THE BINARY SEARCH TREE

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THIS IS ALSO CALLED AN ORDERED BINARY TREE AND IT'S A TREE WITH SOME SPECIFIC CHARACTERISTICS

FOR EVERY NODE IN THE TREE:

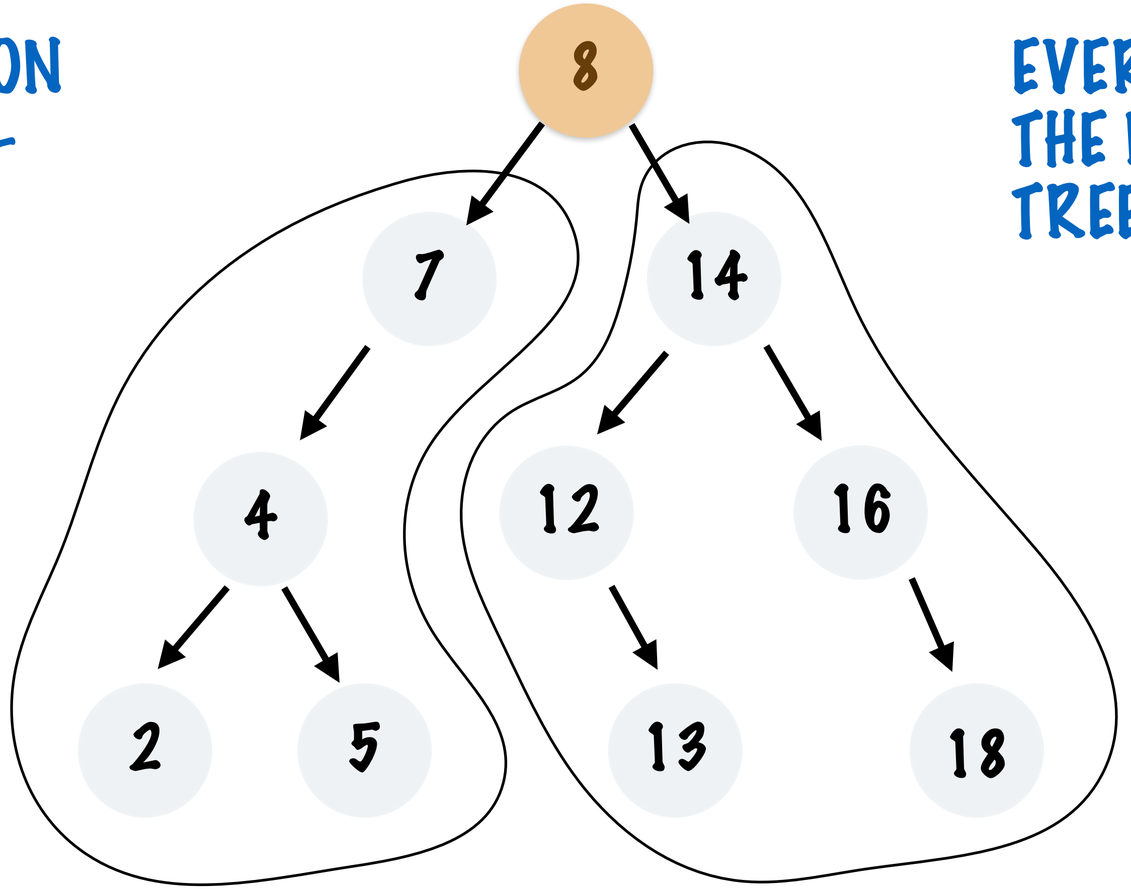
EACH NODE IN THE LEFT SUB-TREE OF THAT NODE HAS A VALUE LESS THAN OR EQUAL TO THE VALUE OF THE NODE

EACH NODE IN THE RIGHT SUB-TREE OF THAT NODE HAS A VALUE GREATER THAN THE VALUE OF THE NODE

THE BINARY SEARCH TREE

CONSIDER THE NODE 8

EVERY NODE ON THE LEFT SUB-TREE IS <= 8



EVERY NODE ON THE RIGHT SUB-TREE IS >8

RECURSIVELY EVERY NODE IN THE TREE SHOULD OBEY THIS SAME CONSTRAINT

THIS IS TRUE FOR EVERY NODE

THE BINARY SEARCH TREE

BINARY SEARCH TREES ARE TYPICALLY USED FOR
FAST INSERTION AND FAST LOOKUP

IN A TREE WHEN A NEW NODE IS ADDED THERE IS EXACTLY ONE PLACE THAT IT CAN BE

THE STRUCTURE OF A TREE DEPENDS ON THE ORDER IN WHICH THE NODES ARE ADDED

INSERTION

WHILE SEARCHING FOR A NODE IN THE TREE THERE IS ONLY ONE PLACE WHERE THAT NODE CAN BE FOUND

WE CAN SIMPLY FOLLOW THE RIGHT OR LEFT SUB-TREES BASED ON THE VALUE WE WANT TO FIND

LOOKUP