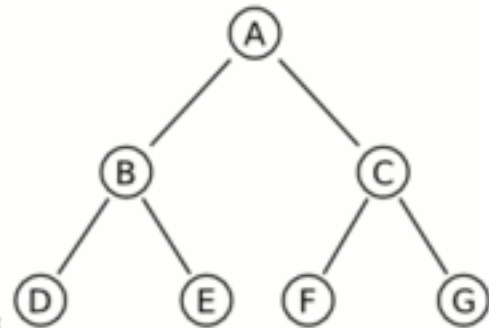
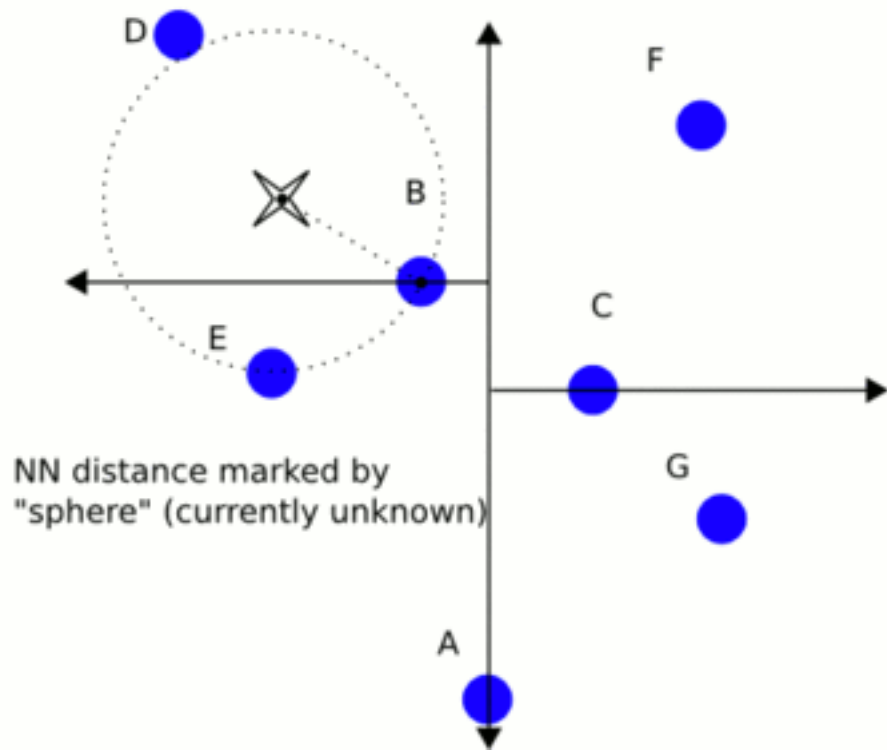


X-Splitting planes

Y-Splitting planes

X-Splitting planes
not needed for leaf





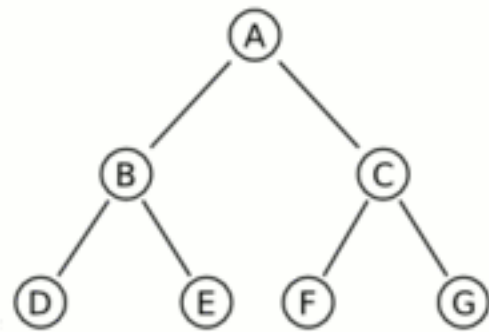
What if the query point is not in the training set?

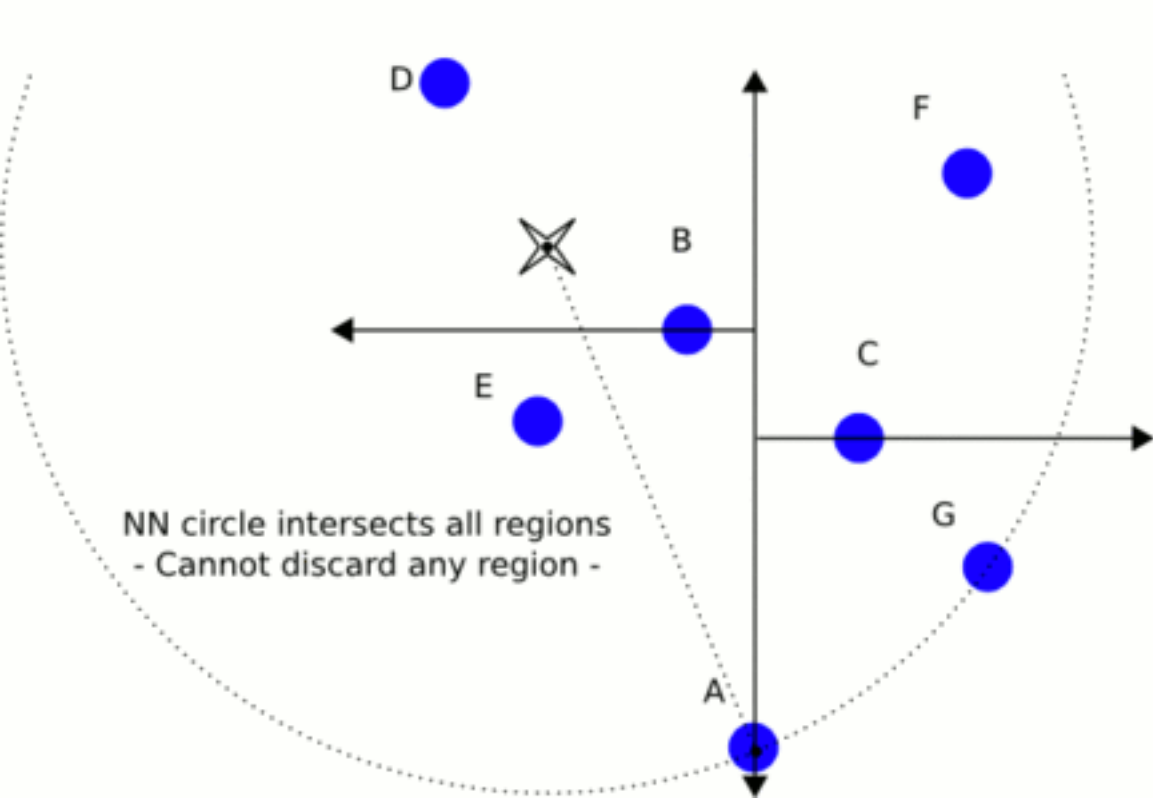
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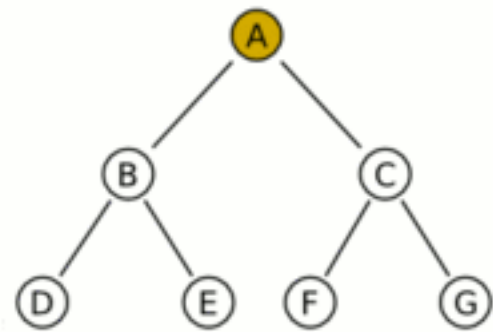
NO PRUNING

NO PRUNING

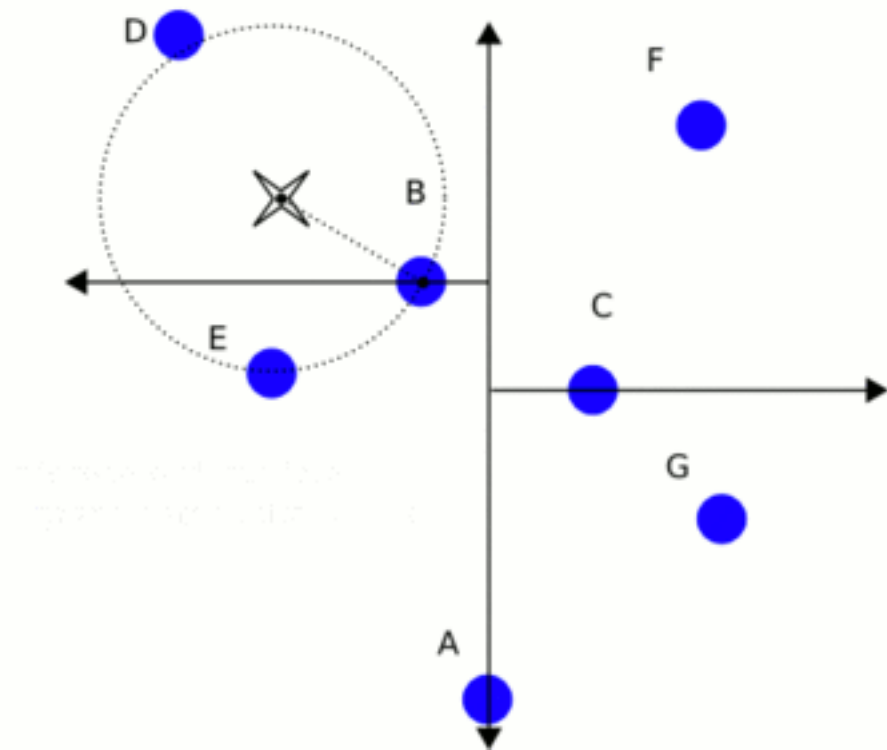
NO PRUNING

NO PRUNING

NO PRUNING



Start at A, then proceed in depth-first search (maintain a stack of parent-nodes if using a singly-linked tree). Set best estimate to A's distance. Then examine left child node



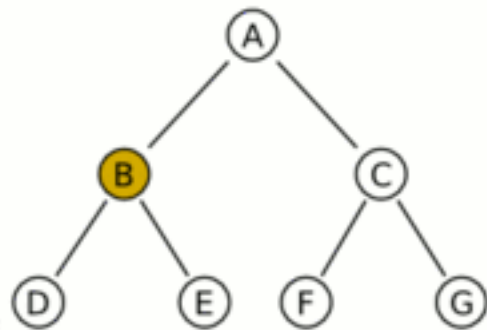
Calculate B's distance

Compare against best estimate

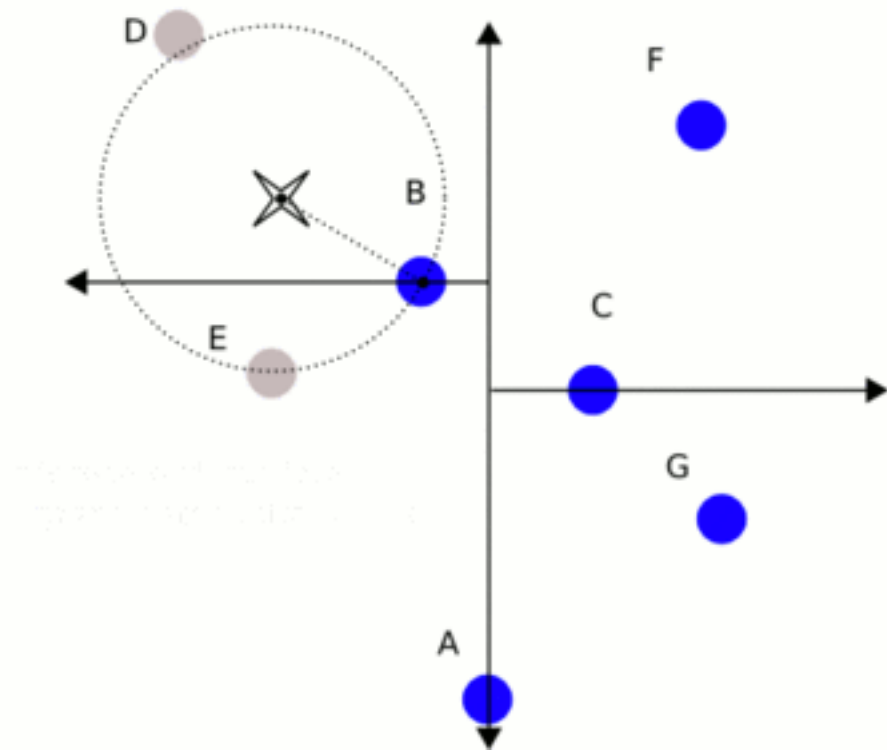
Update best estimate

Examine children (left then right)

Repeat until all children are examined



Calculate B's distance and compare against best estimate
- It is smaller distance, so update best estimate. Examine children (left then right)



Visit Node D

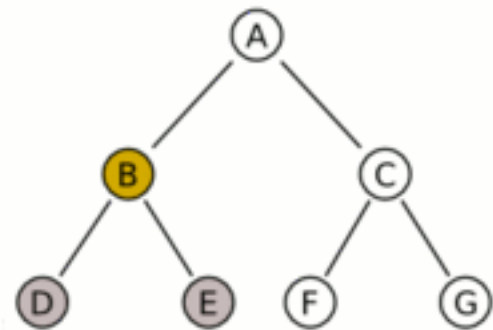
Visit Node E

Prune Node A

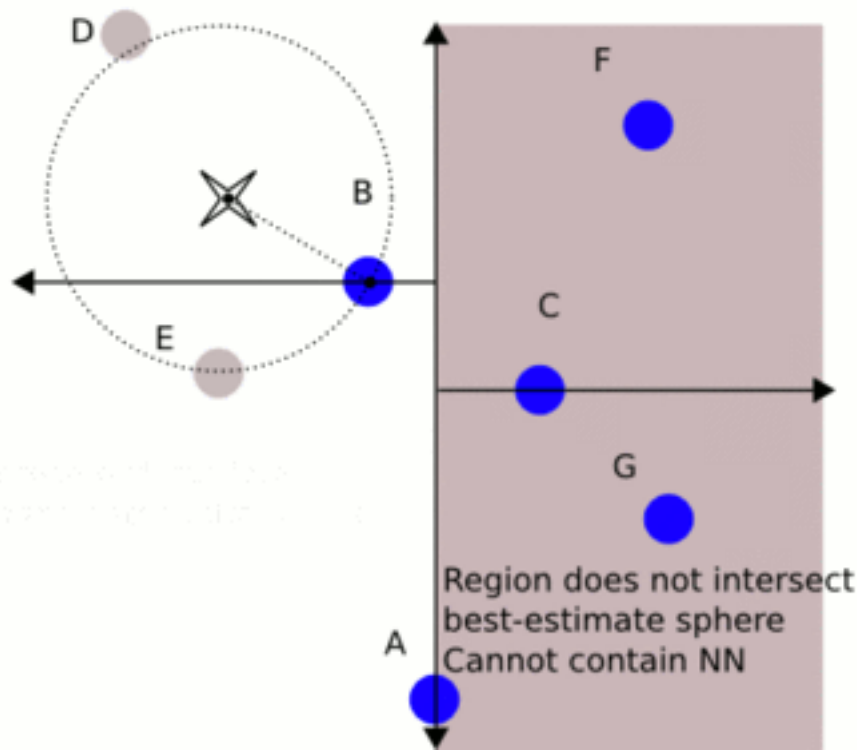
Visit Node C

Visit Node F

Visit Node G



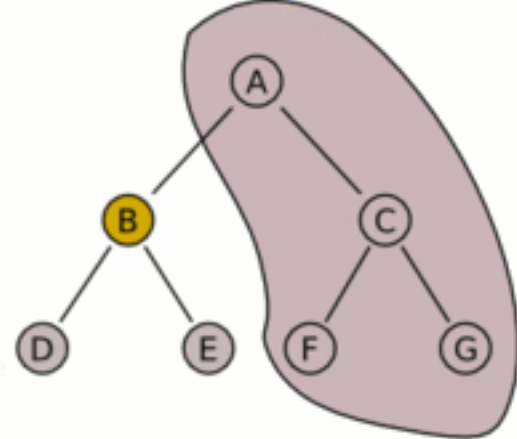
D & E Discarded as B
(already visited) is closer.
B is the best estimate for B's sub-branch
Proceed back to parent node



NO, NOT YET

SEARCHING AREA

YES, YES, YES
NEIGHBOR IS HERE



A's children have all been searched,
B is the best estimate for entire tree

SEARCHING AREA
NO, YES, YES, YES
NEIGHBOR IS HERE