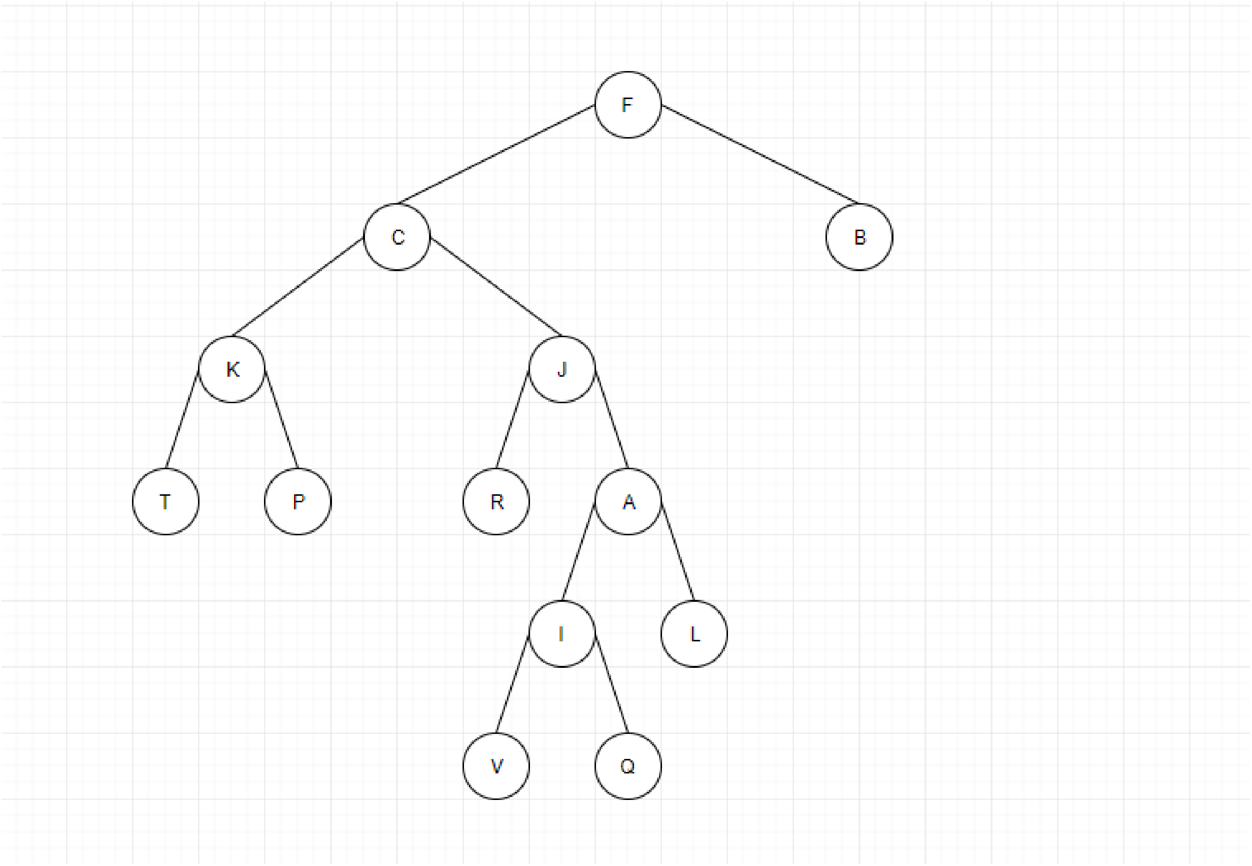
Andrew Ha – 40088418
Nora Houari
COMP 352
Assignment 3 - Theory

1.)



2.)

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Question 3:

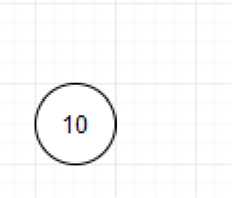
3A) This will depend on which method you will use more. If you are going to use more insertion operations based on indices go with the array based, but if you are going to be doing more insertions at the beginning then use the doubly linked list implementation. This is because adding at the beginning is faster for doubly linked lists, while indices are faster for arrays.

3B) The better implementation to go with would be a doubly linked list. This is because in the scenario you only care about the position of an element. Since we only care about positions, doubly linked lists are best at this.

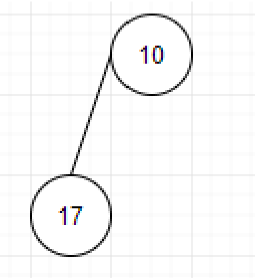
3C) Once again, it will depend on which operations you're going to be doing more of. If you are going to be doing more removal at positions, such as beginning and end then go with the doubly linked list, However if you are doing more setting values then go with the array implementation. This is because there is no real benefit unless you are doing more of one operation then the other.

Question 4)

1.) Insert 10



2.) Insert 17



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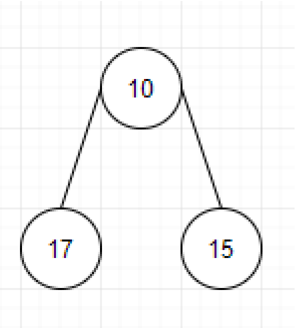
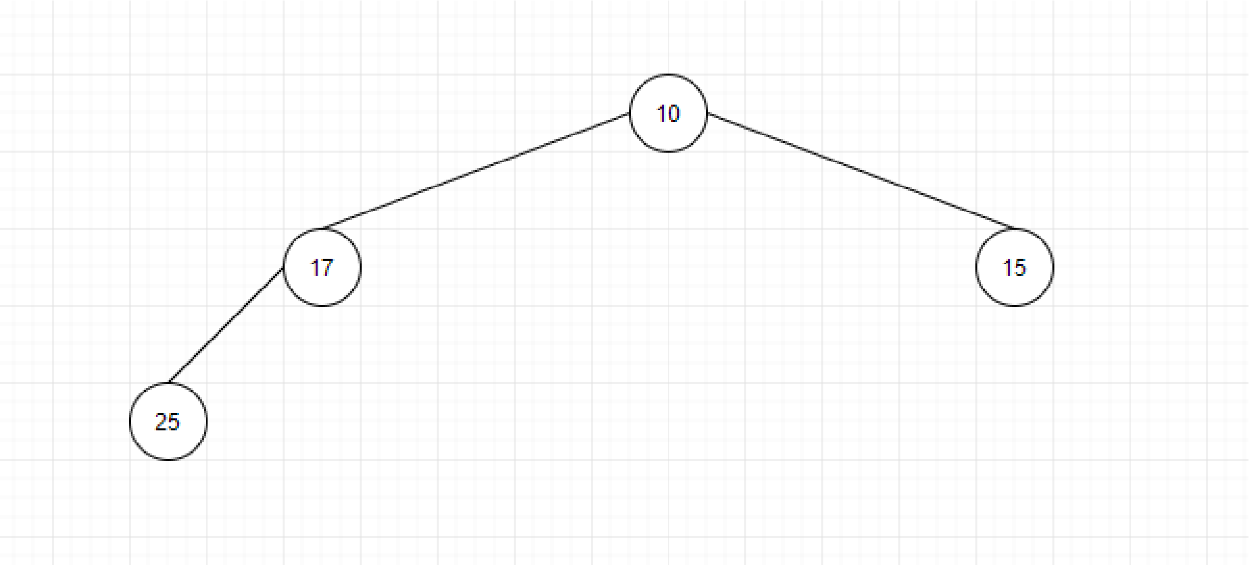


4.) Insert 25



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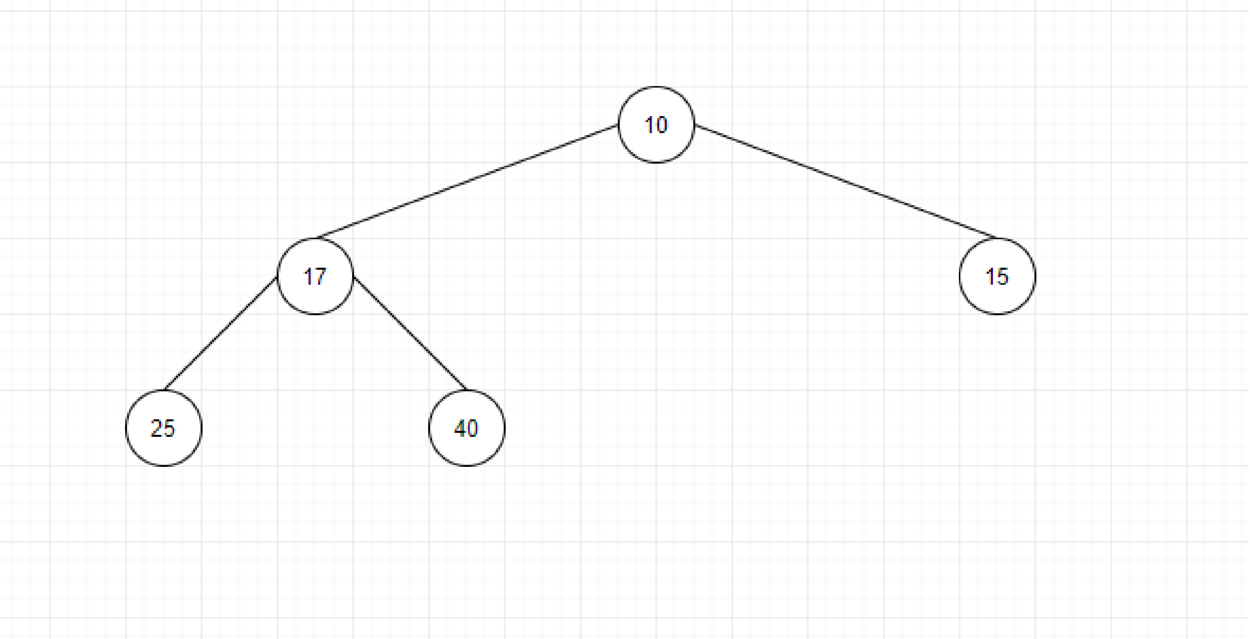

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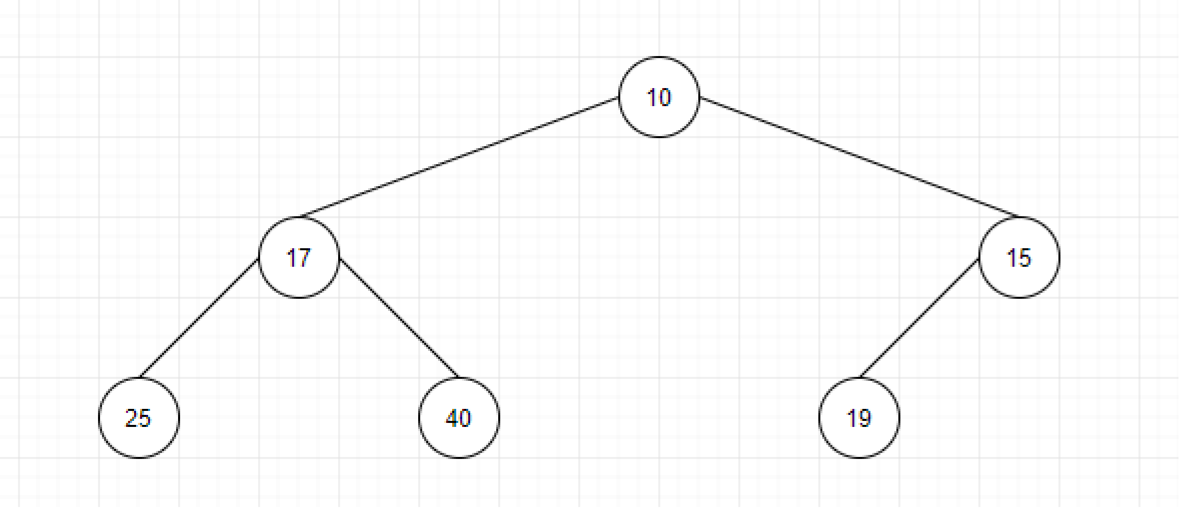
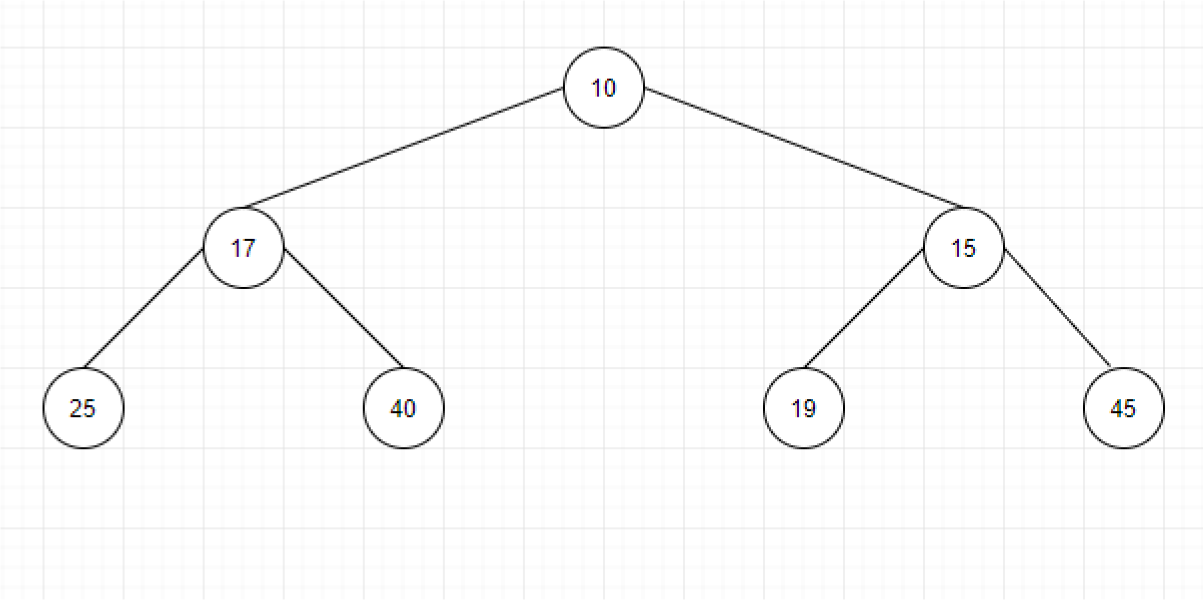
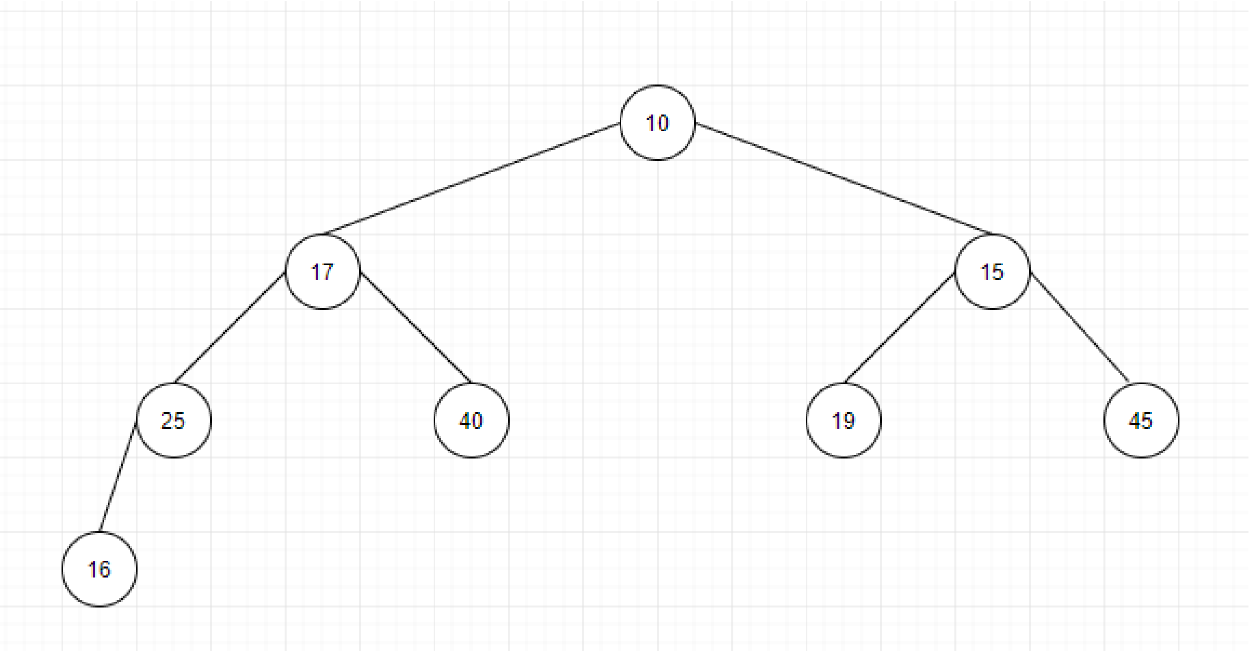
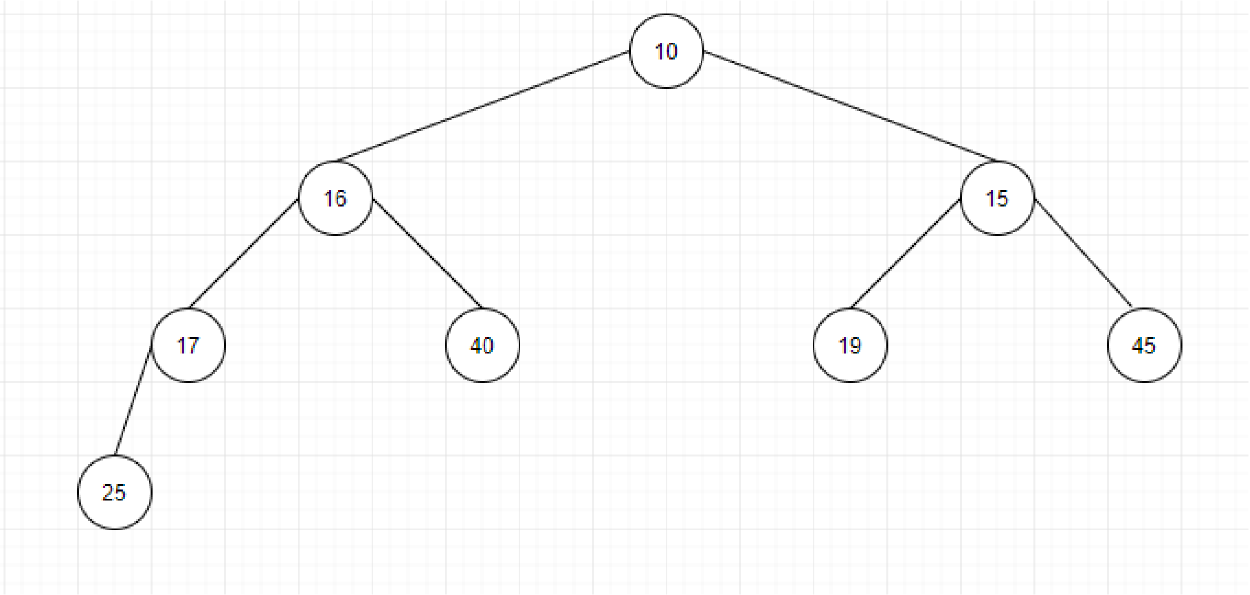


7.) Insert 45

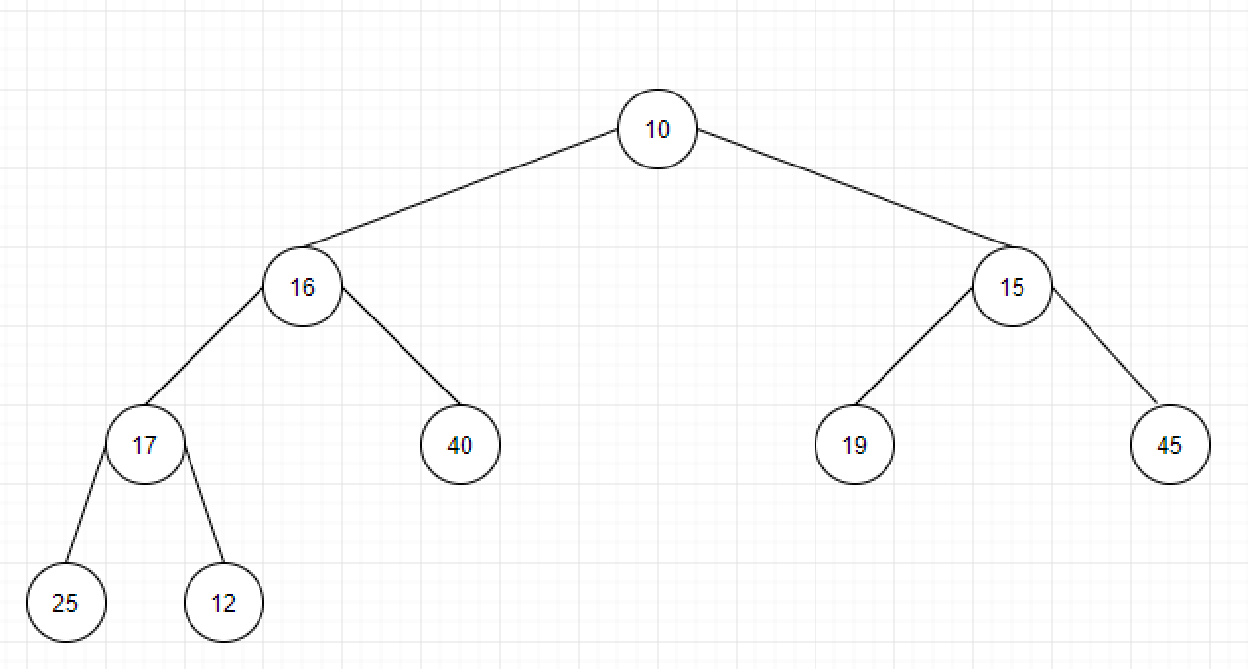


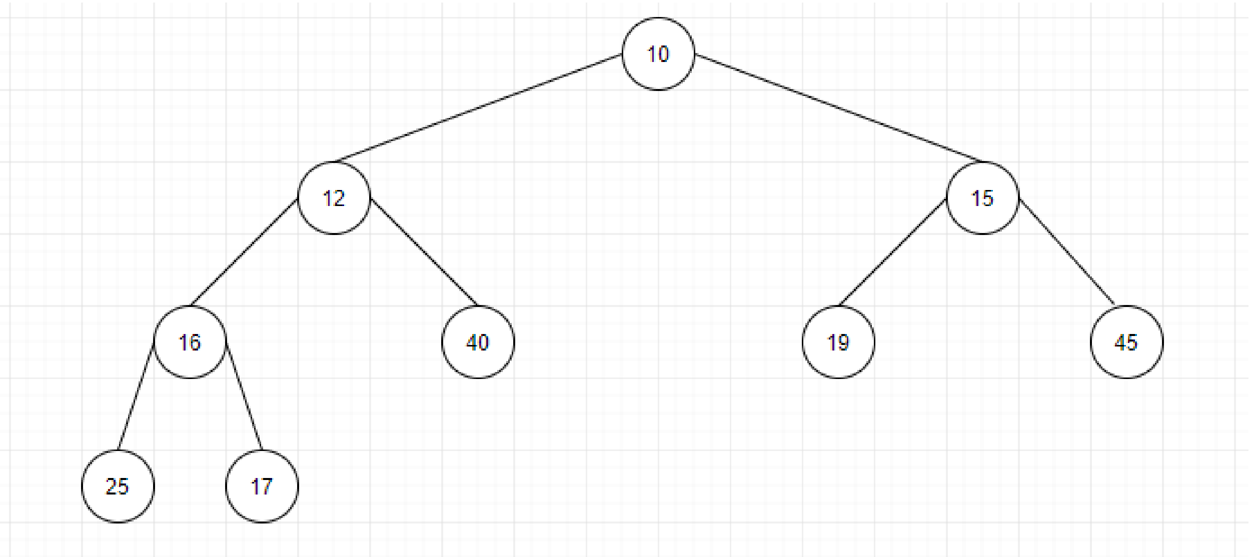
8.) Insert 16 and swap





9.) Insert 12 and Swap

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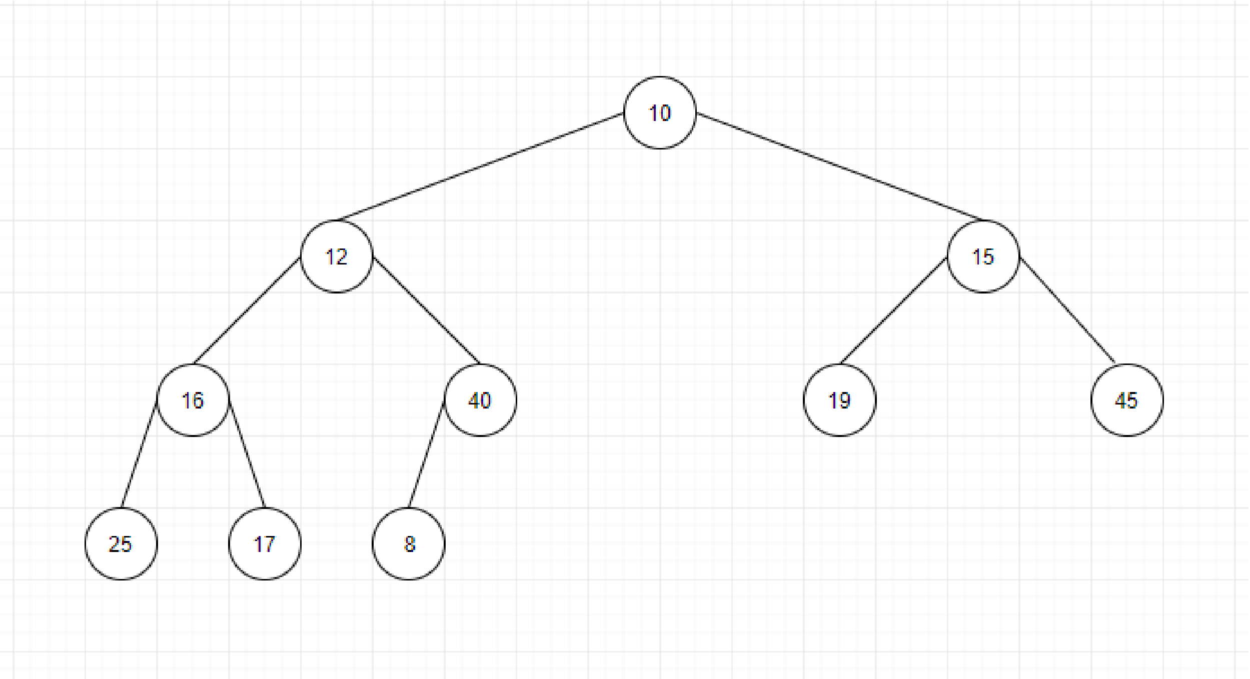
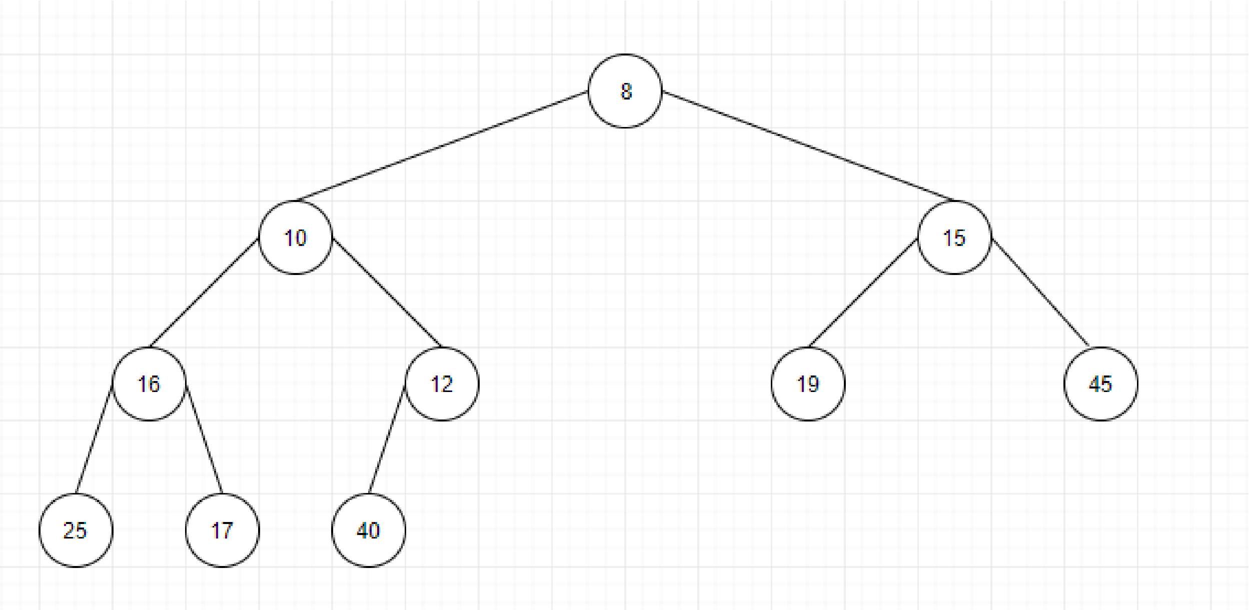
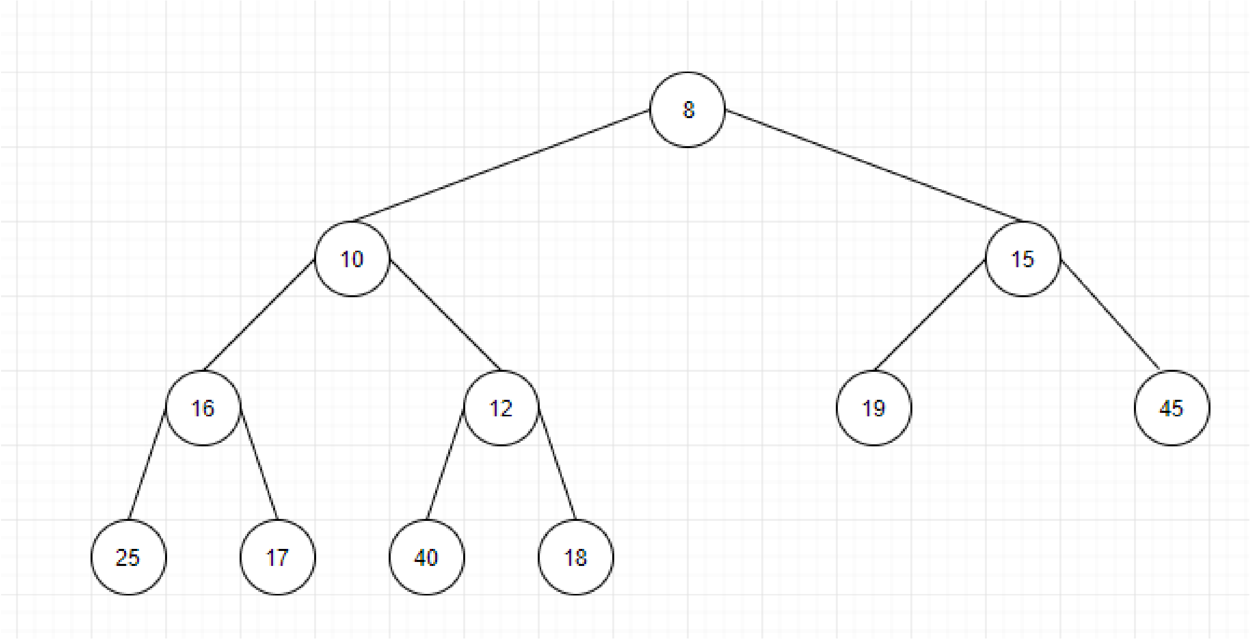
10.) Insert 8 and Swap

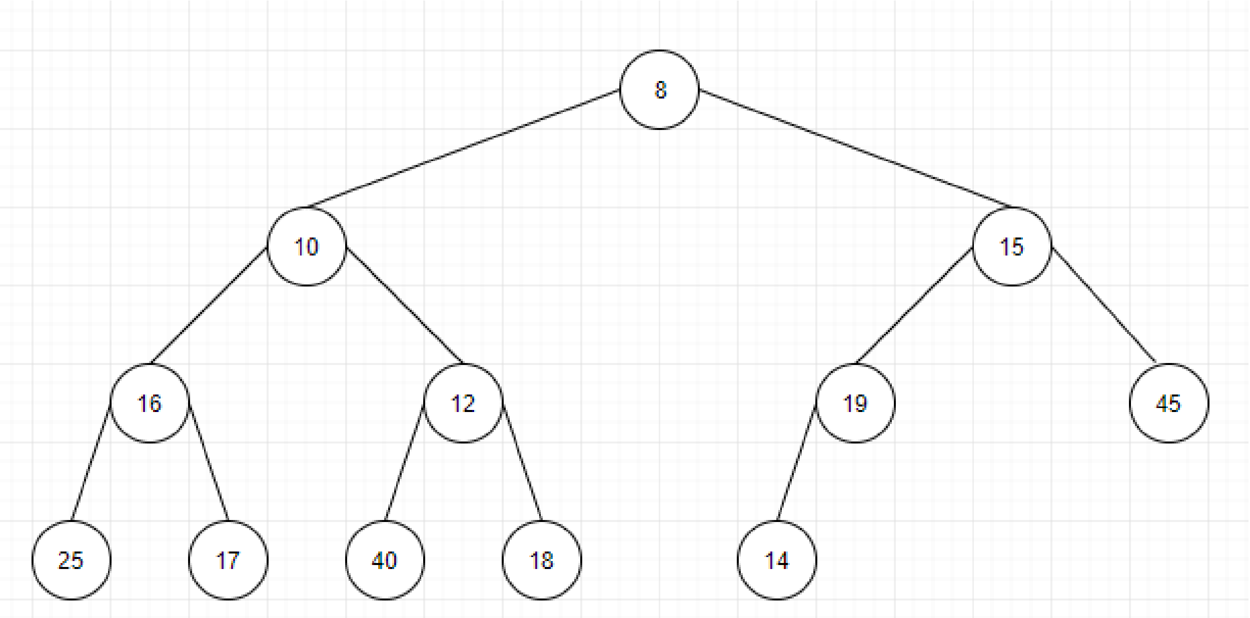


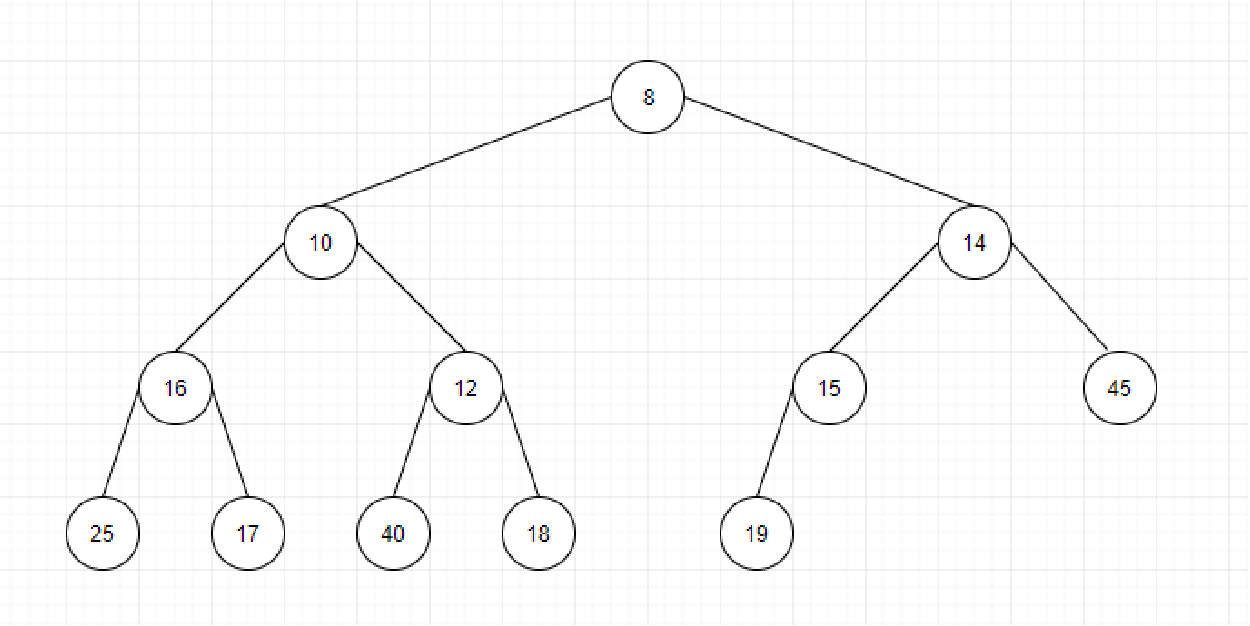


11.)Insert 18

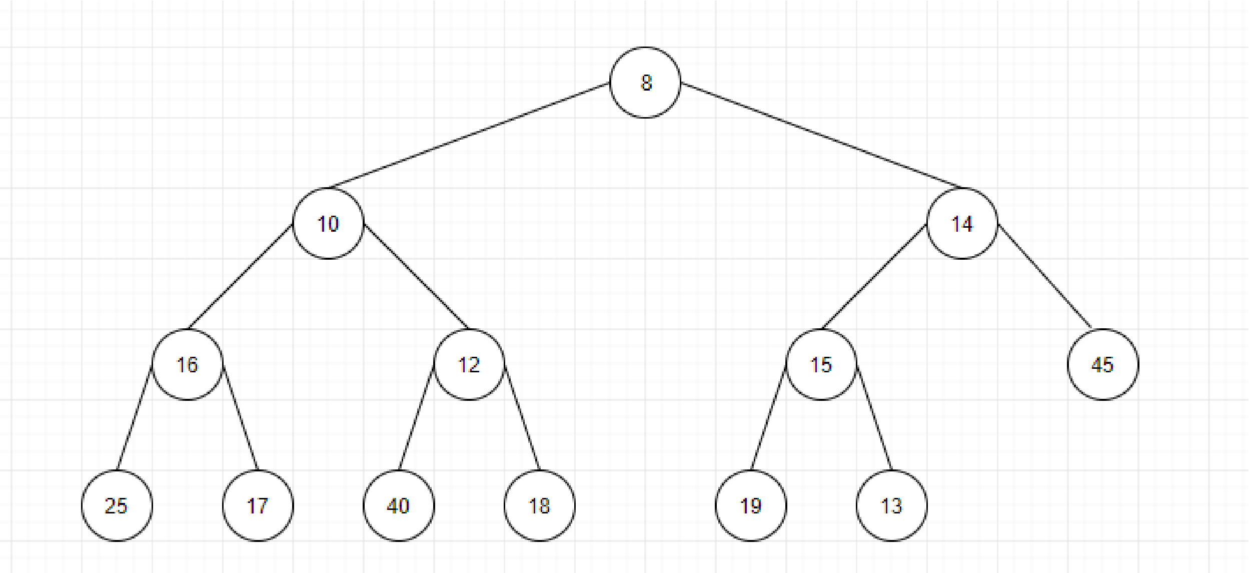


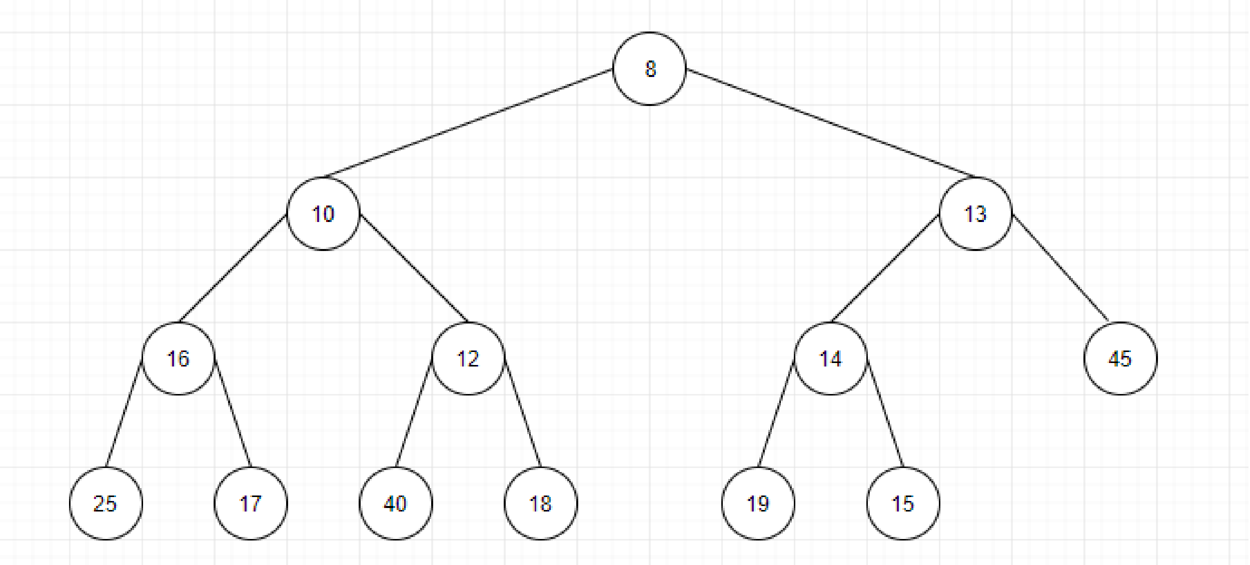
12.)Insert 14 and swap



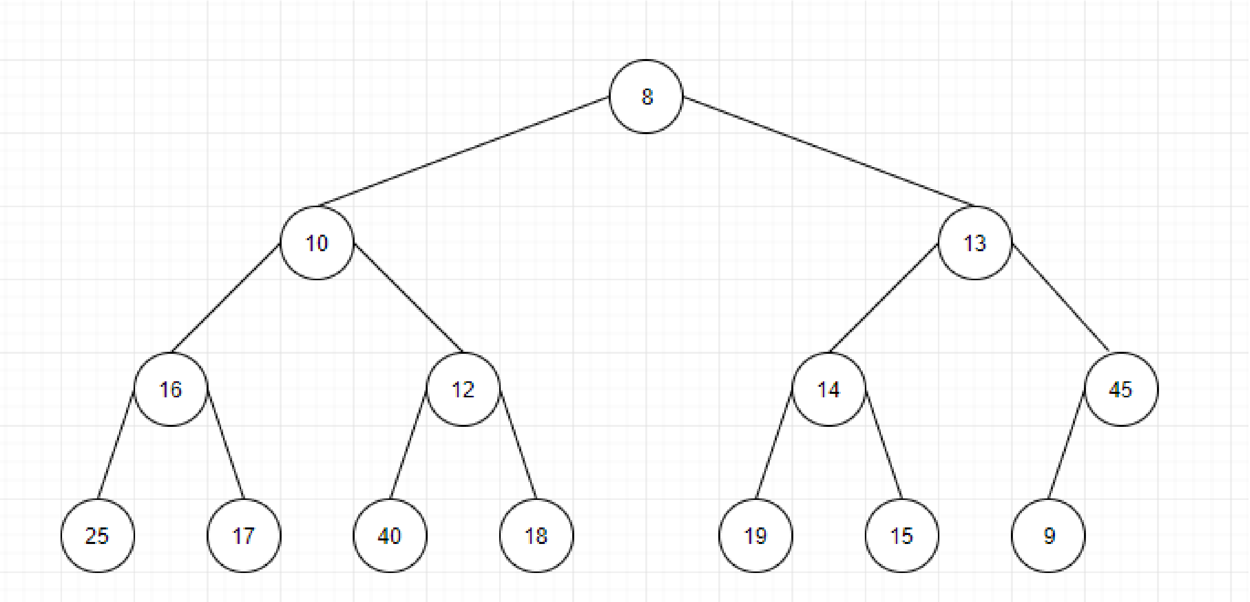


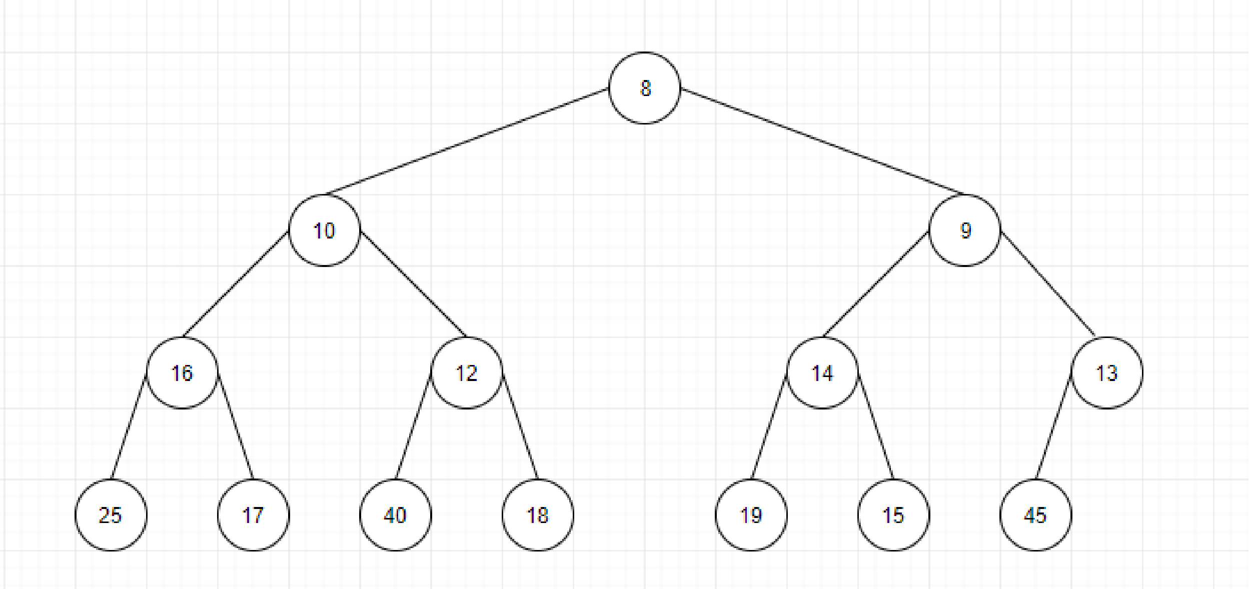
13.)Insert 13 and swap





14.)Insert 9 and swap





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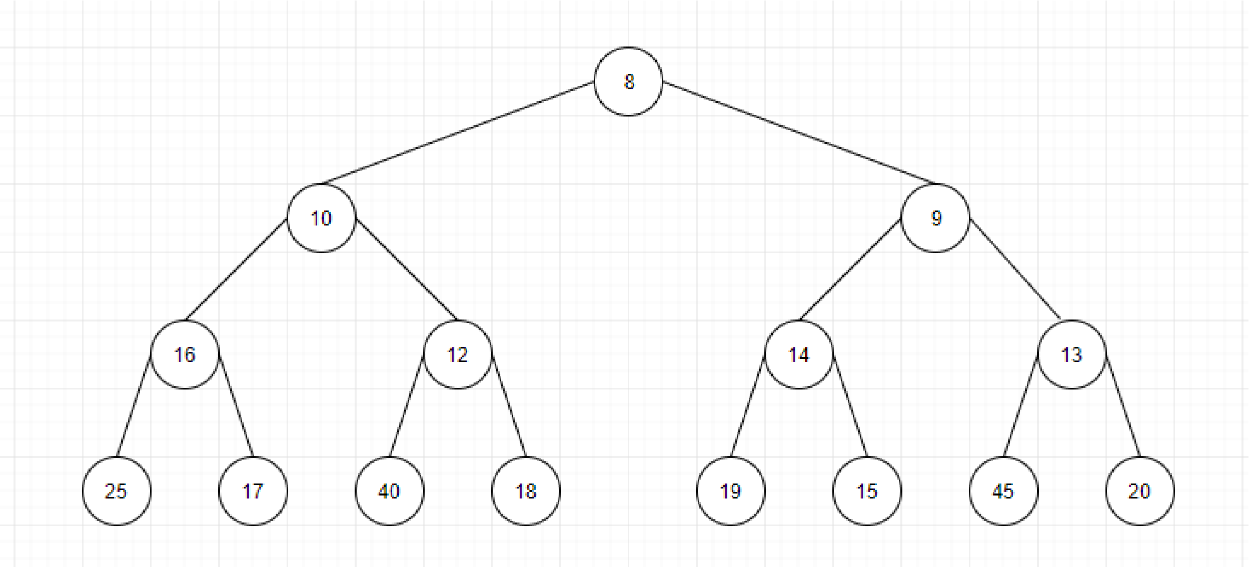
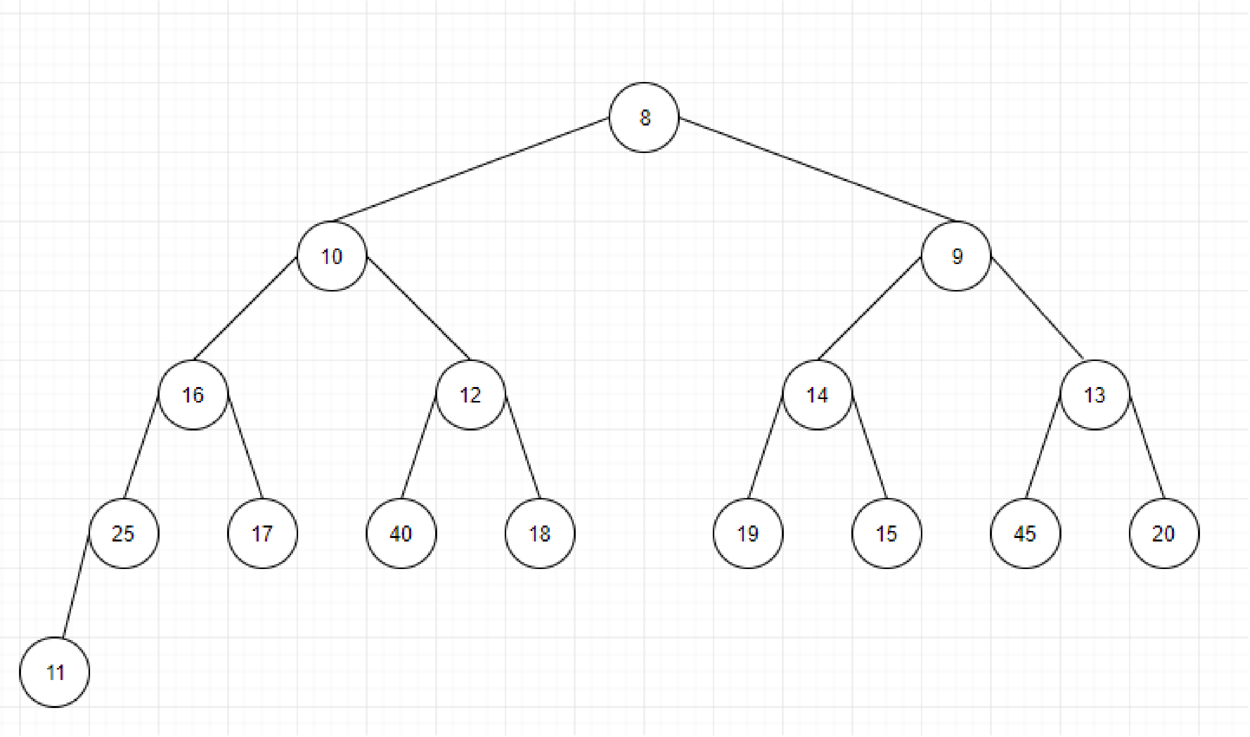
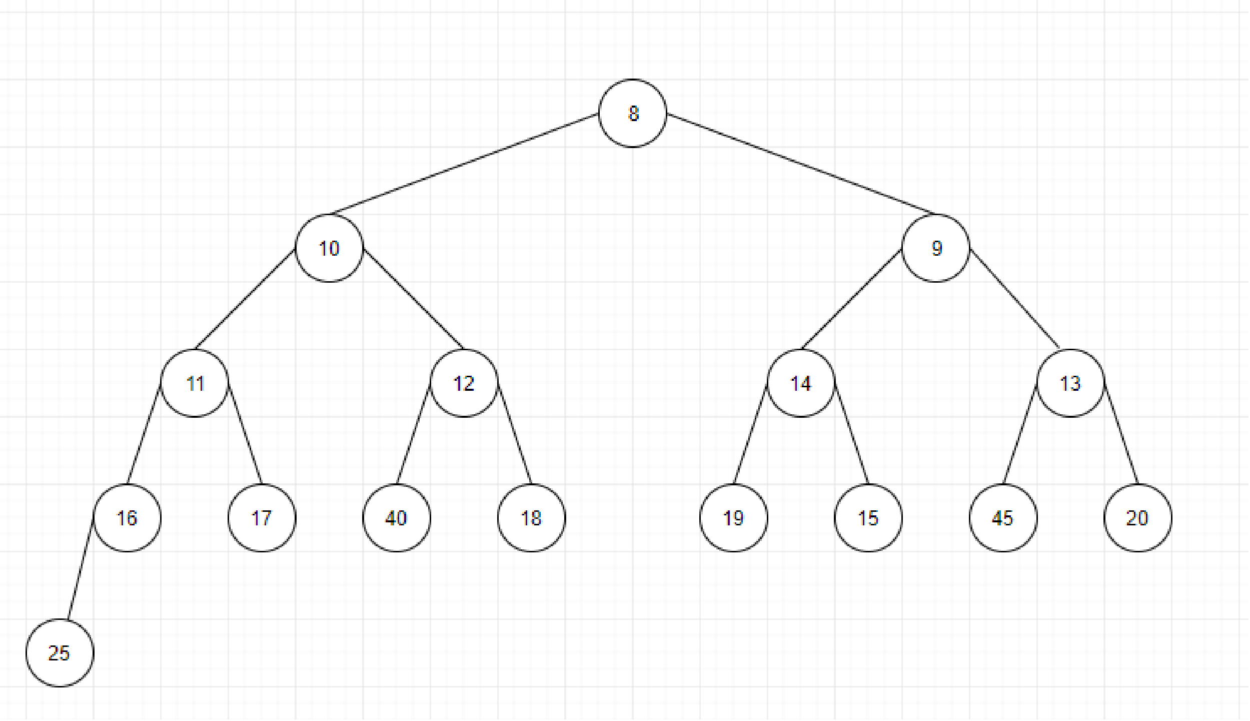
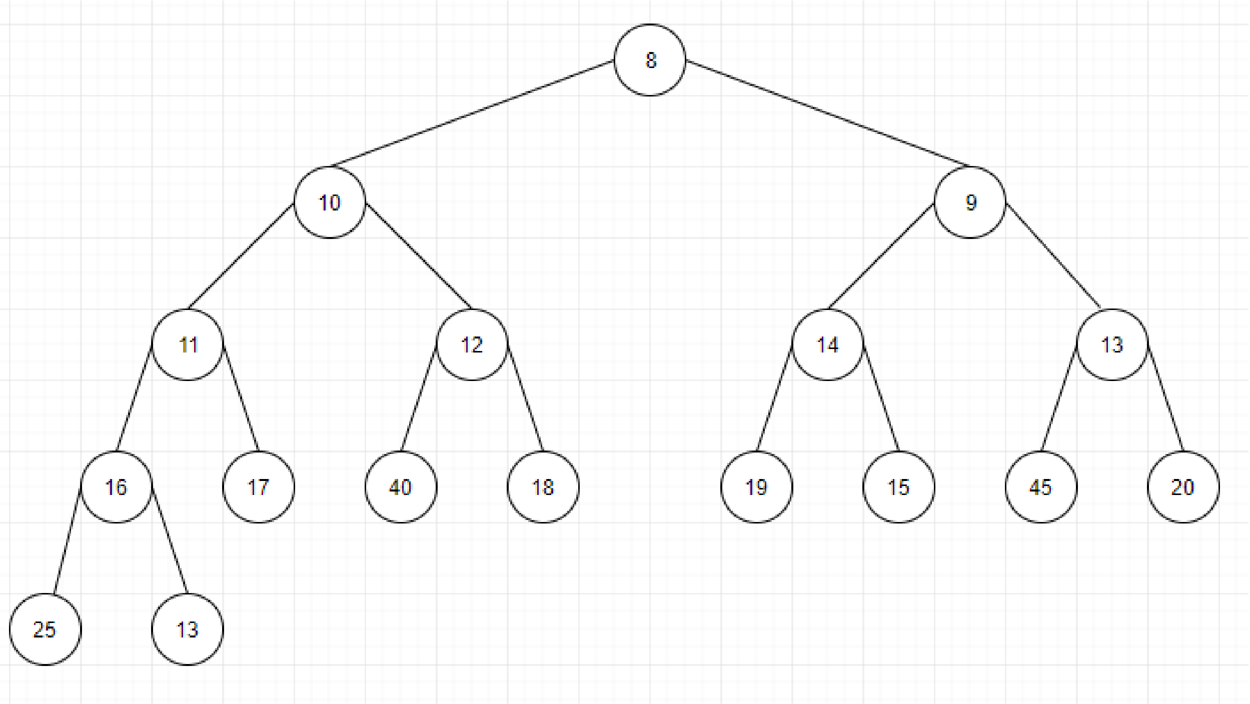


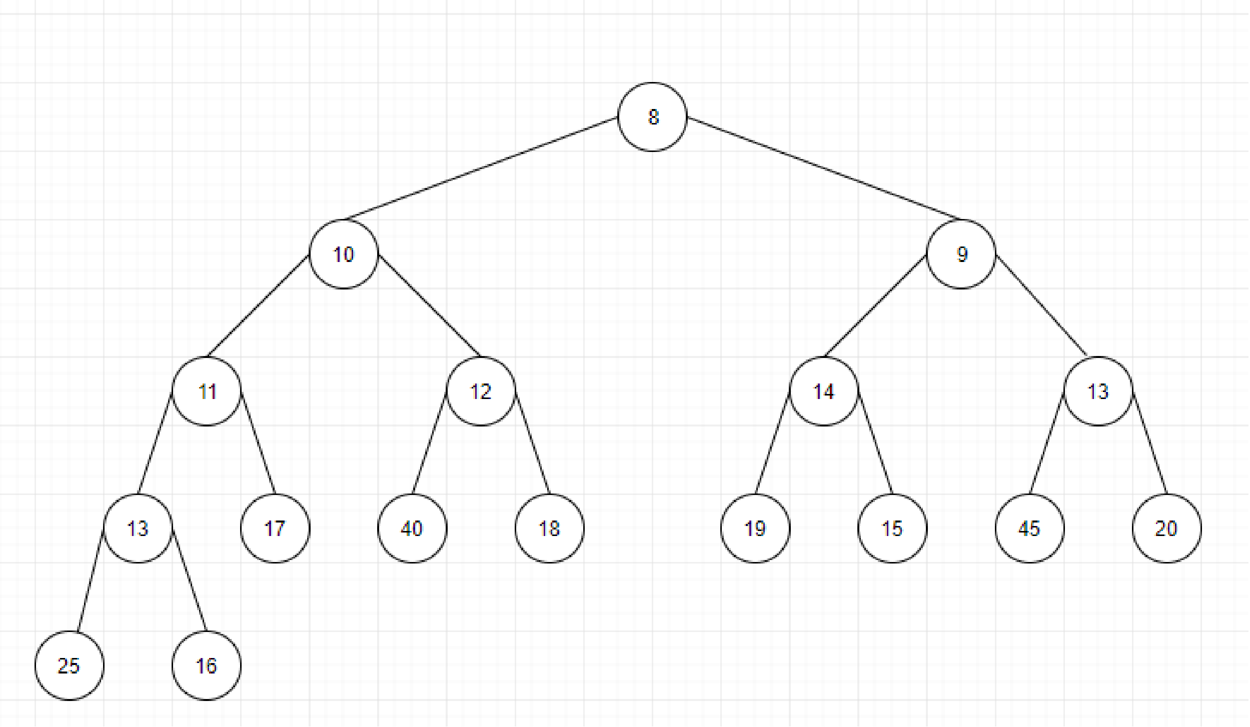
16.)Insert 11 and Swap



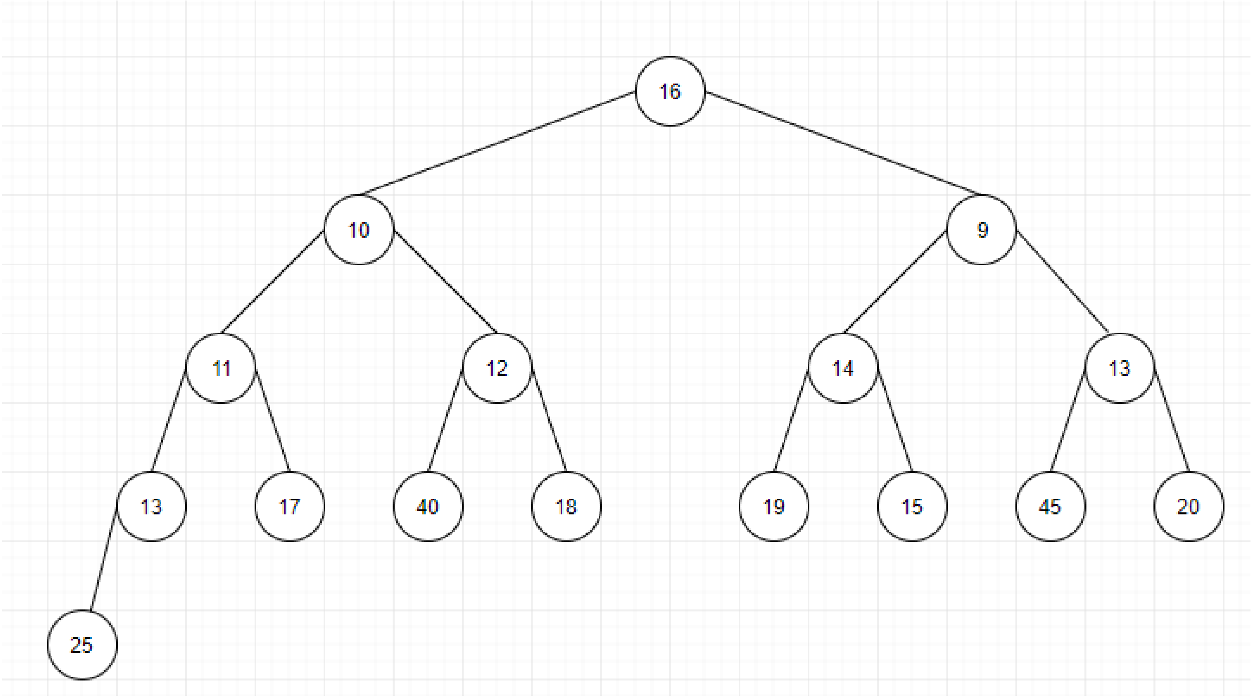


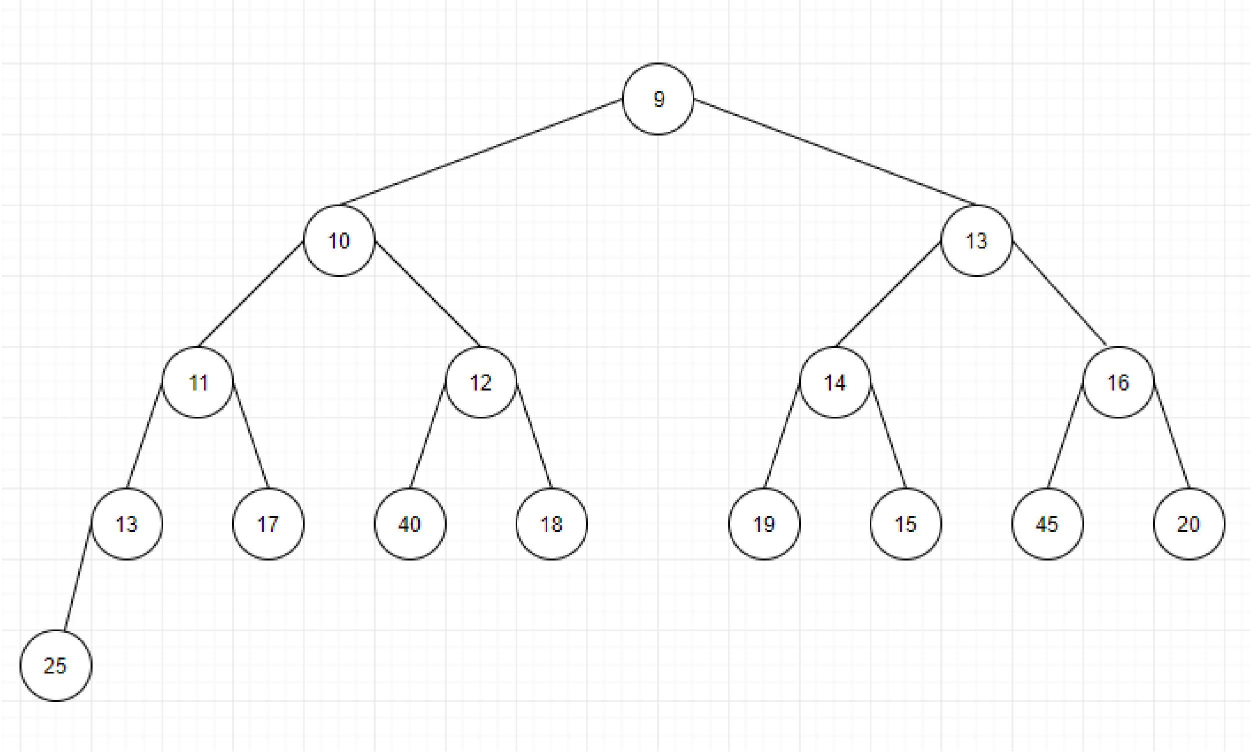
17.)Insert 13 and Swap and final Tree



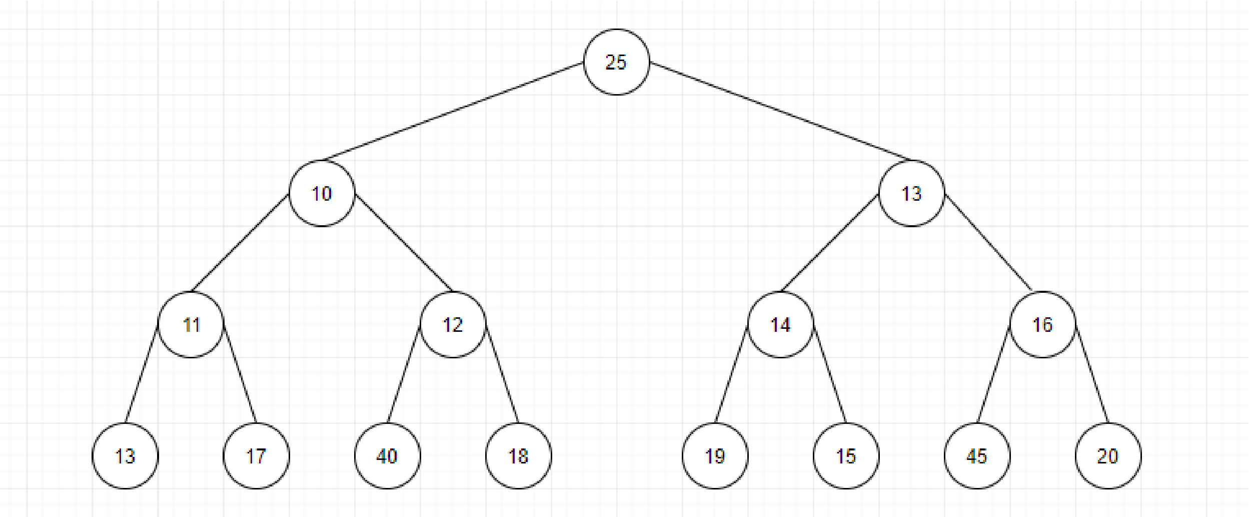


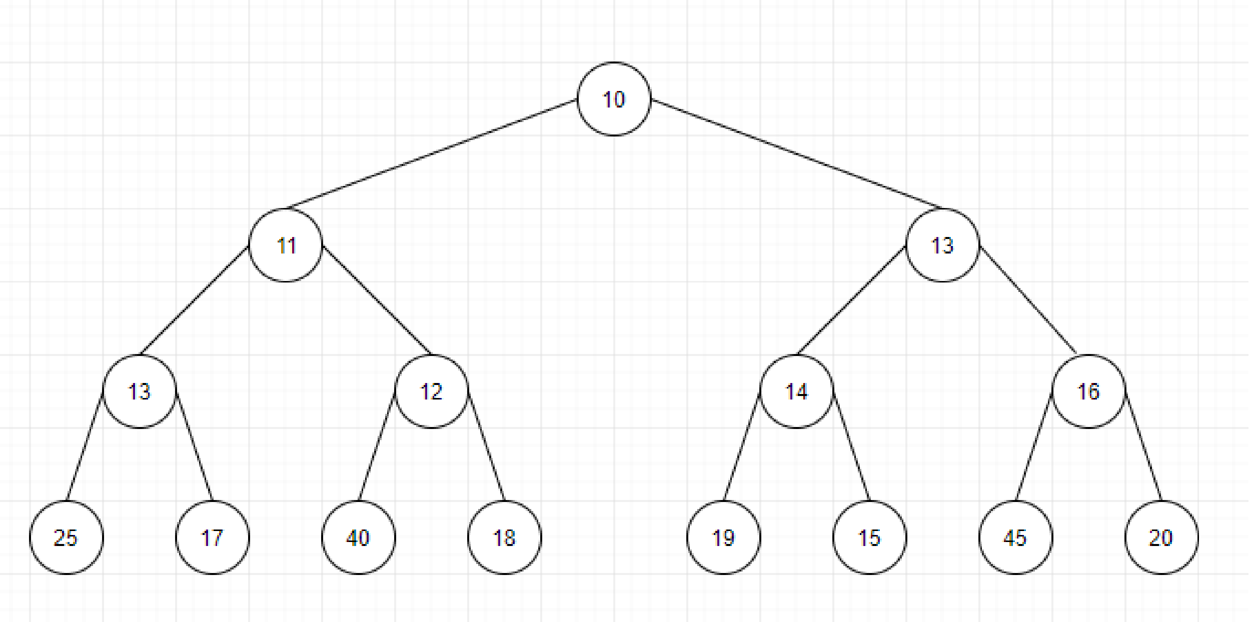
18.)RemoveMin and DownHeap





19.)Remove min and downheap





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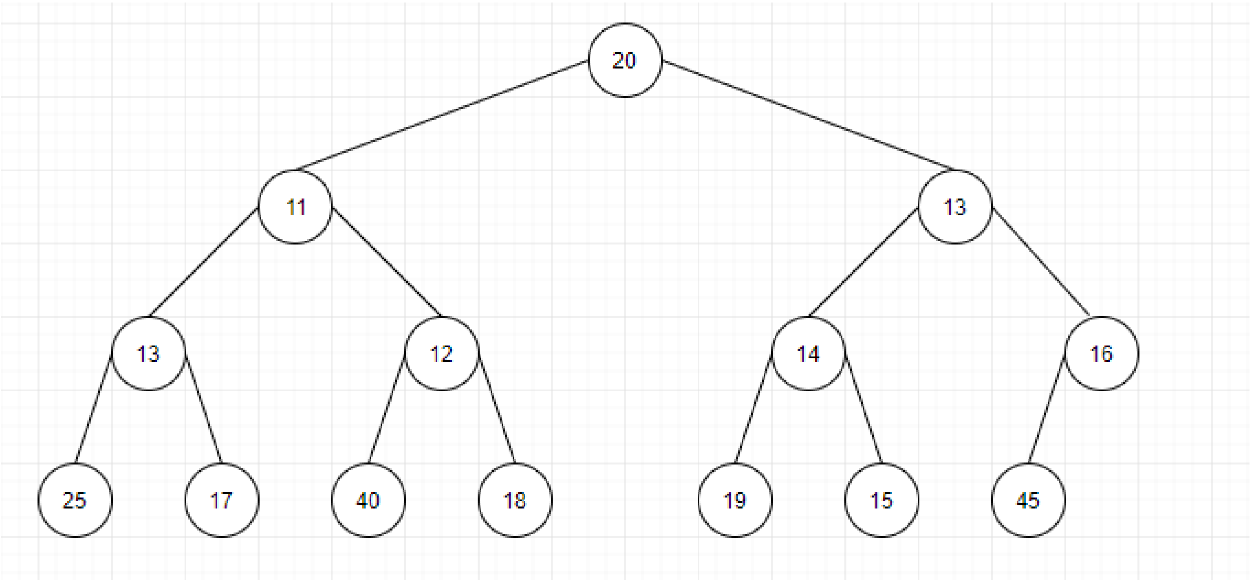

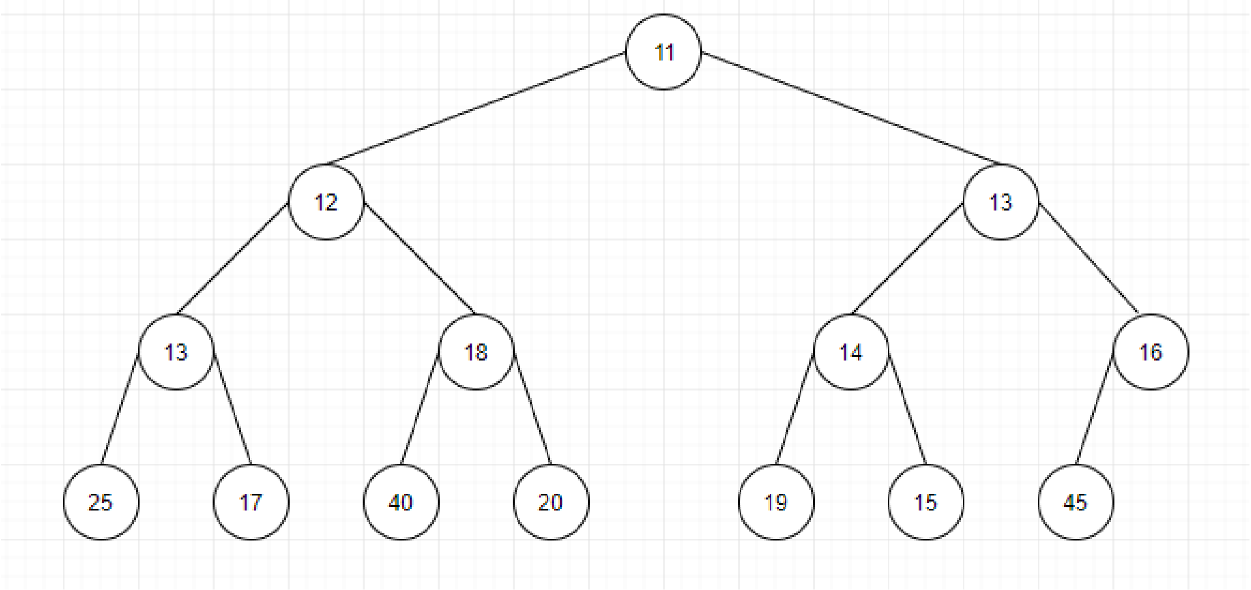

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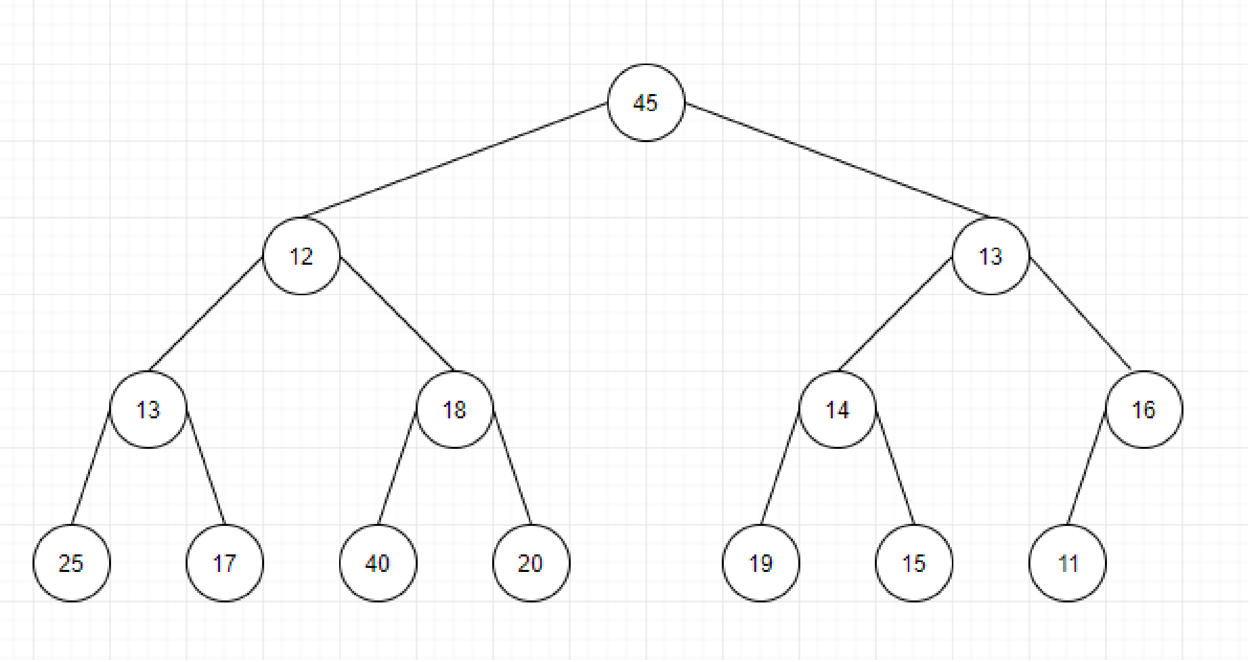
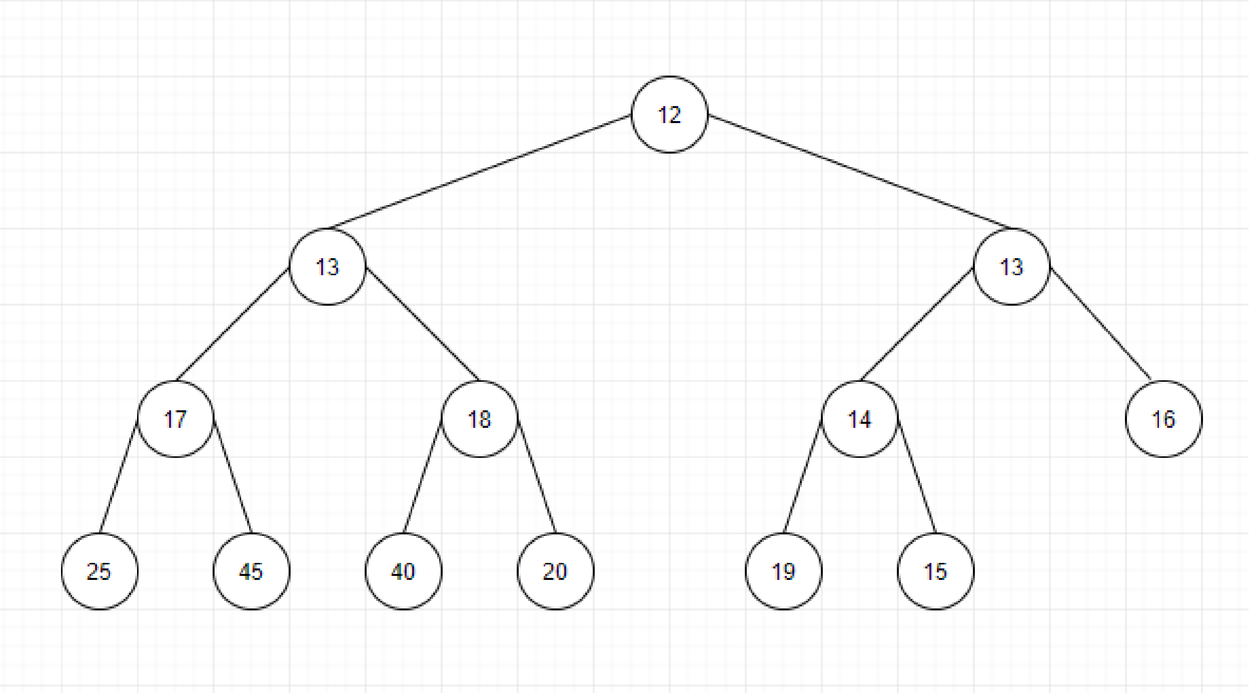
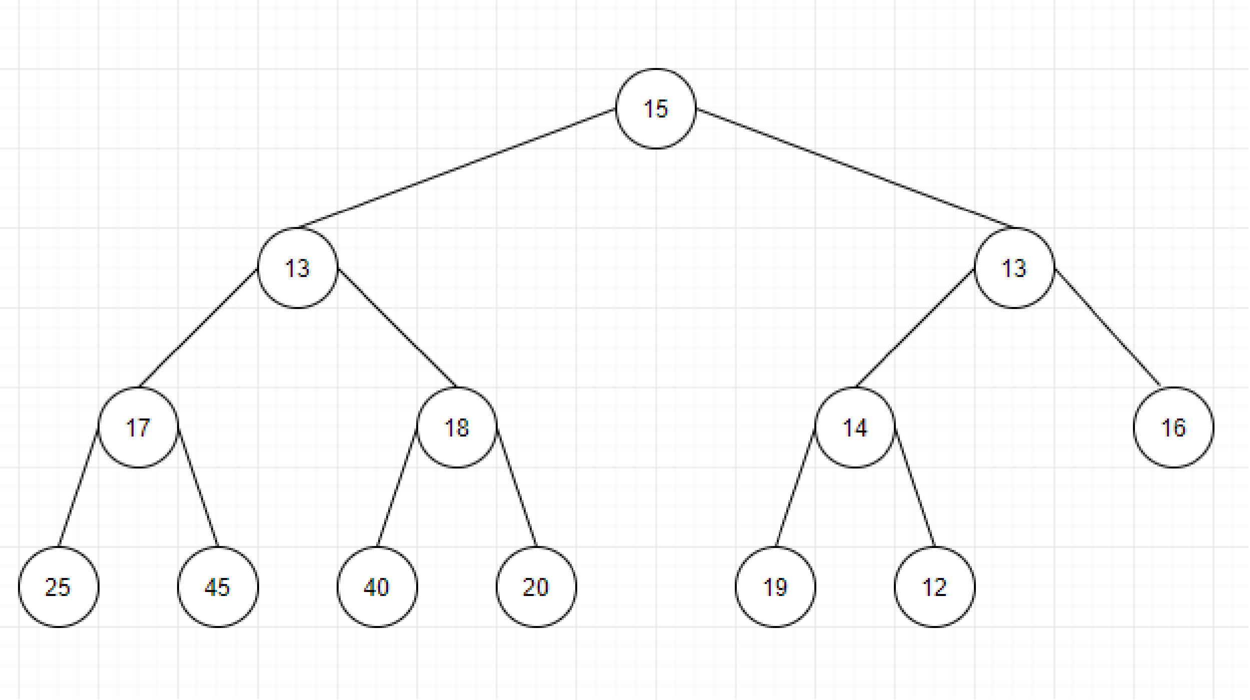




22.)Remove Min and Swap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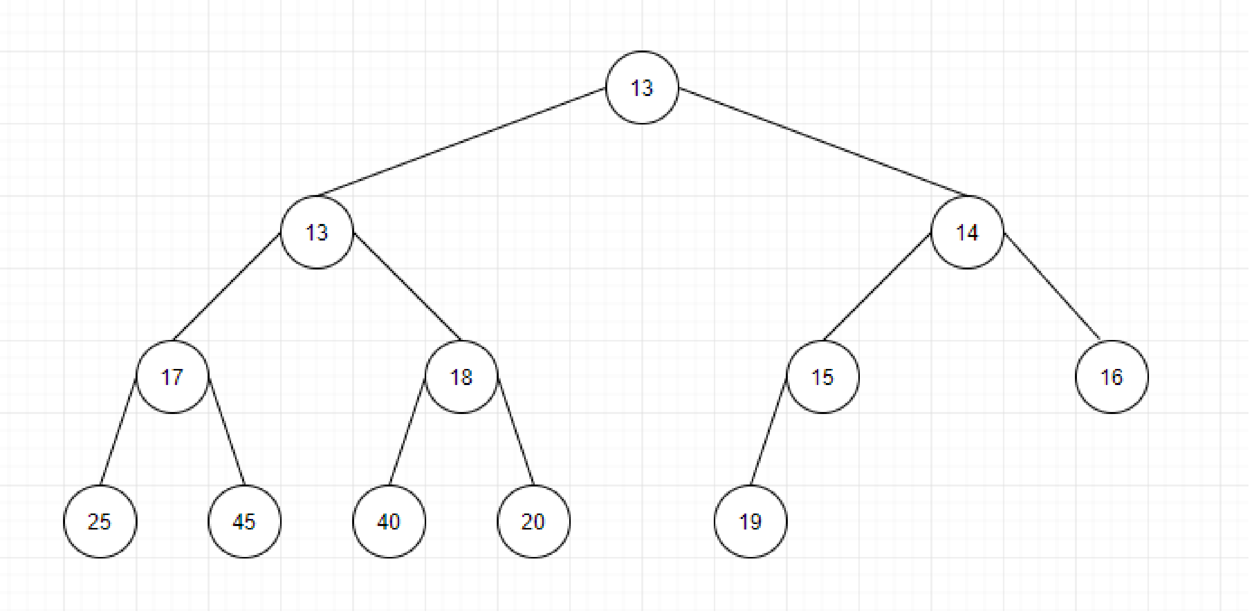
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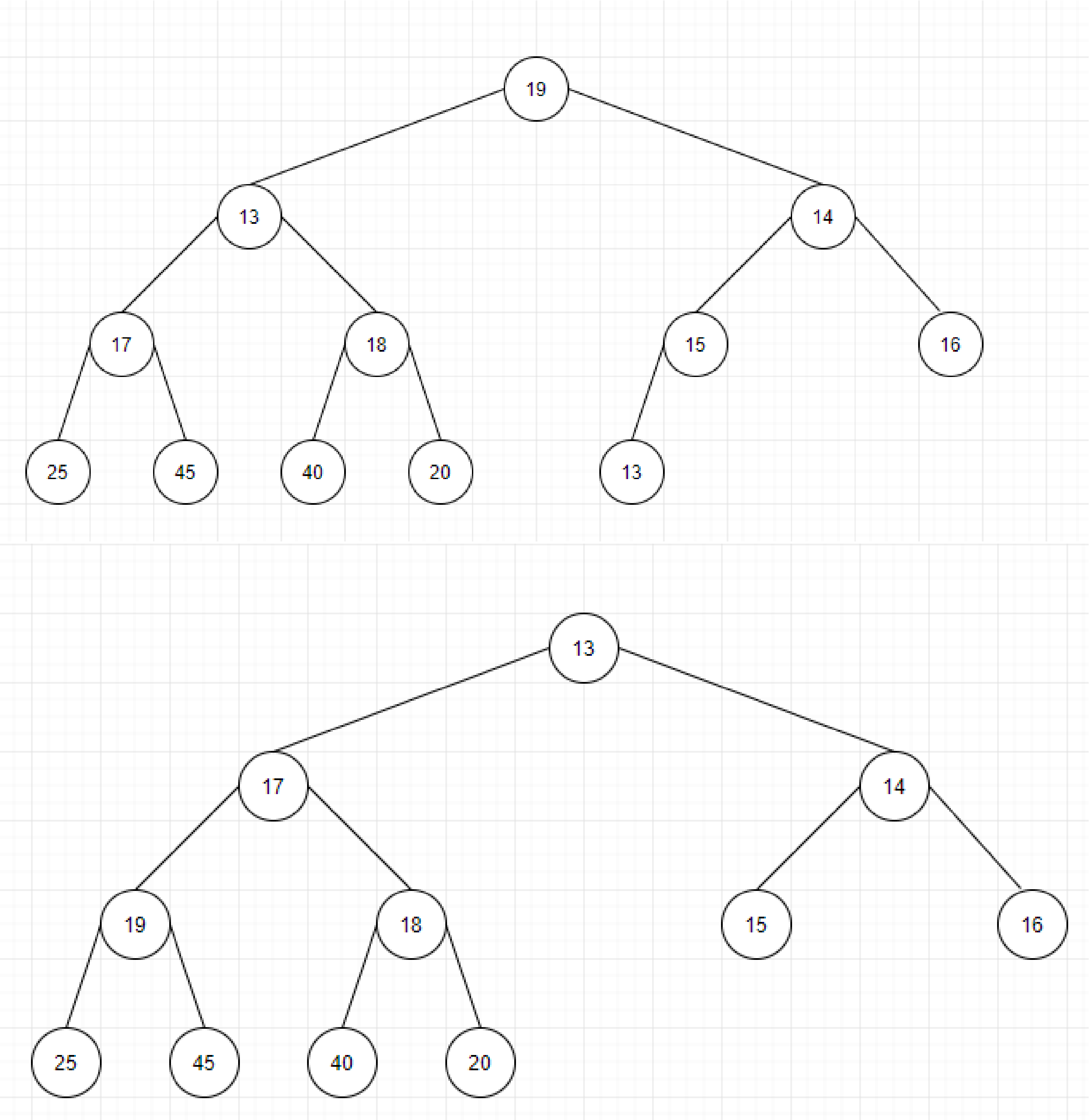
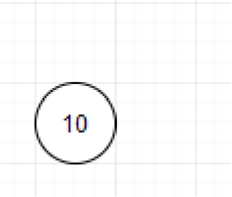
23.)Remove Min and Swap / Final Tree

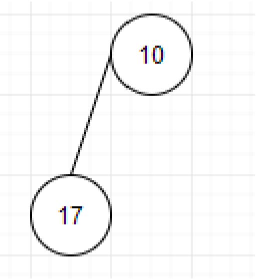


Question 5)

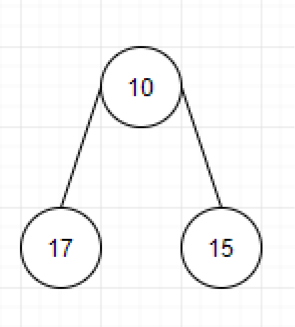
24.)Insert 10



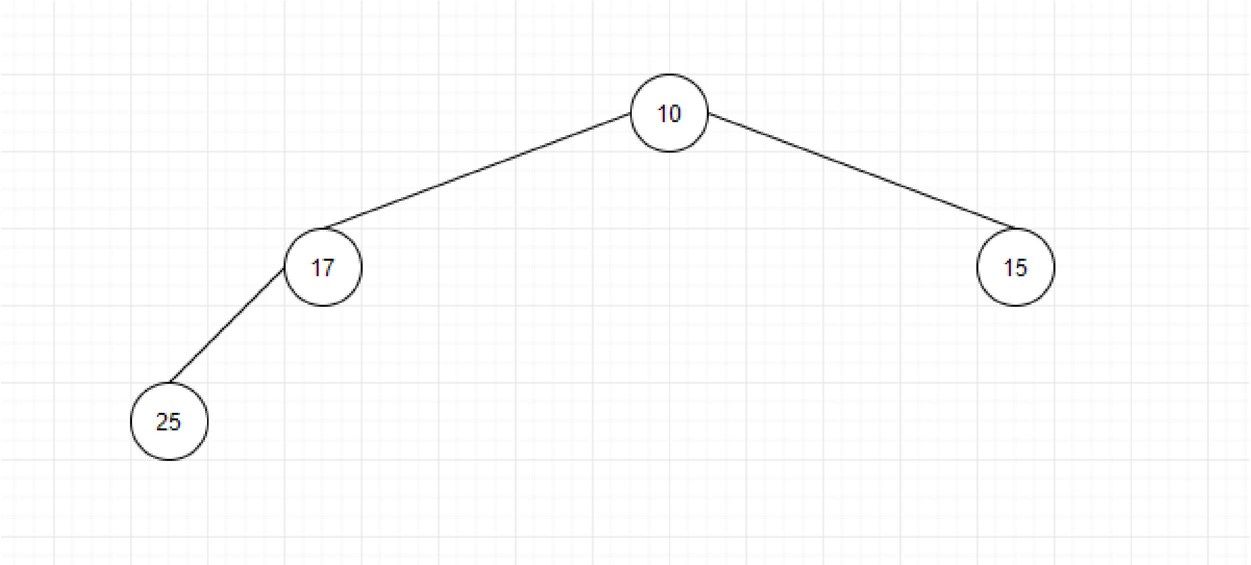
25.)Insert 17



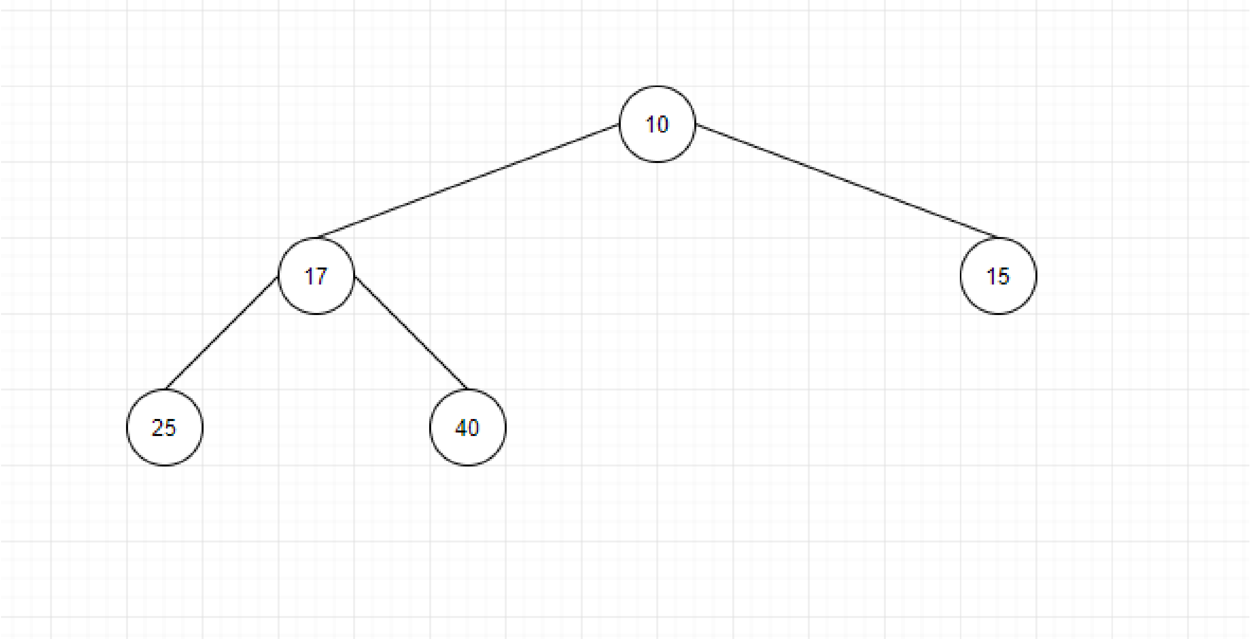
26.)Insert 15



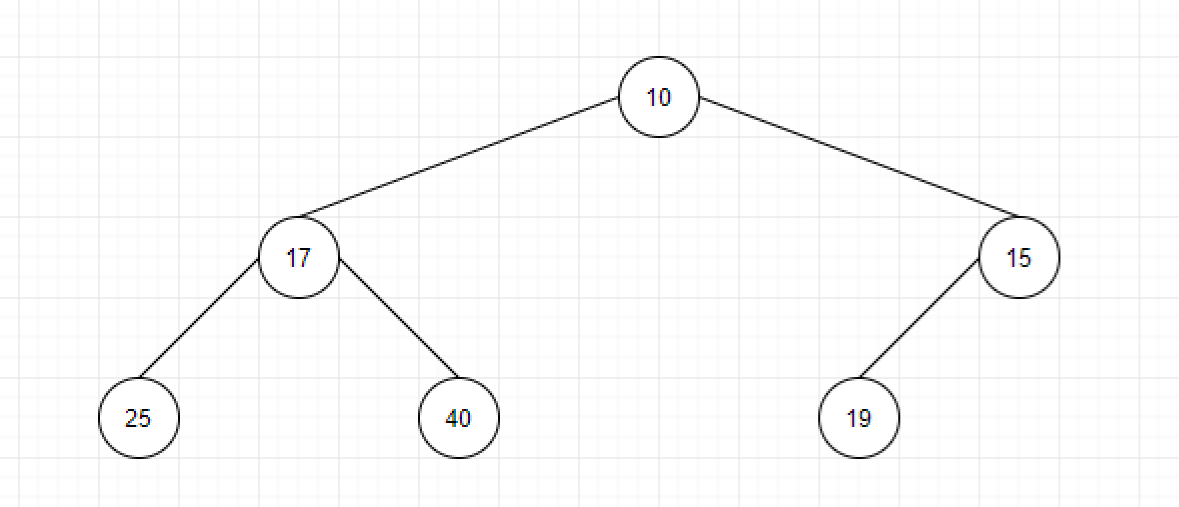
27.)Insert 25



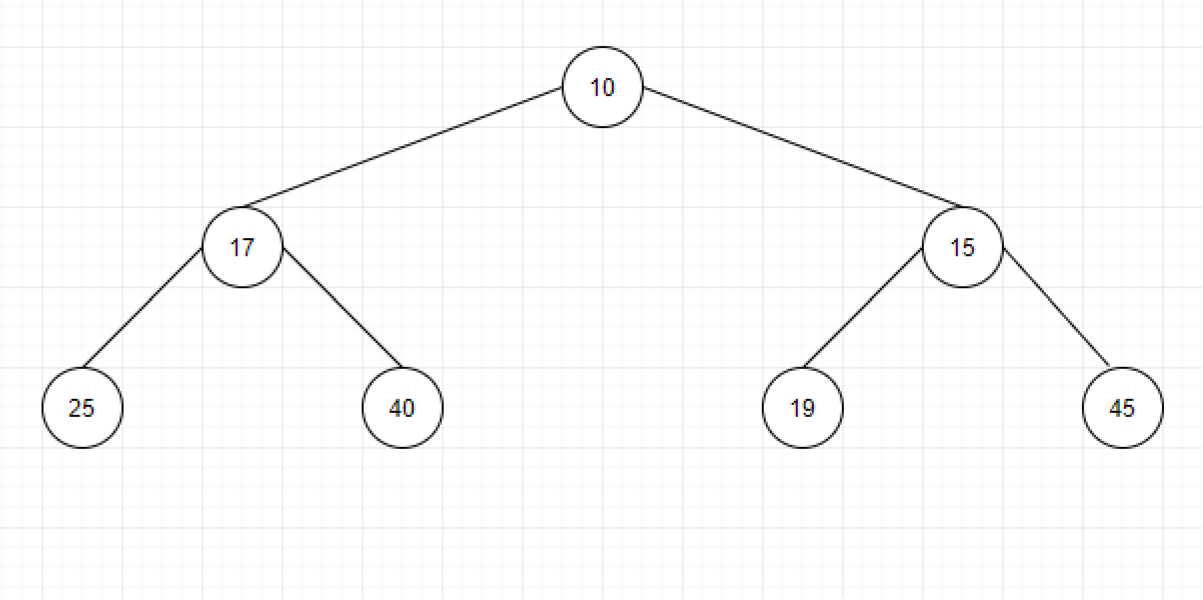
28.)Insert 40



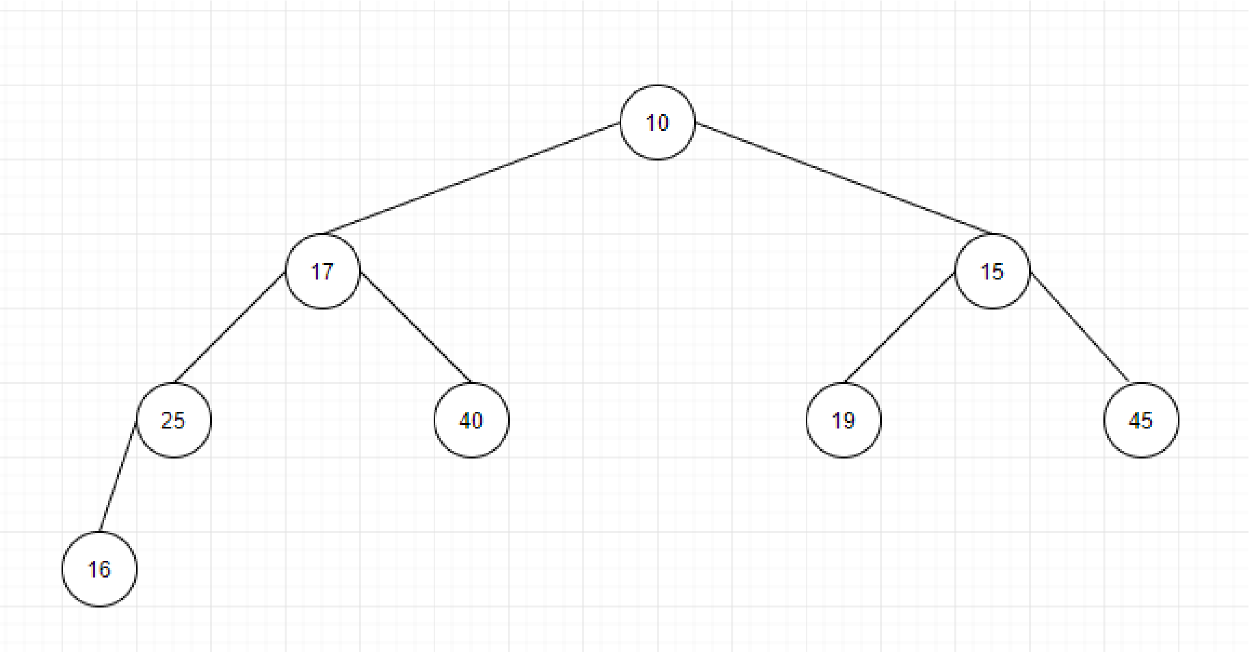
29.)Insert 19

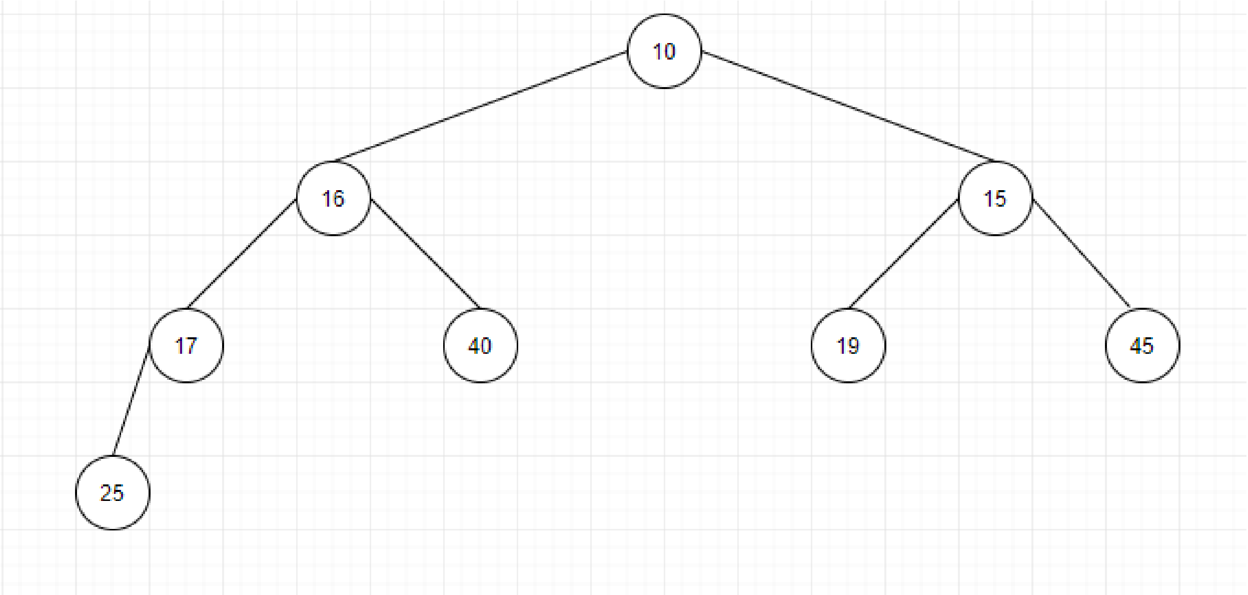


30.)Insert 45

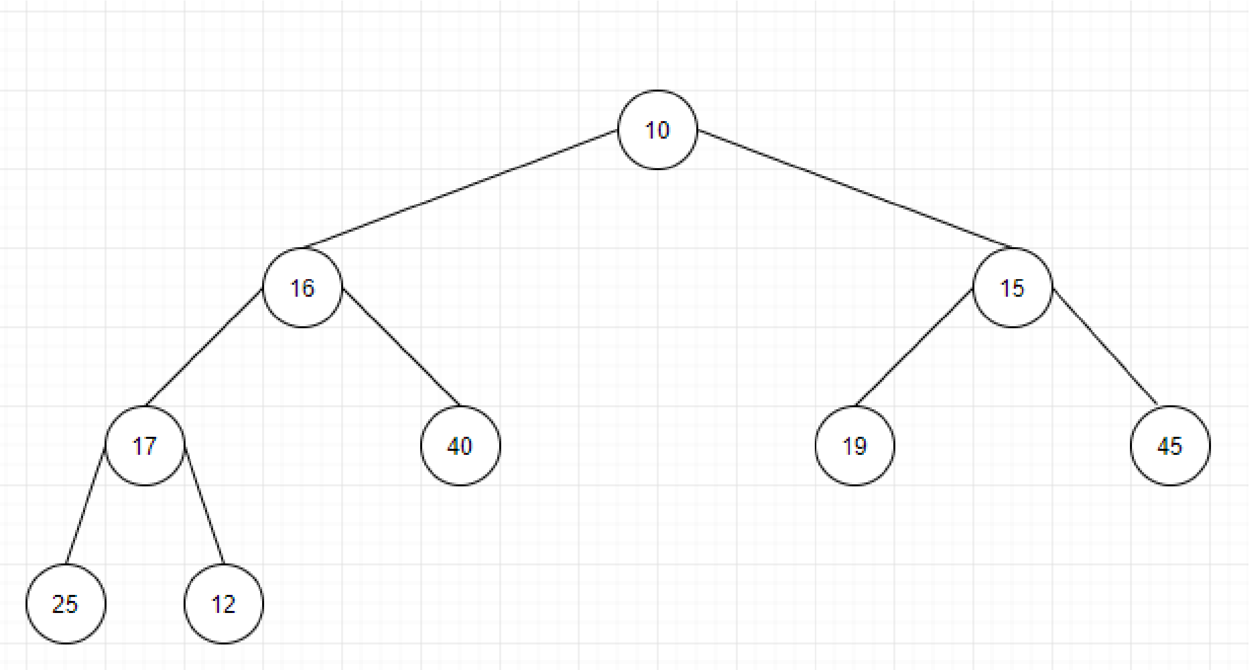


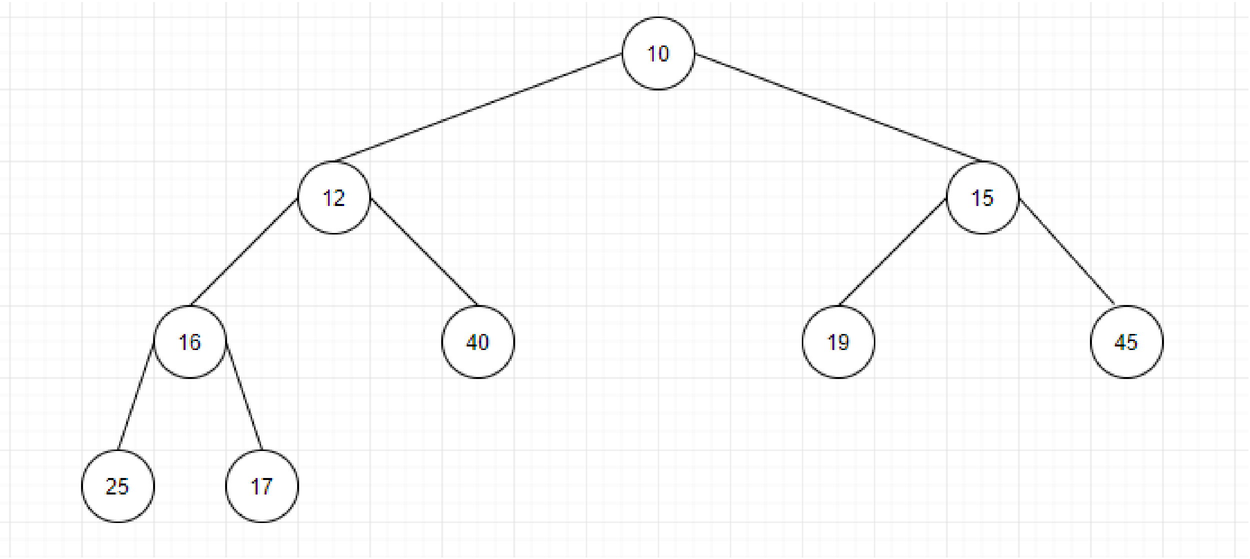
31.)Insert 16 and swap



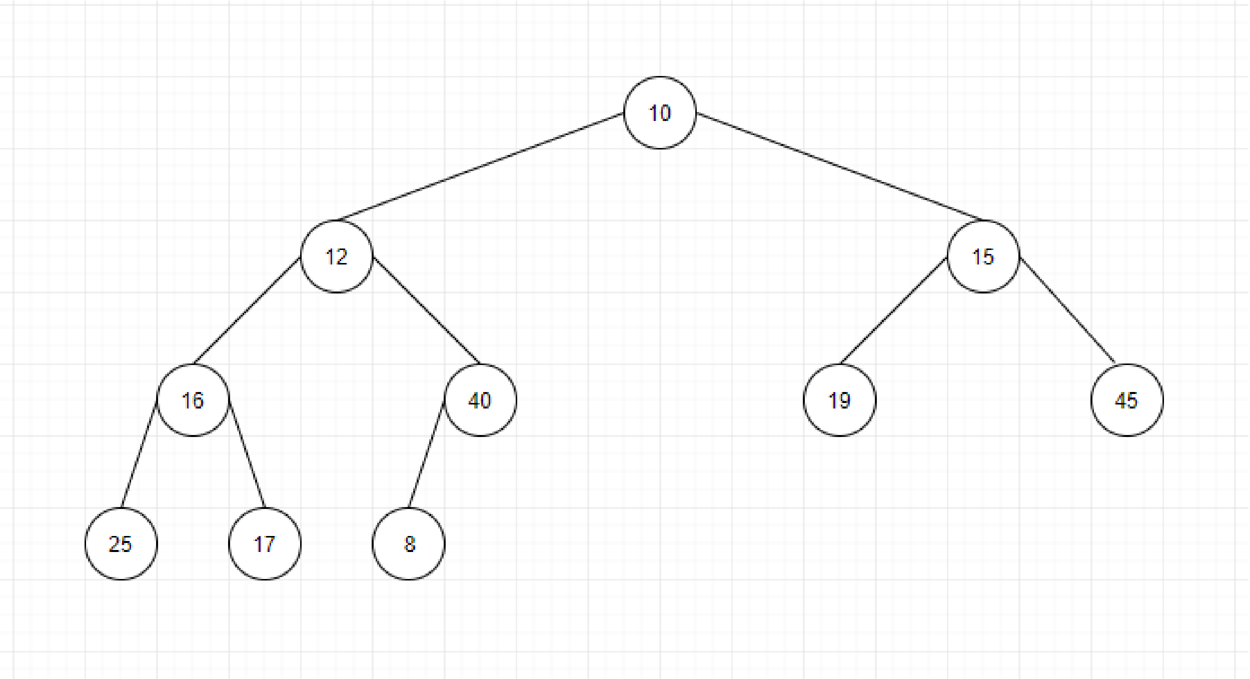


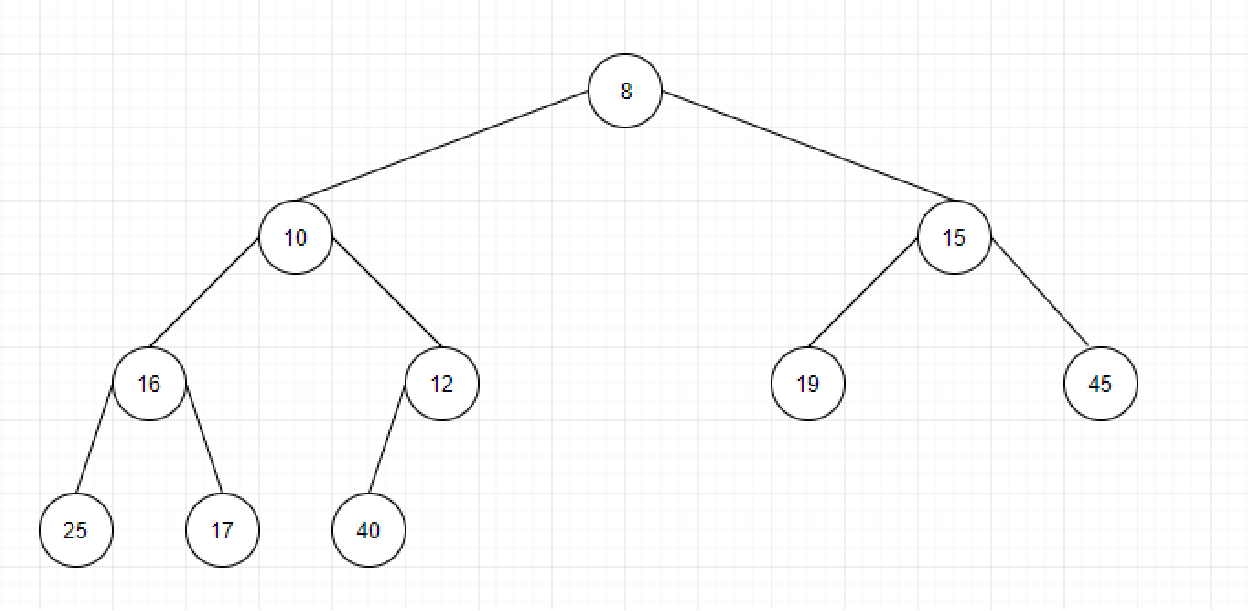
32.)Insert 12 and Swap



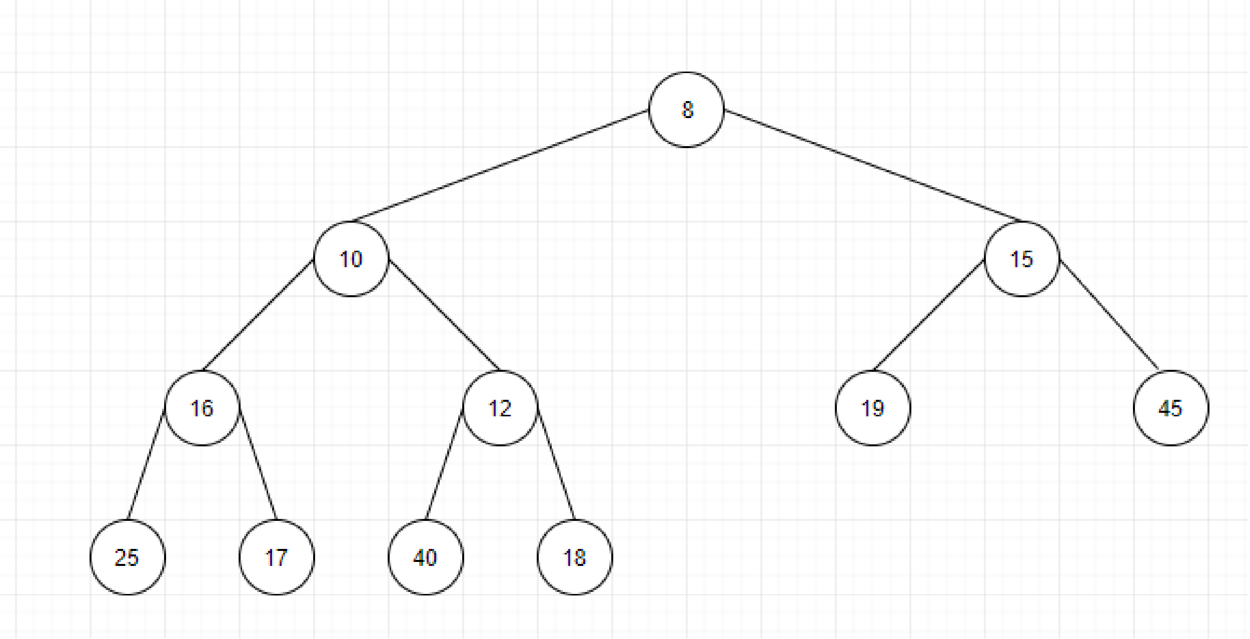


33.) Insert 8 and Swap

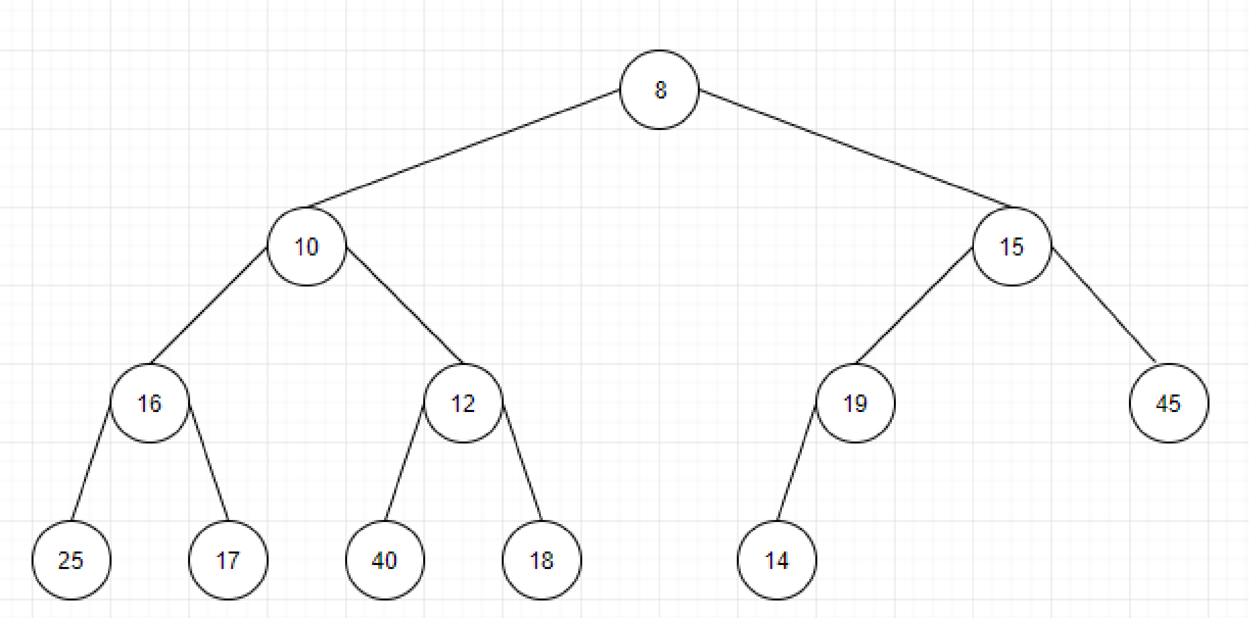


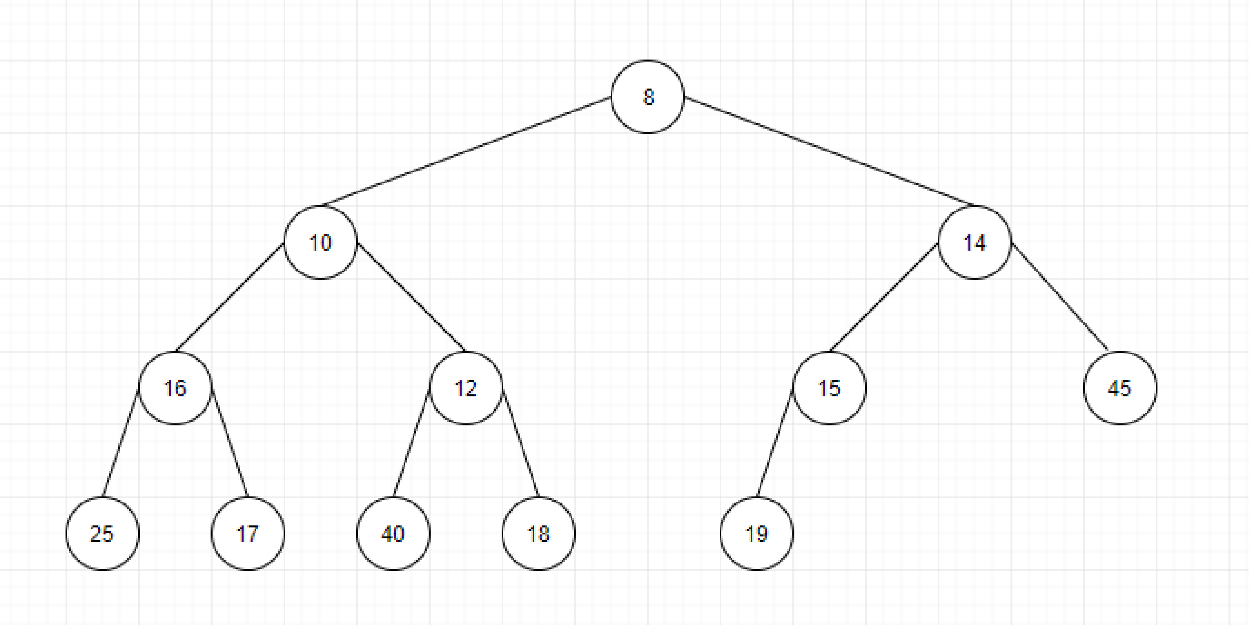


34.)Insert 18

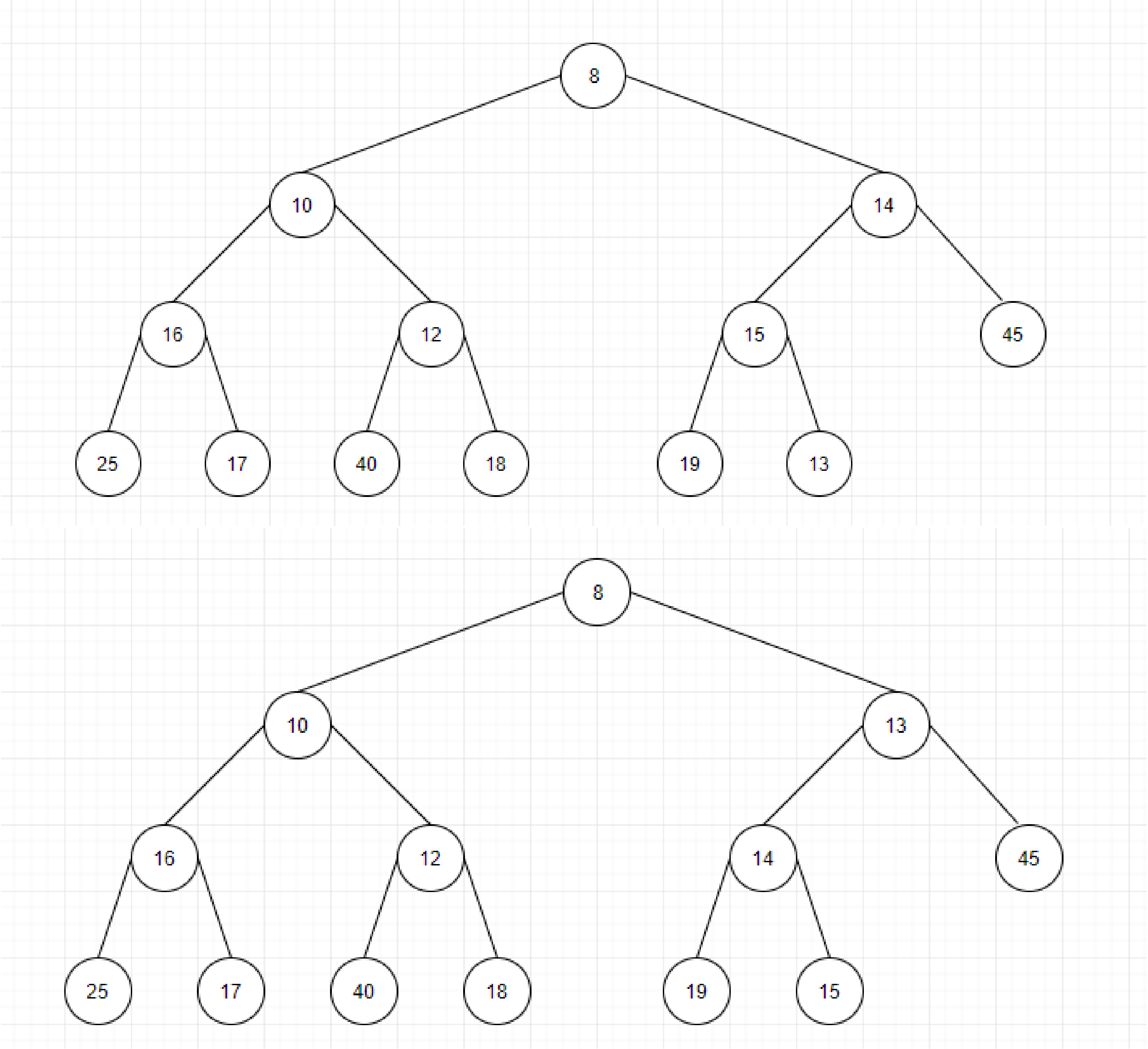


35.)Insert 14 and swap

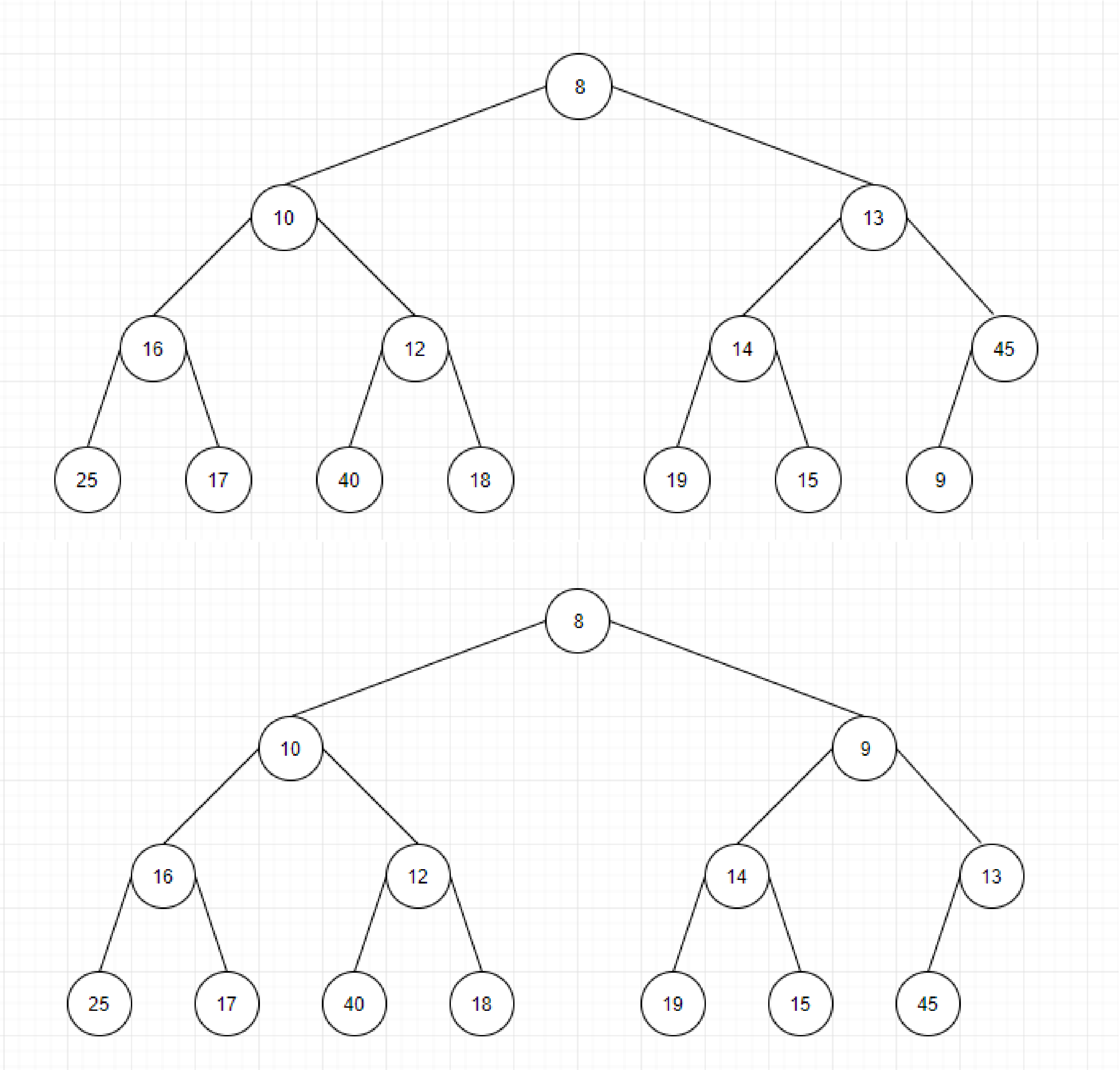




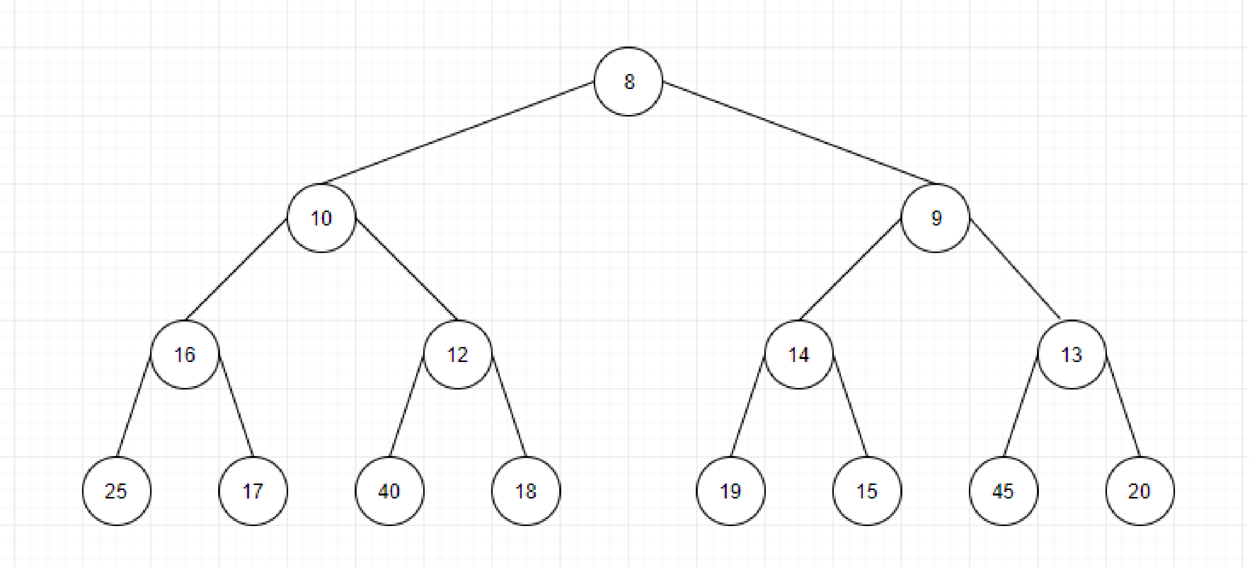
36.)Insert 13 and swap



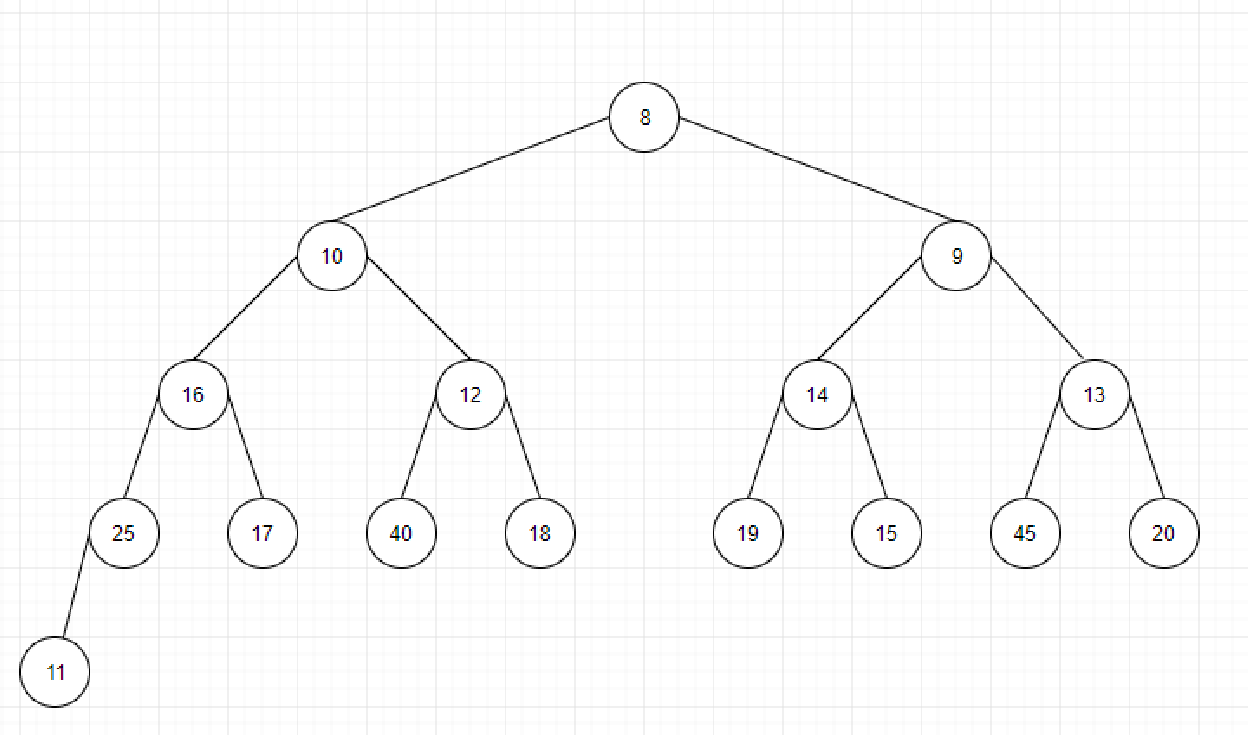
37.)Insert 9 and swap

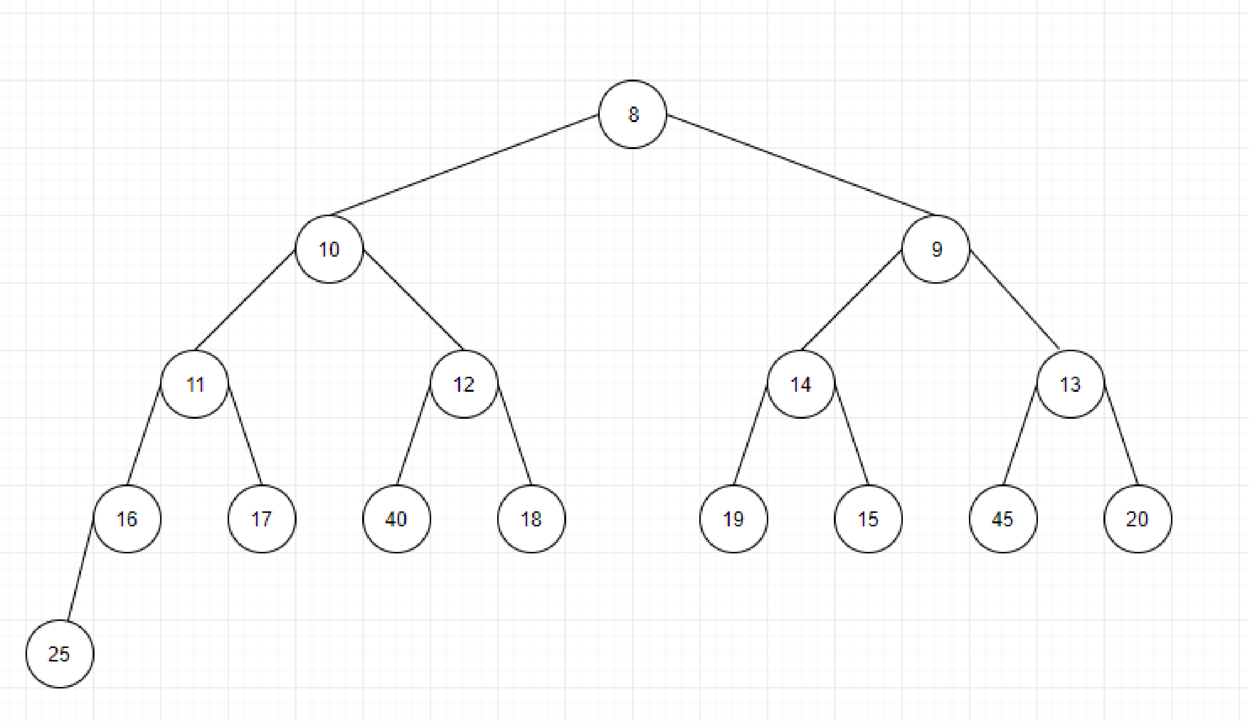


38.)Insert 20

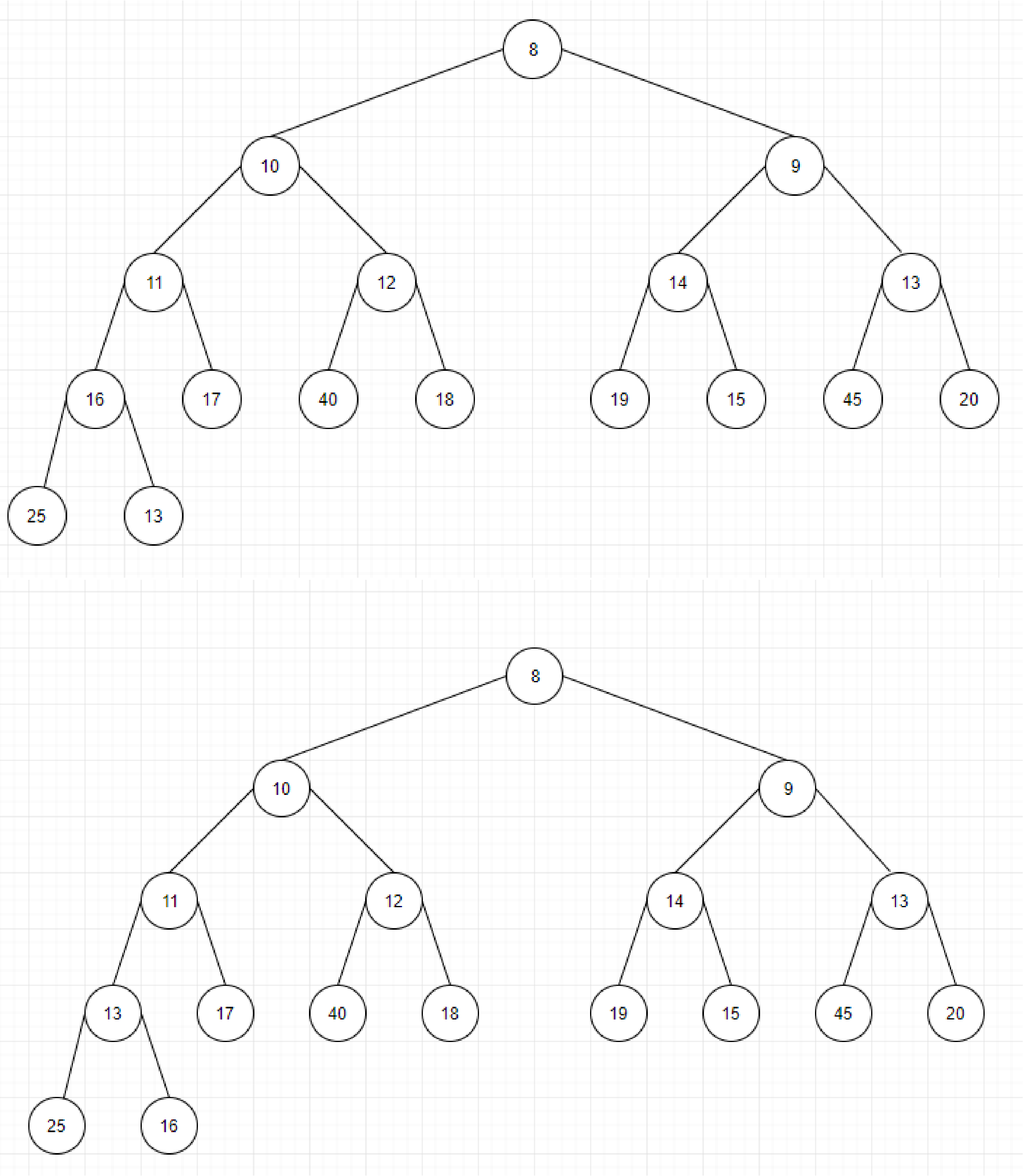


39.)Insert 11 and Swap

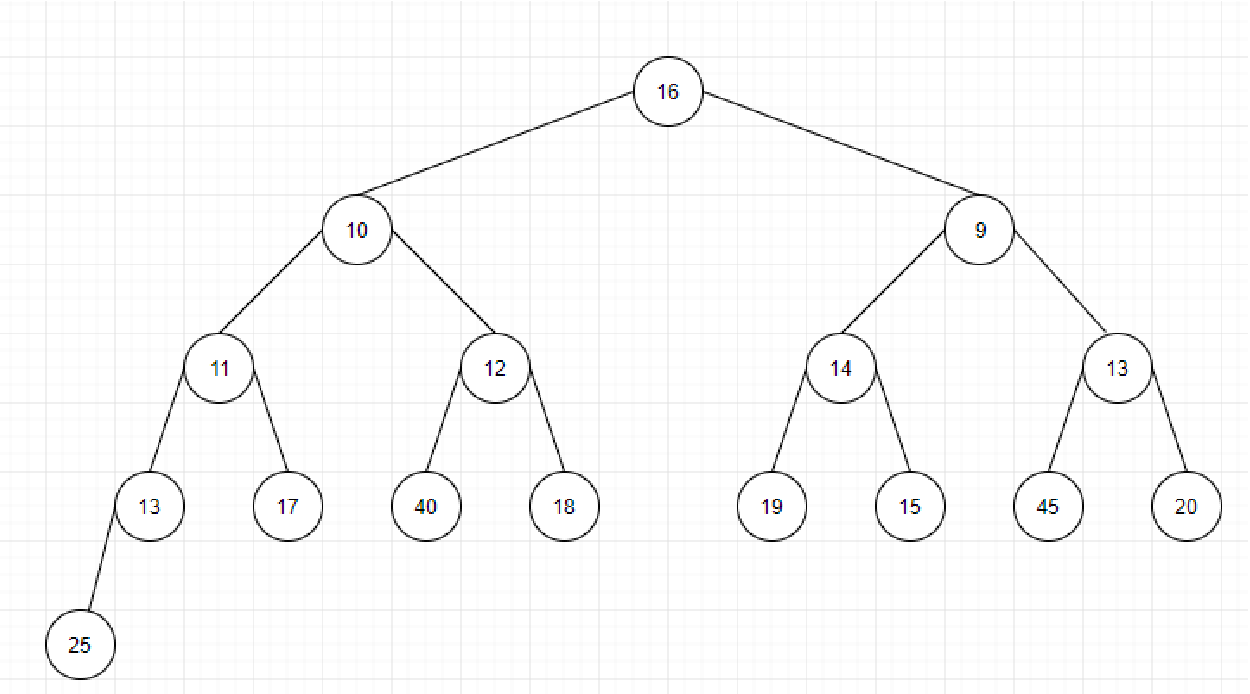


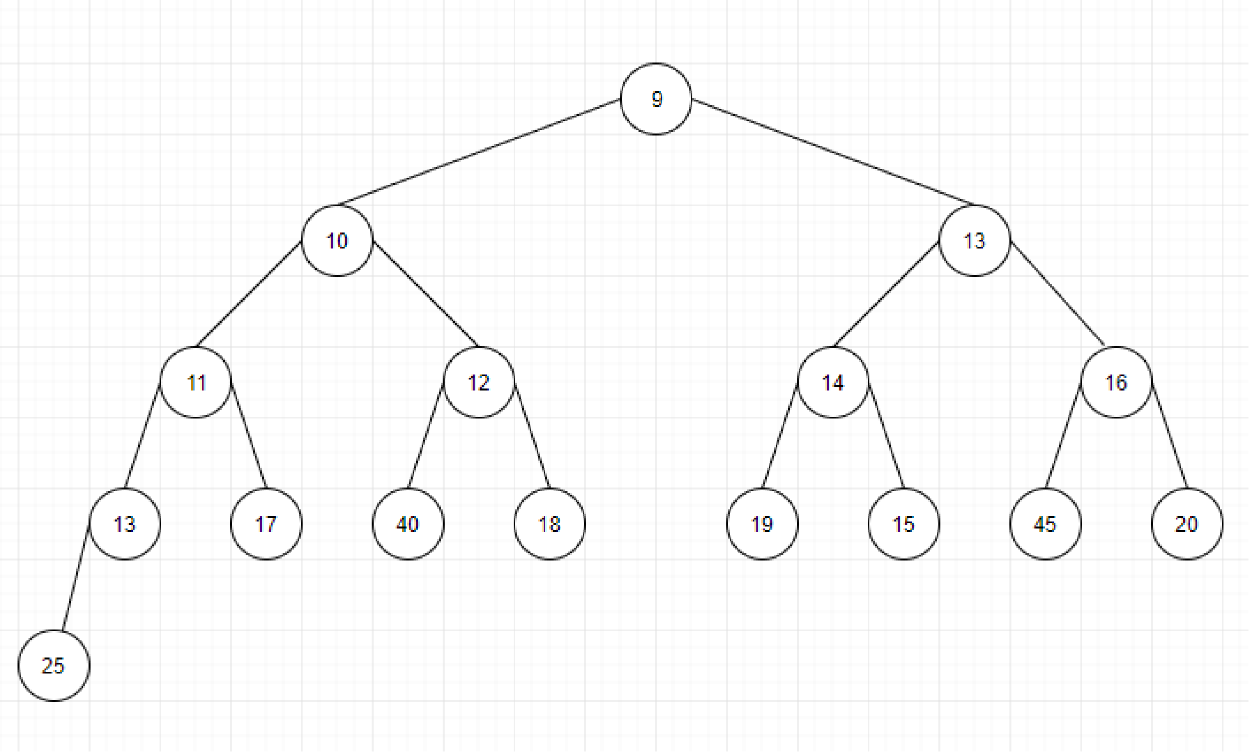


40.)Insert 13 and swap

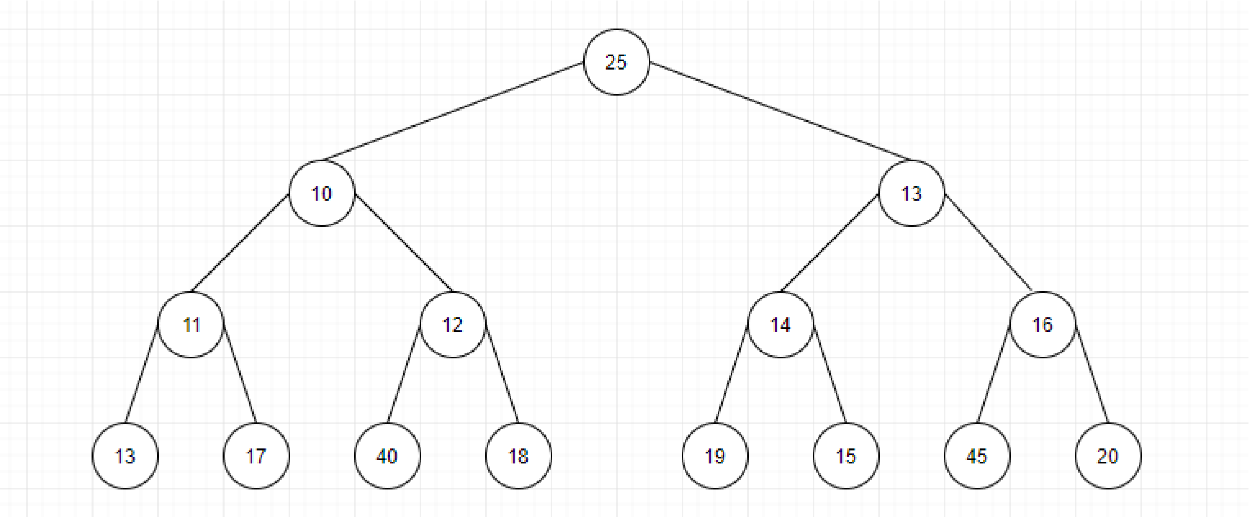


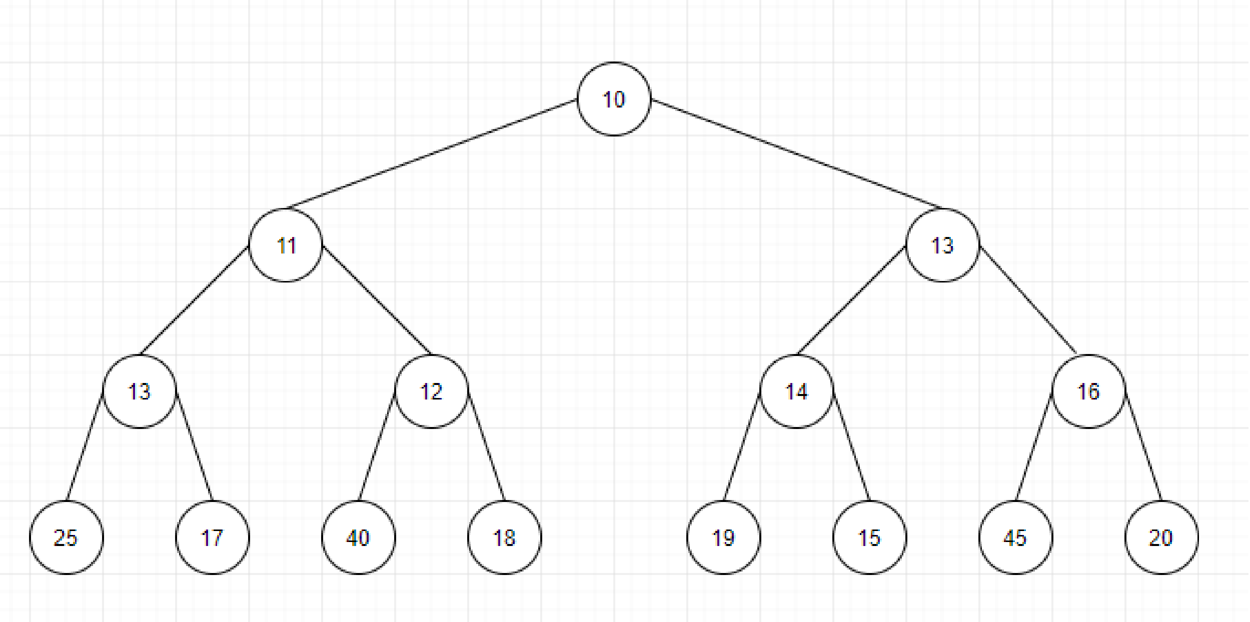
41.)RemoveMin and DownHeap



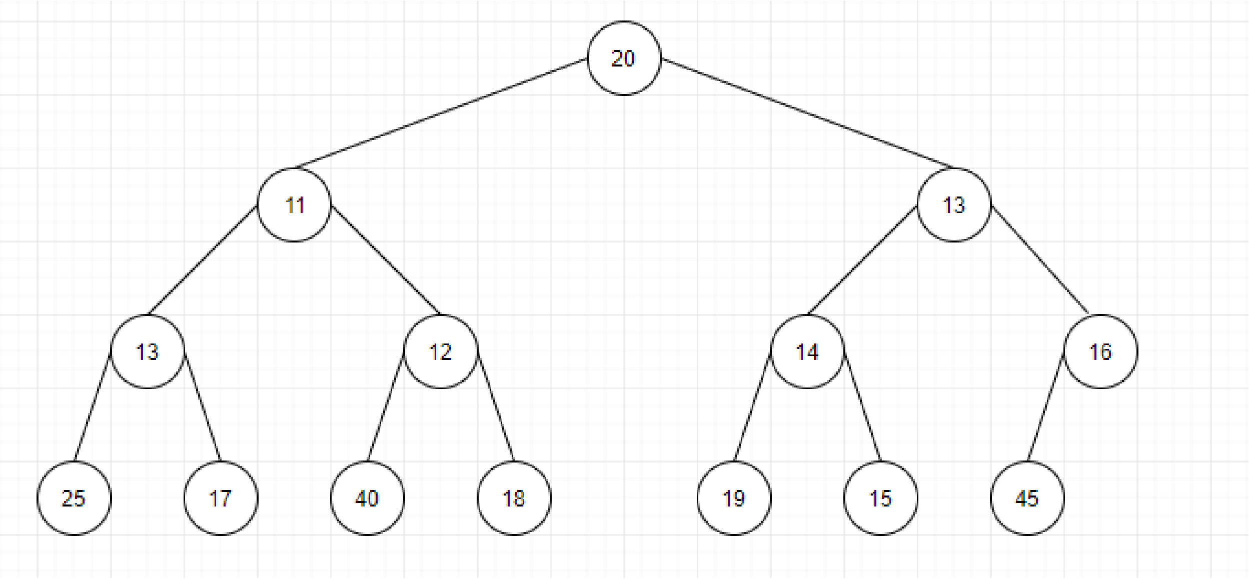


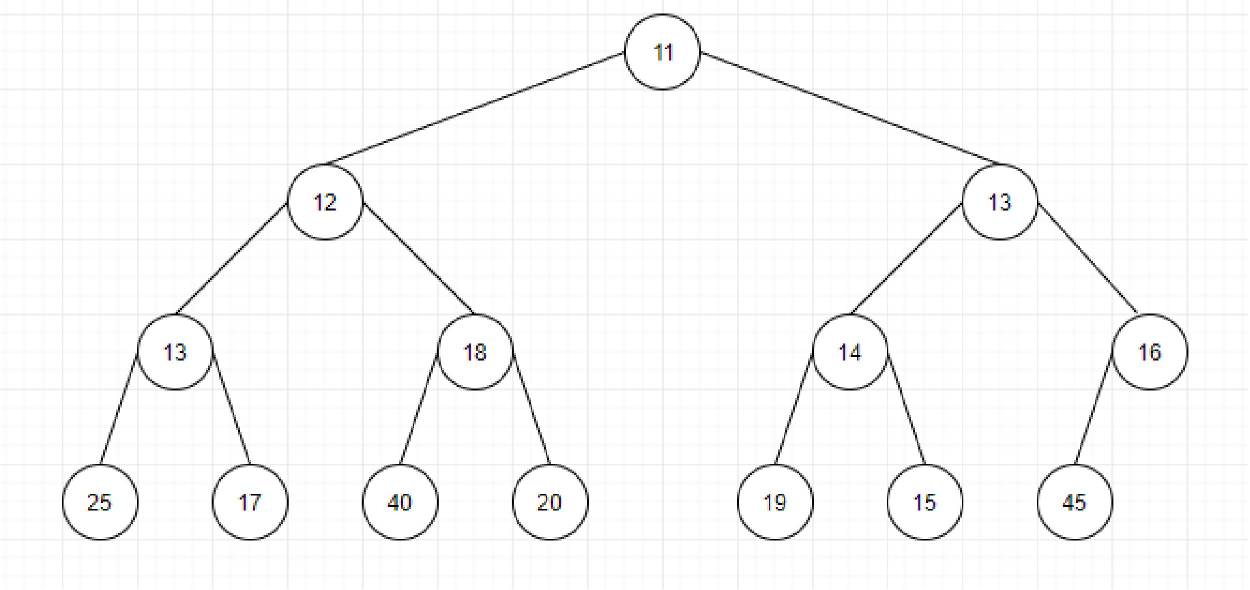
42.)Remove min and downheap



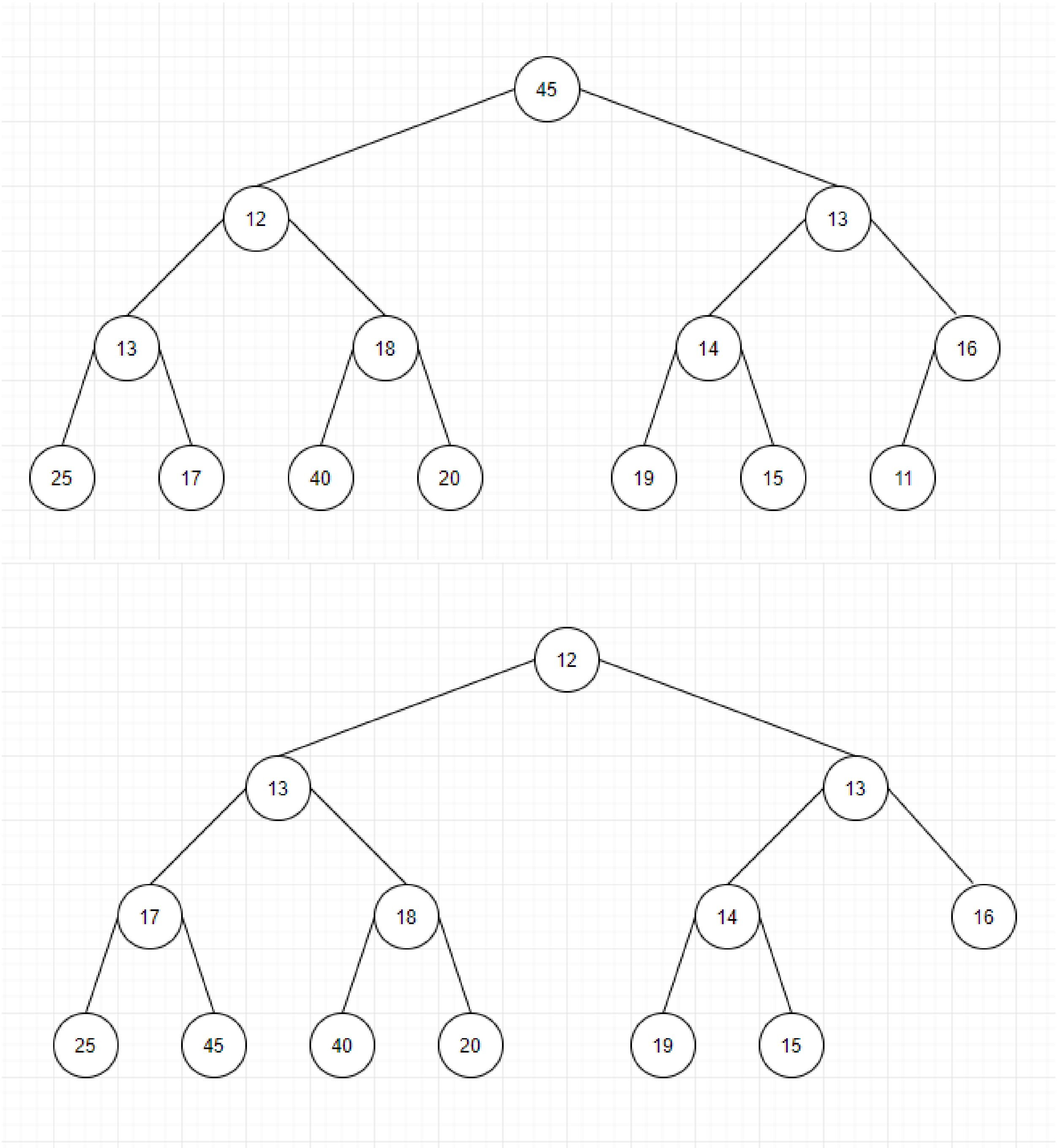


43.)Remove Min and DownHeap

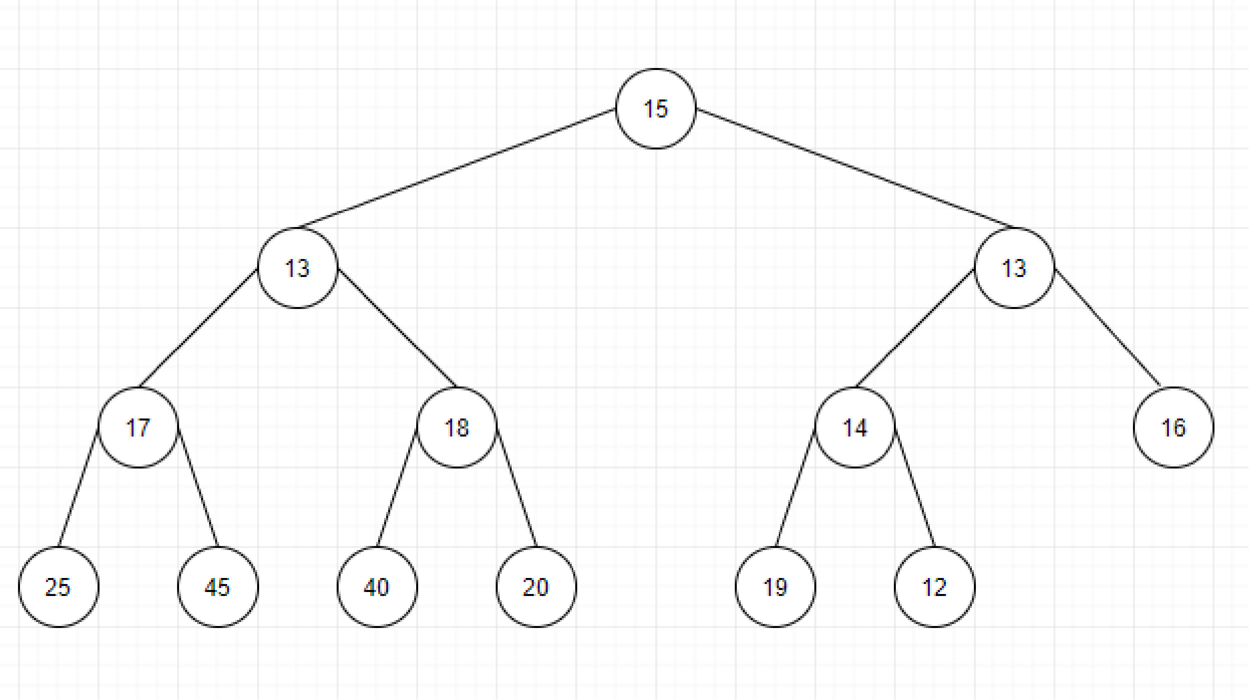




44.)Remove Min and DownHeap



45.)Remove Min and Swap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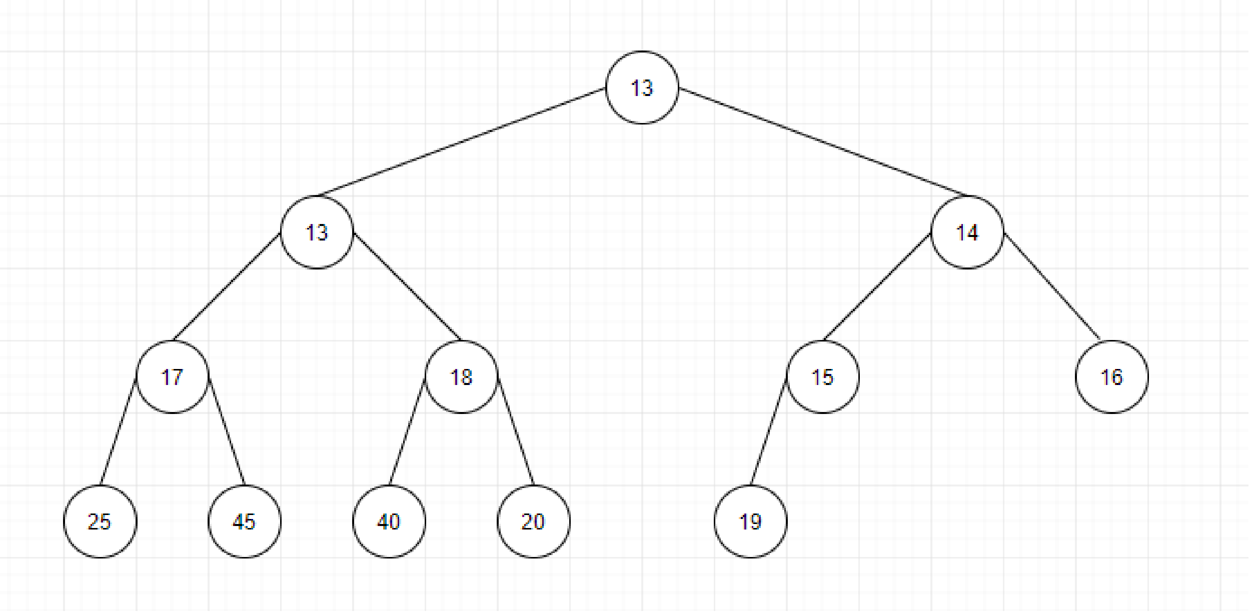
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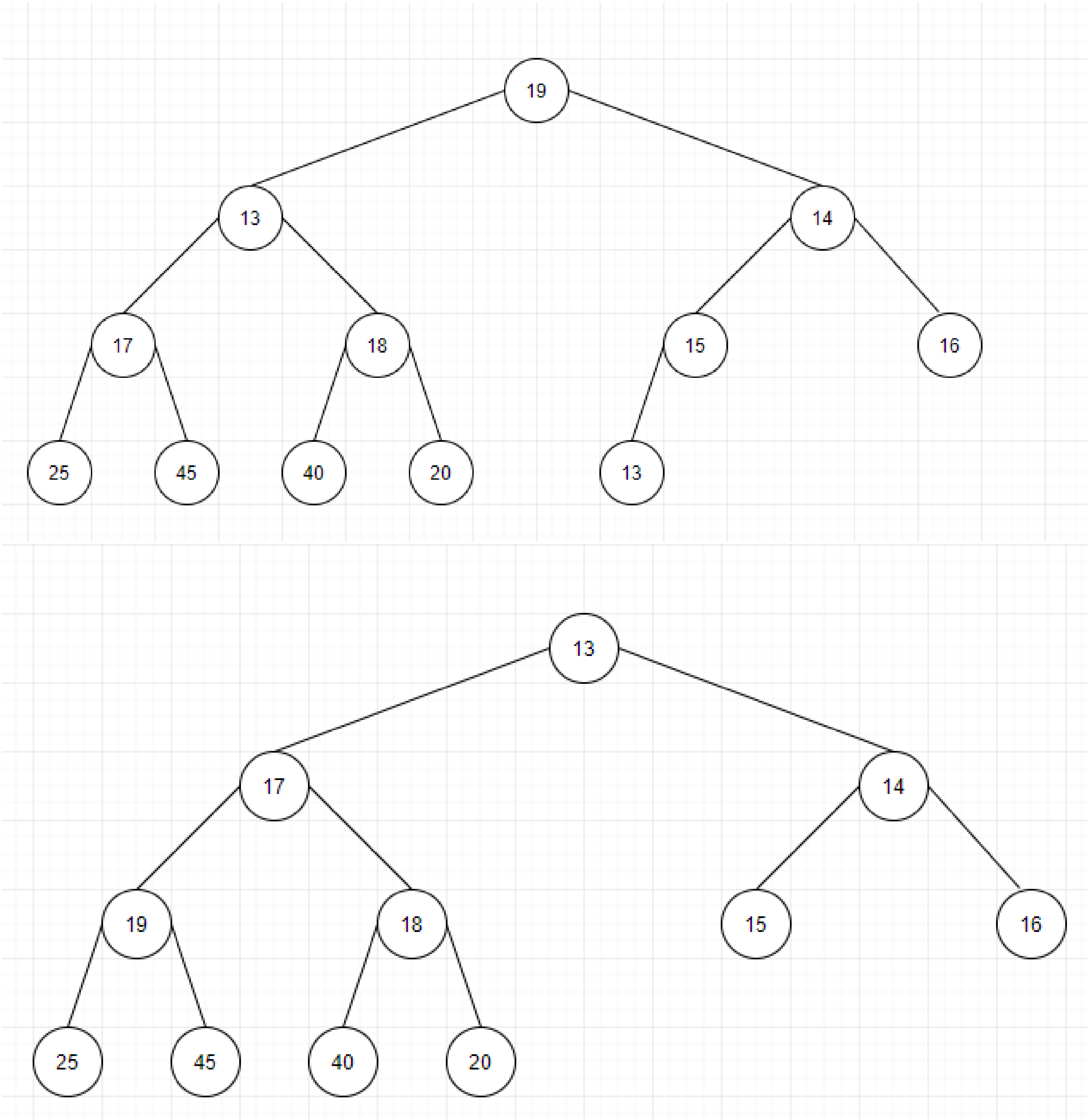
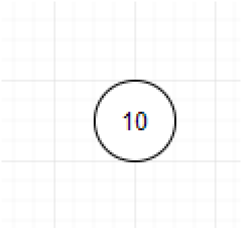
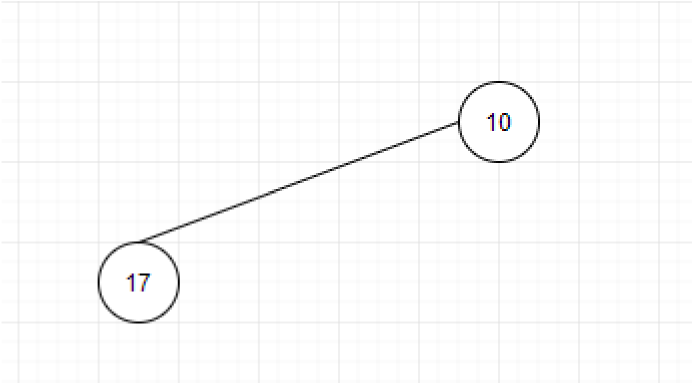
46.)Remove Min and Swap / Final Tree



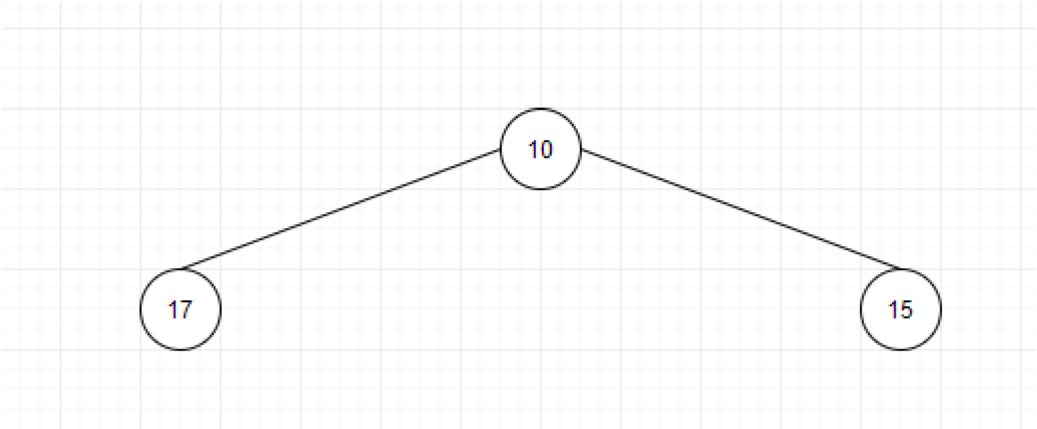
1.) Insert 10



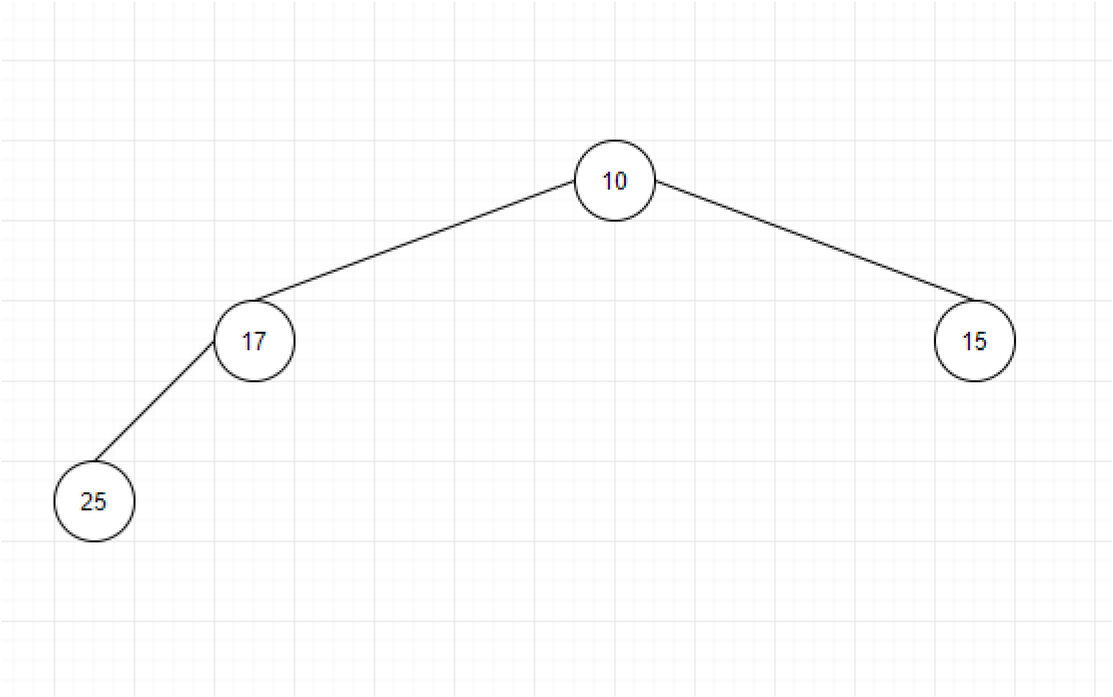
2.) Insert 17



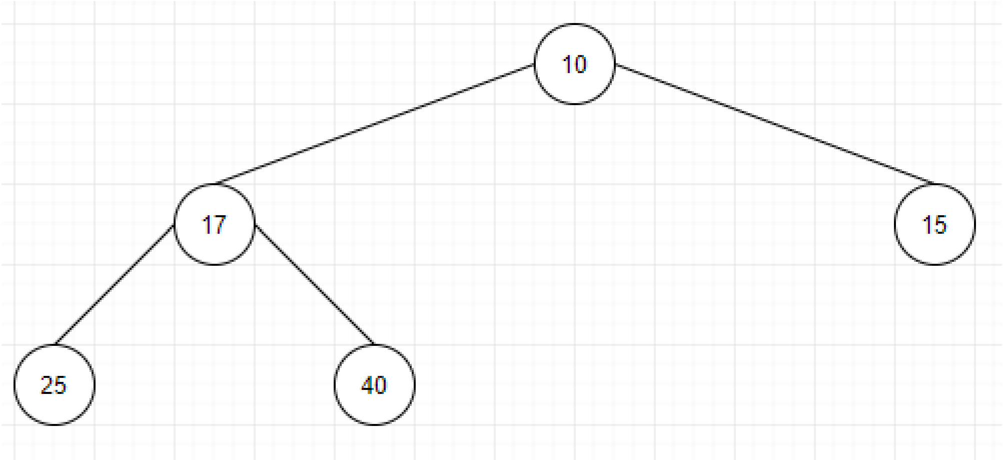
3.) Insert 15



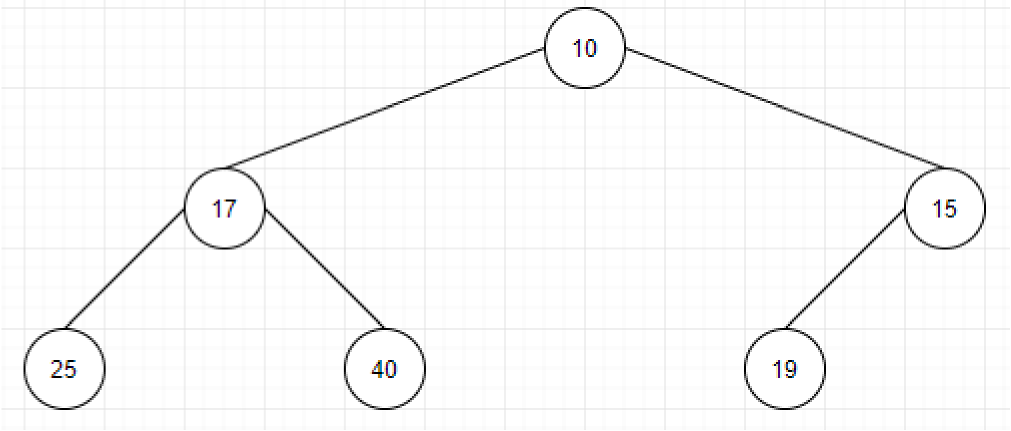
4.) Insert 25



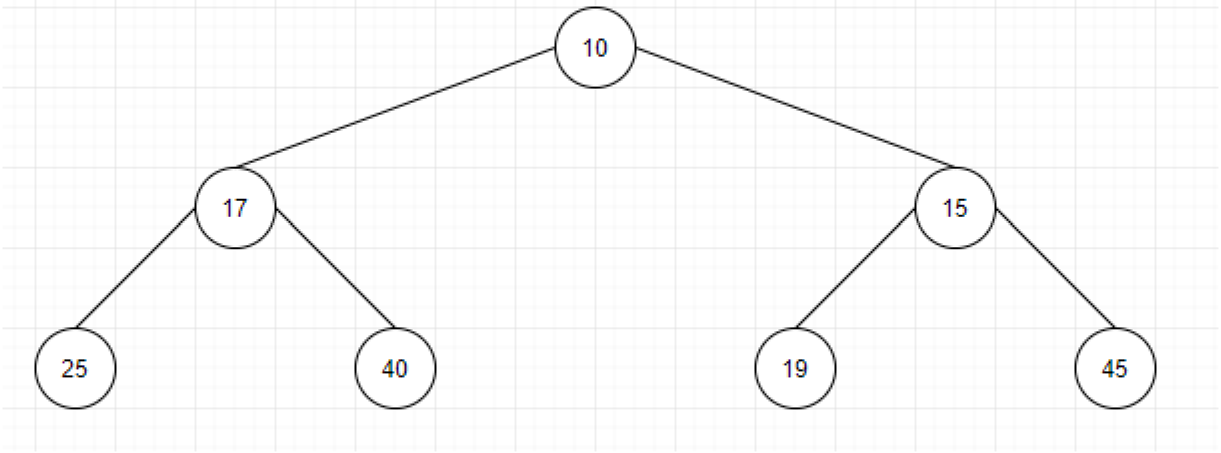
5.) Insert 40



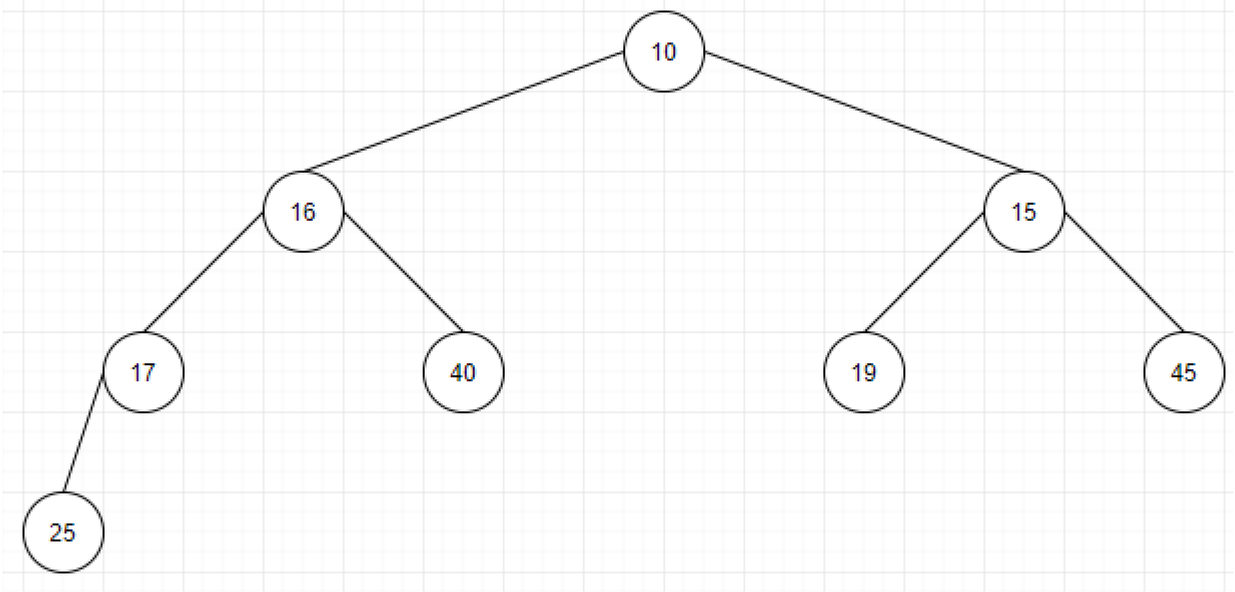
6.) Insert 19



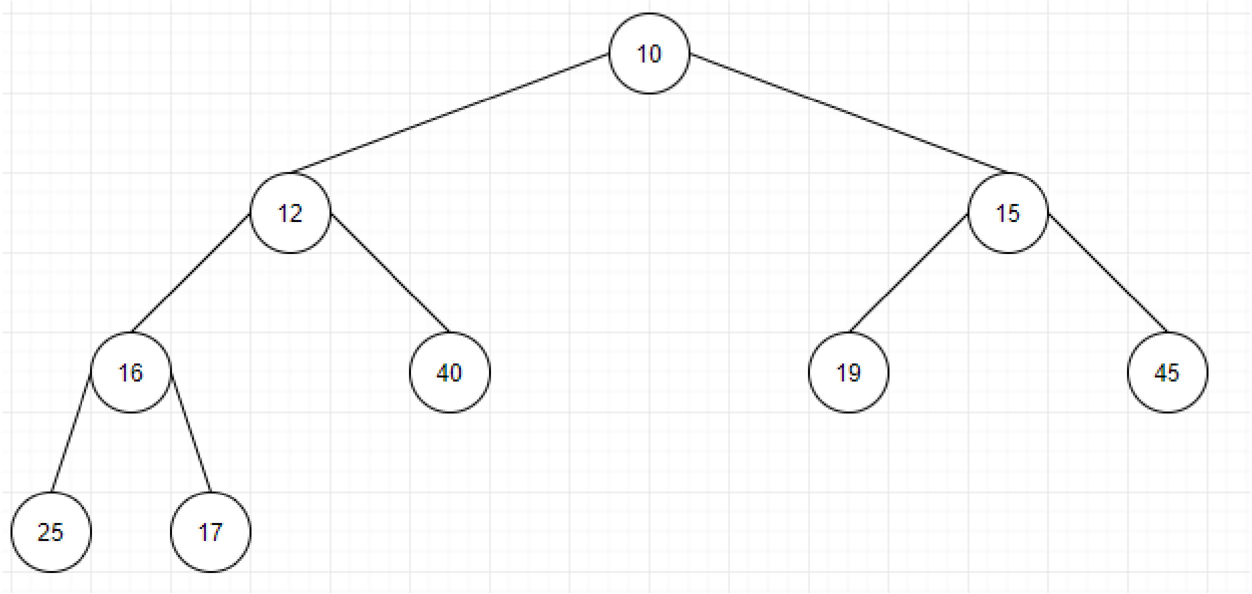
7.) Insert 45



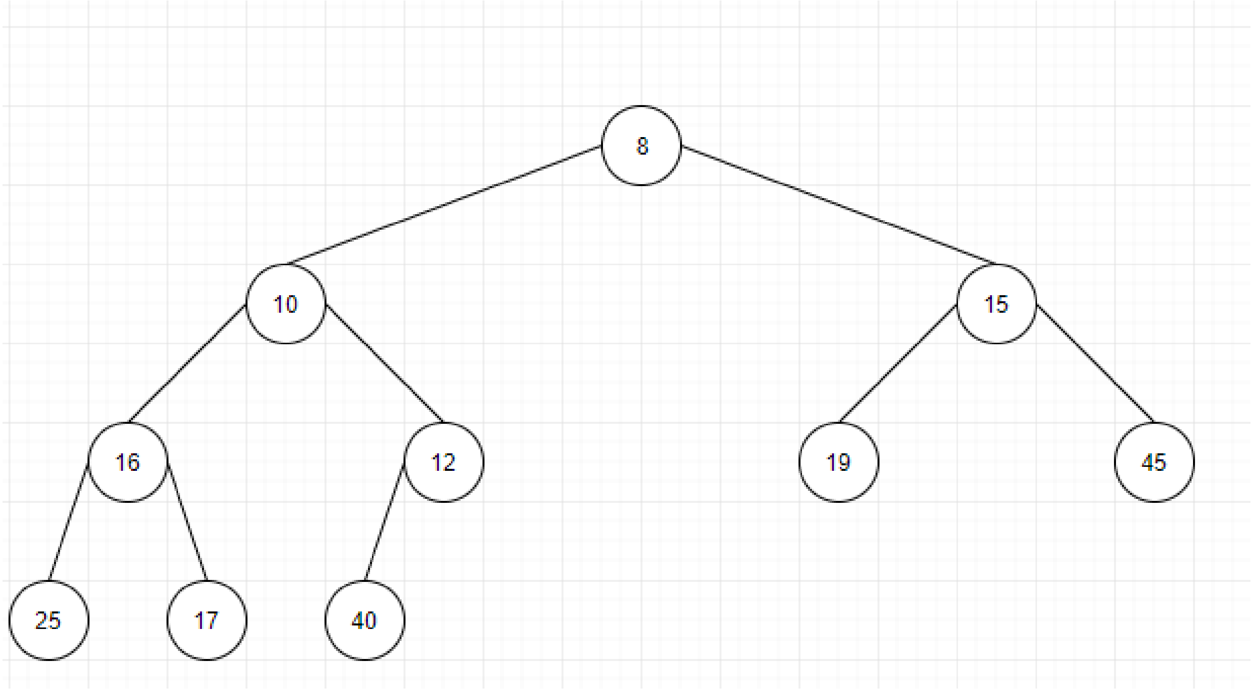
8.) Insert and Swap 16



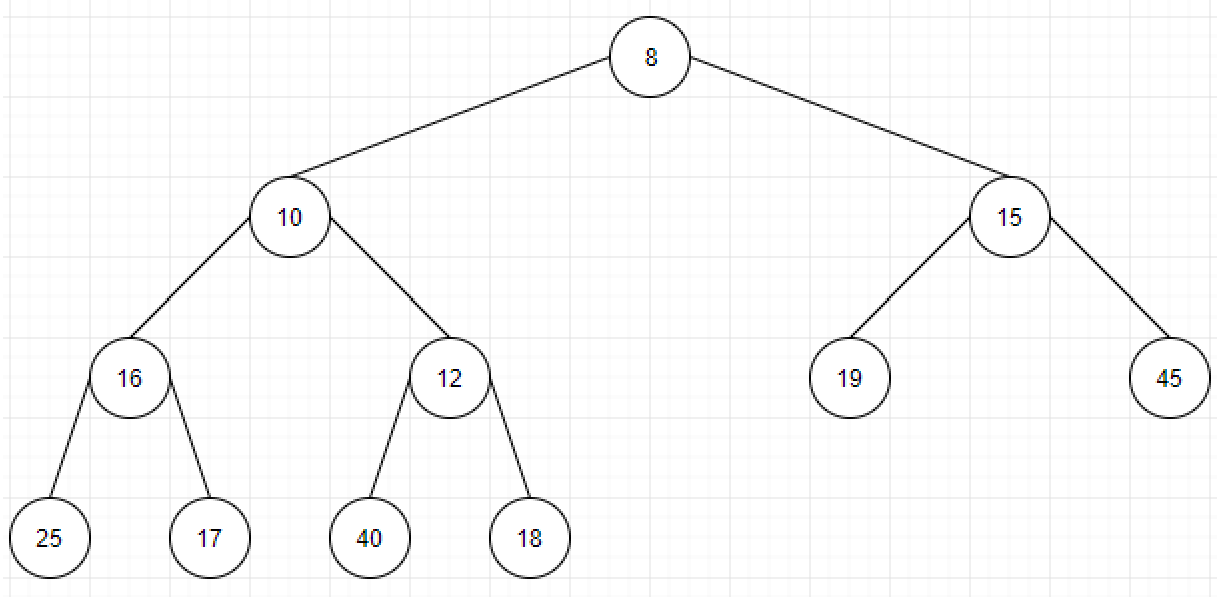
9.) Insert and Swap 12



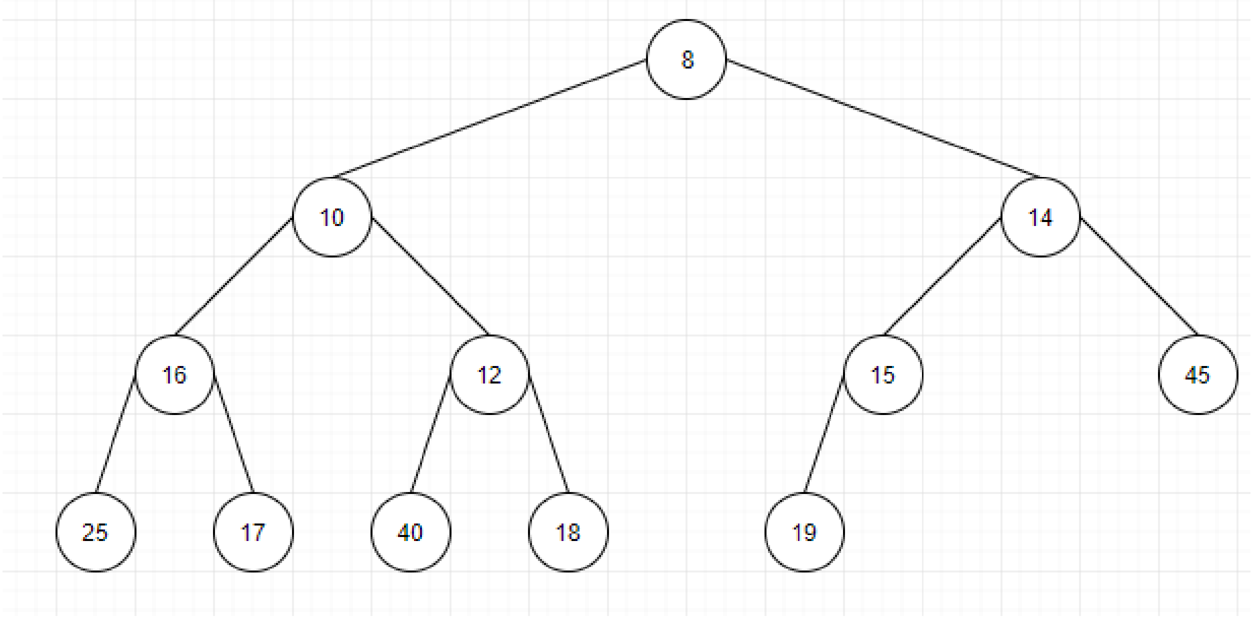
10.) Insert and swap 8



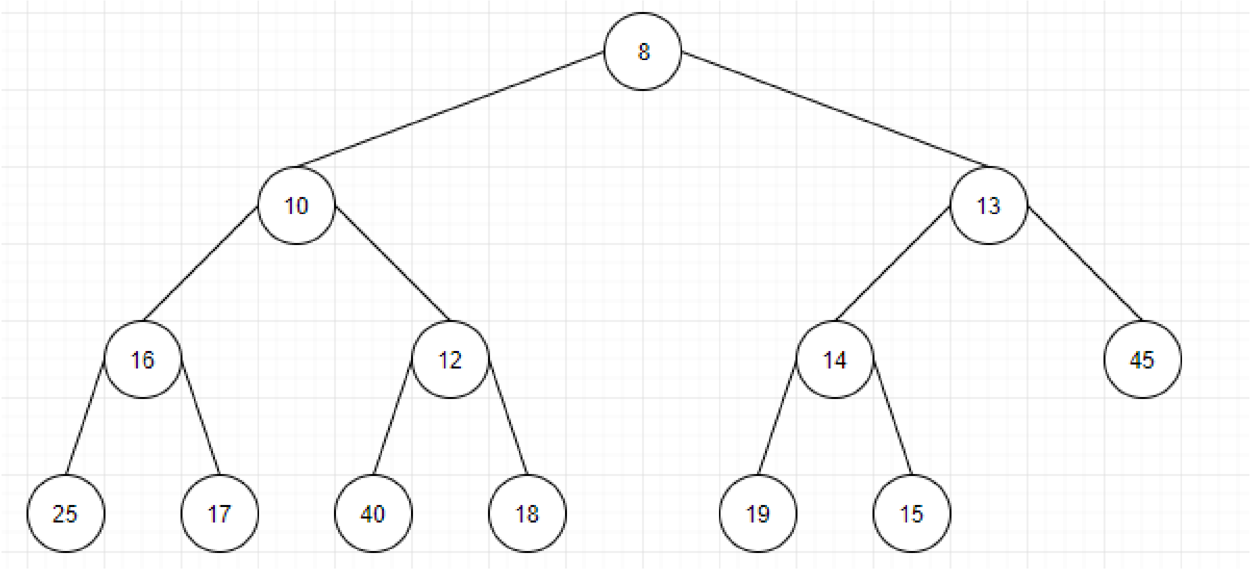
11.)Insert 18



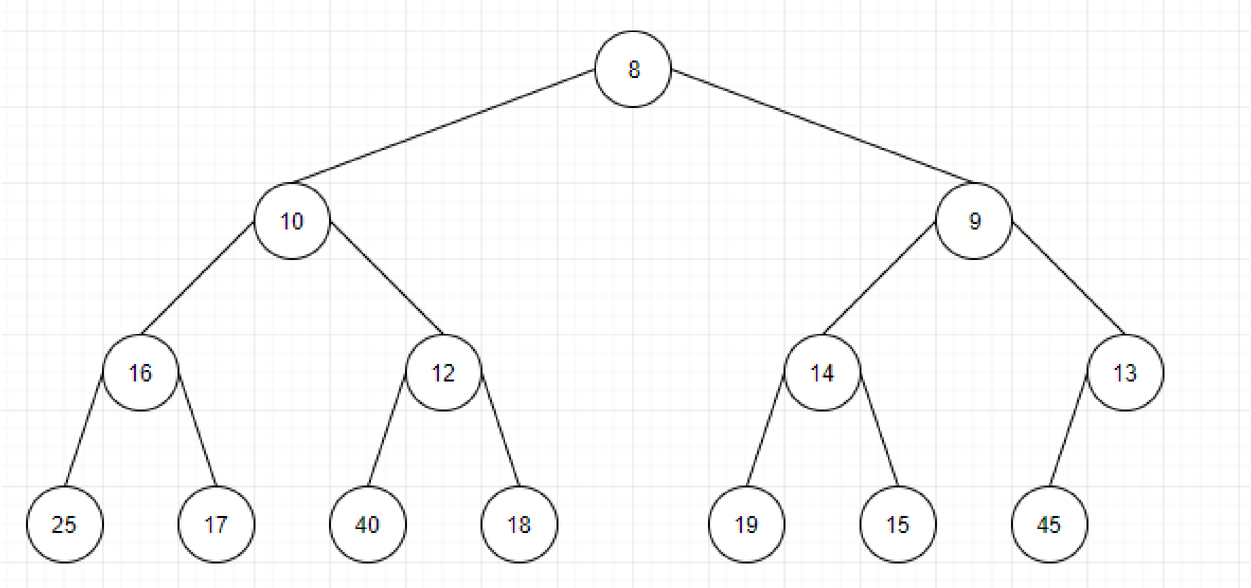
12.)Insert and Swap 14



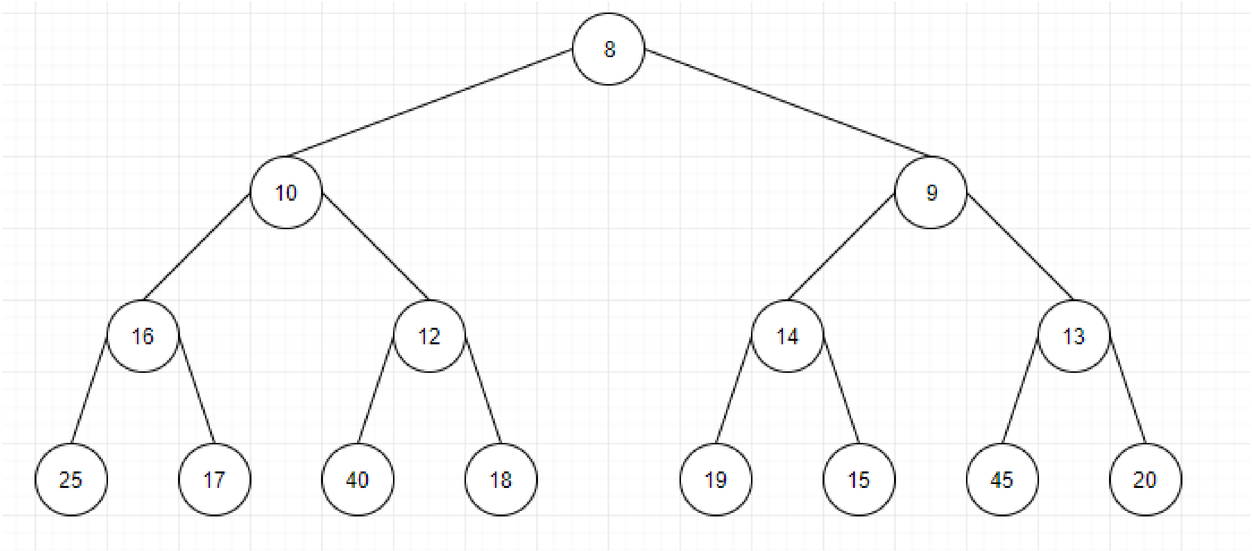
13.)Insert and Swap 13



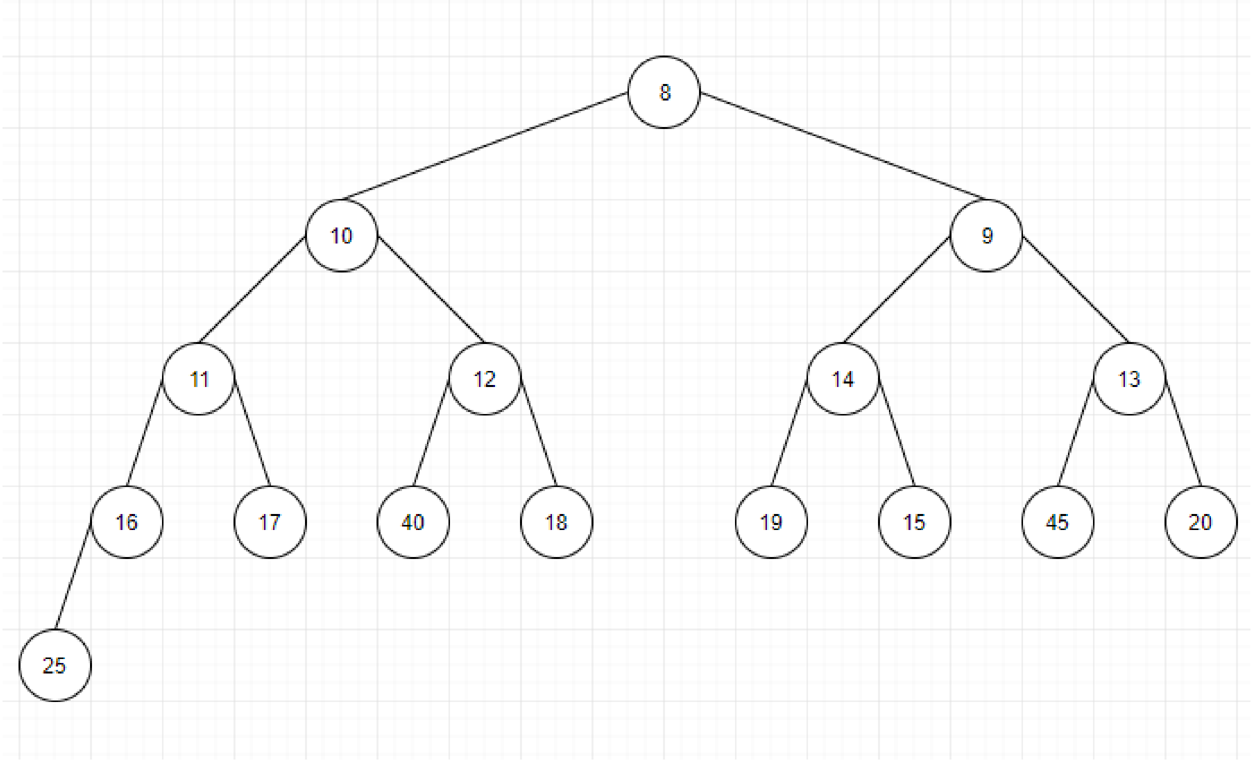
14.)Insert and Swap 9



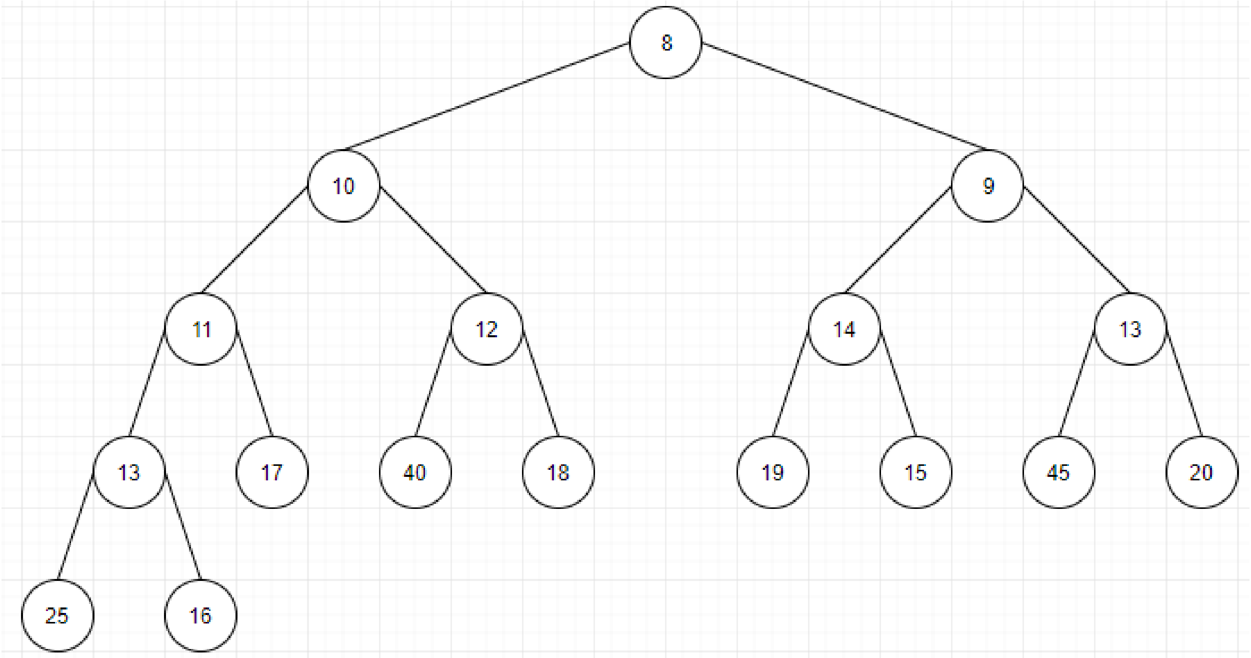
15.)Insert 20



16.)Insert and swap 11



17.)Insert and Swap 13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