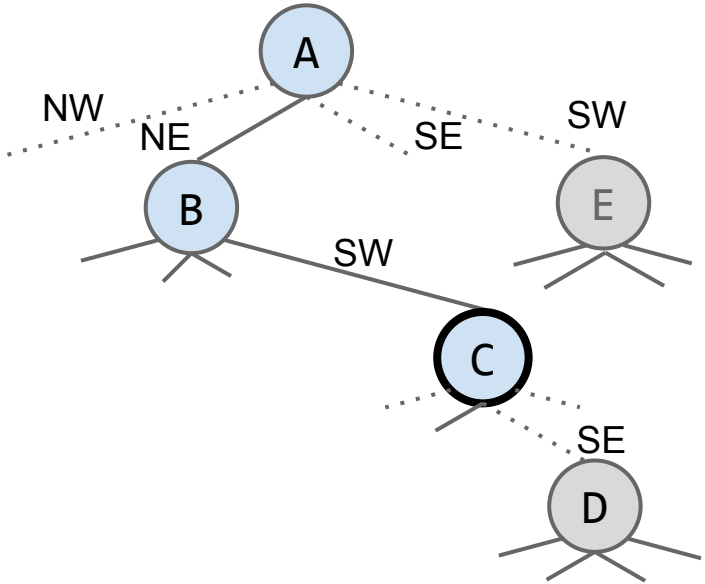
Goal: Find points in green rectangle.

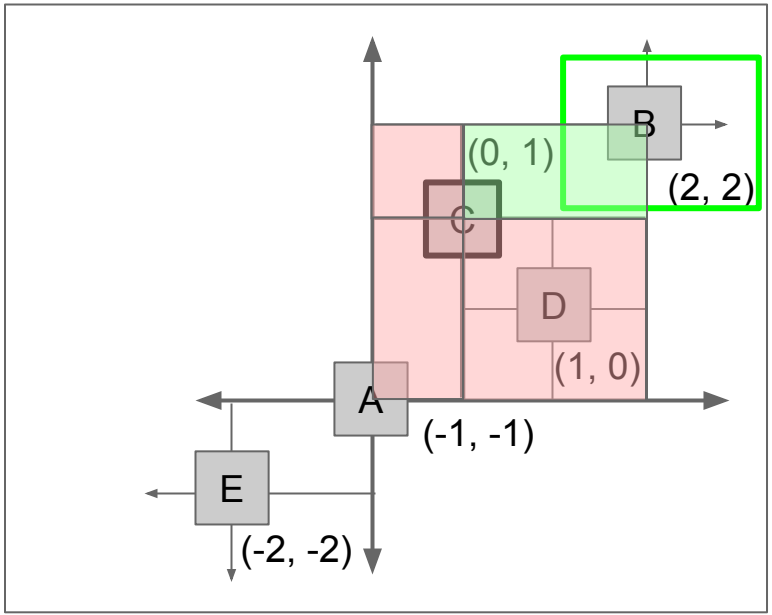
results = [B]

QuadTree Range Search Demo

Examine C.

- Is C in the rectangle? No.
- Which subspaces might have good points? Only NE. Prune the others.





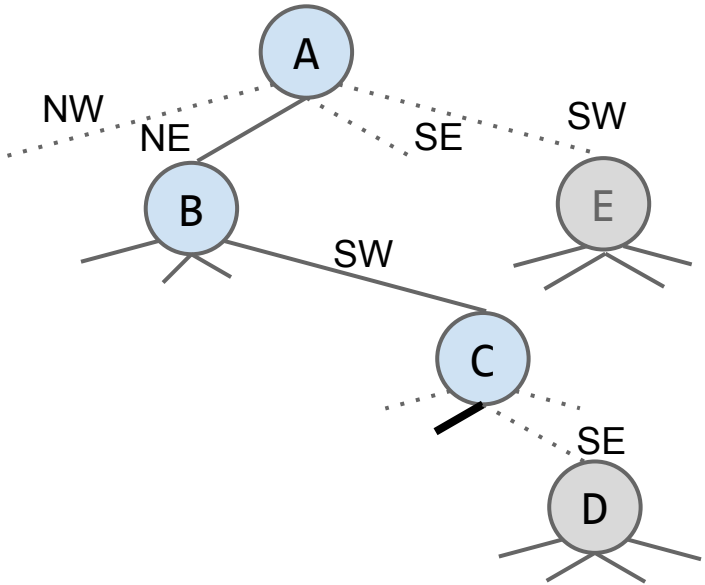
Goal: Find points in green rectangle.

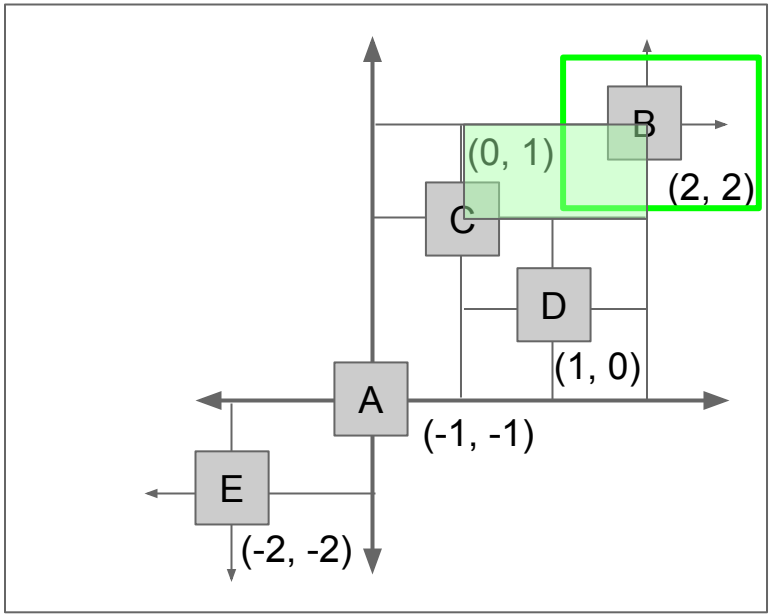
results = [B]

QuadTree Range Search Demo

Examine C's NE link (null).

- Node is null, so return.





Goal: Find points in green rectangle.

results = [B]