Alberi AVL - Esercizi

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Algoritmi e Strutture di Dati
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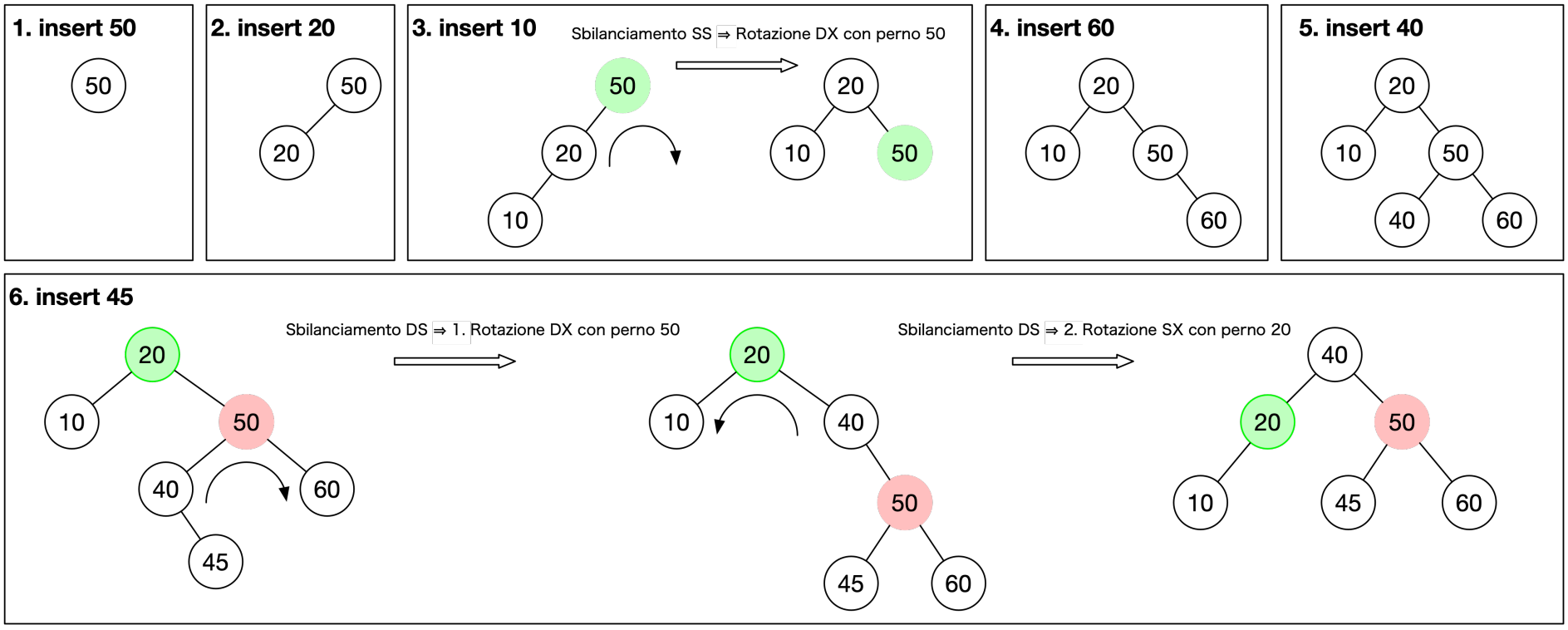
Esercizio 1

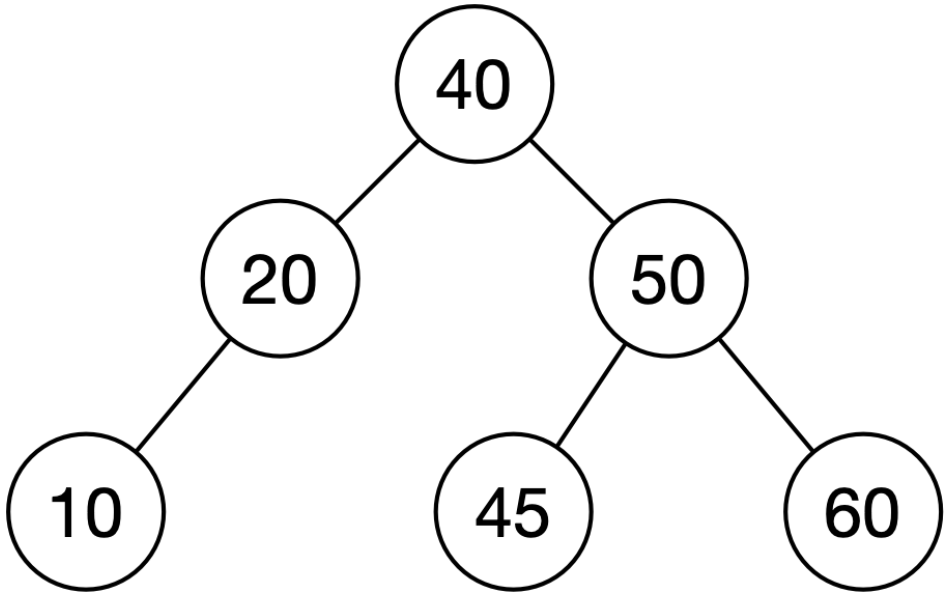
- Dato un albero AVL T con chiavi intere inizialmente vuoto, disegnare l'albero ottenuto dalle operazioni di inserimento in ordine delle seguenti chiavi:
  1. $\textsc{insert}(T, 50)$
  2. $\textsc{insert}(T, 20)$
  3. $\textsc{insert}(T, 10)$
  4. $\textsc{insert}(T, 60)$
  5. $\textsc{insert}(T, 40)$
  6. $\textsc{insert}(T, 45)$

Esercizio 1 - Soluzione



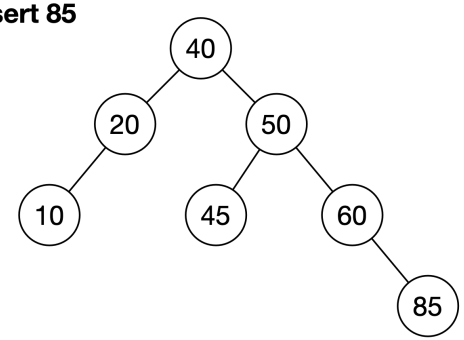
Esercizio 2

- Continuare con le seguenti operazioni (sull'albero precedente, mostrato sotto):
  1. INSERT$(T, 85)$
  2. INSERT$(T, 55)$
  3. DELETE$(T, 40)$
  4. DELETE$(T, 45)$
  5. INSERT$(T, 15)$

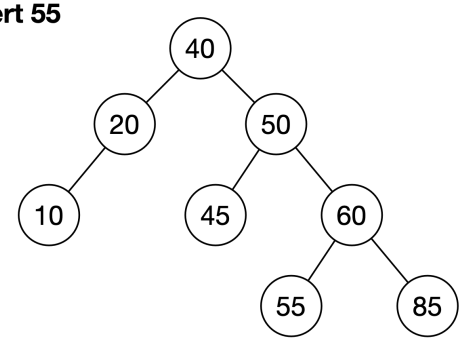


Esercizio 2 - Soluzione

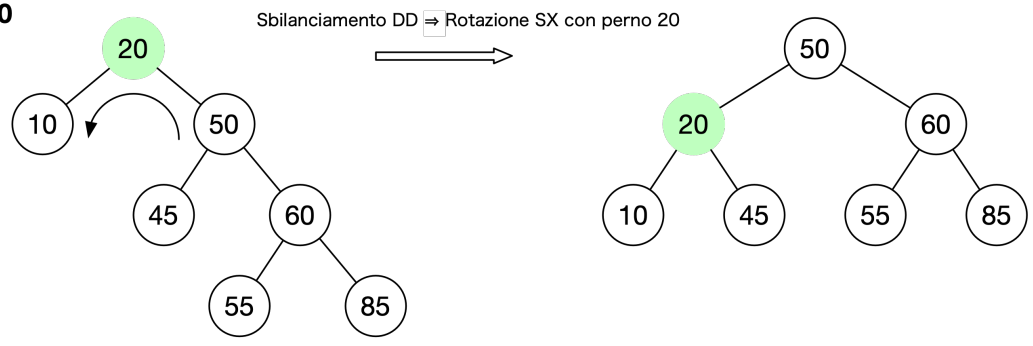
1. insert 85



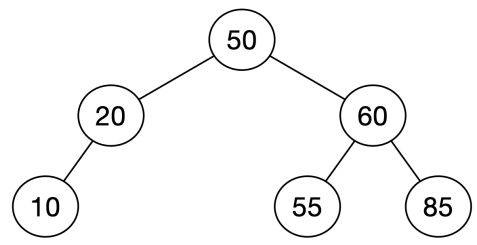
2. insert 55



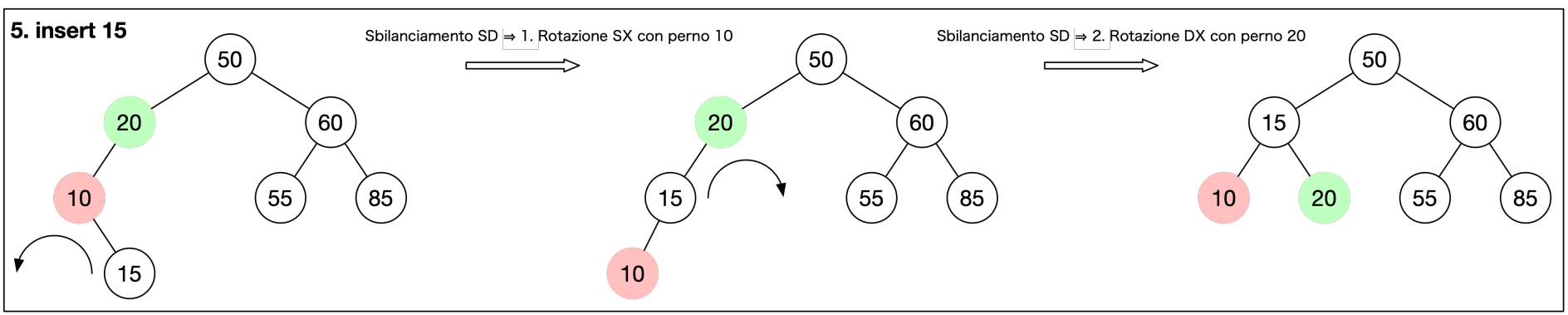
3. delete 40



4. delete 45

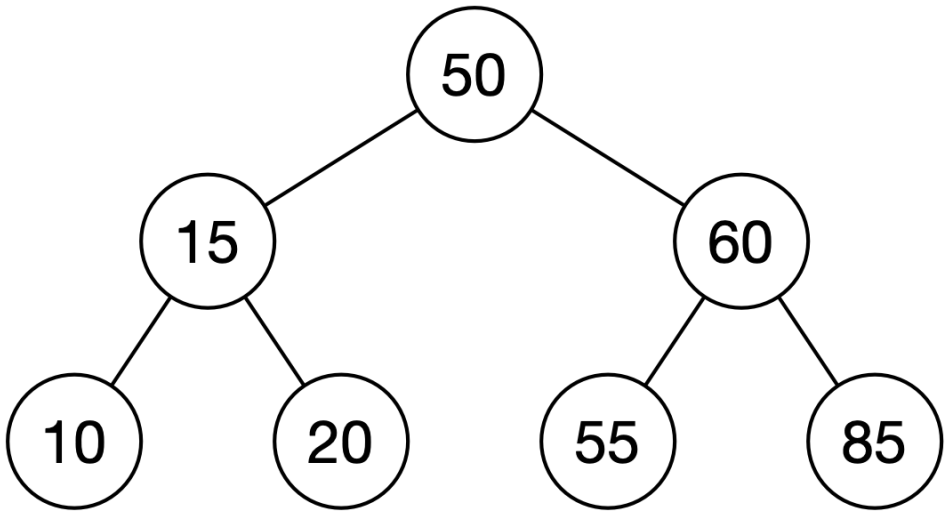


5. insert 15



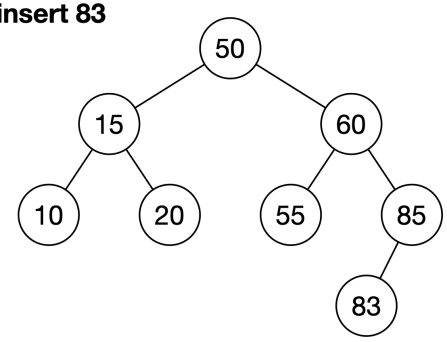
Esercizio 3

- Continuare con le seguenti operazioni (sull'albero precedente, mostrato sotto):
  1. INSERT$(T, 83)$
  2. DELETE$(T, 55)$
  3. INSERT$(T, 90)$
  4. DELETE$(T, 60)$

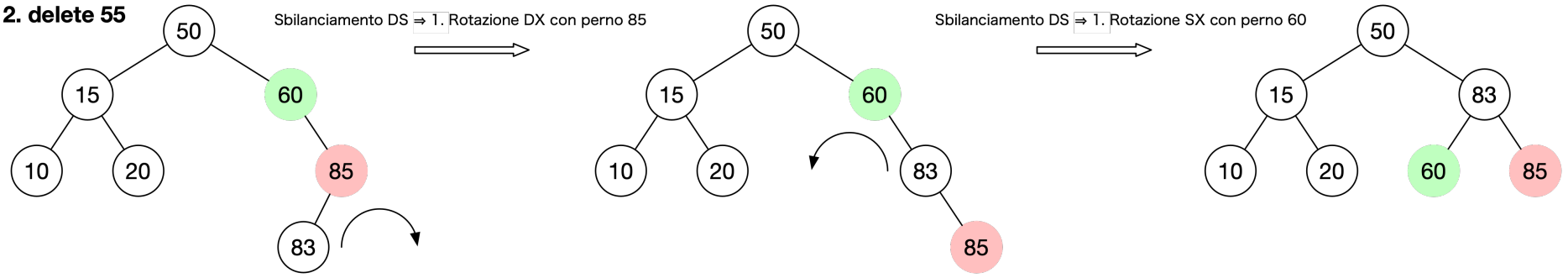


Esercizio 3 - Soluzione

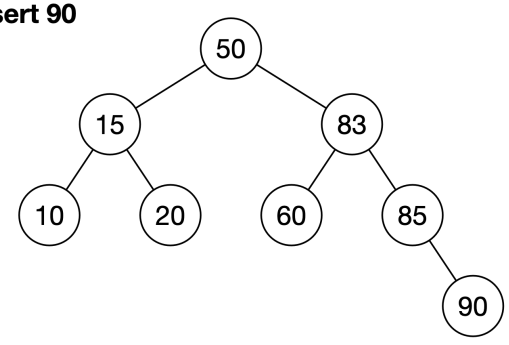
1. insert 83



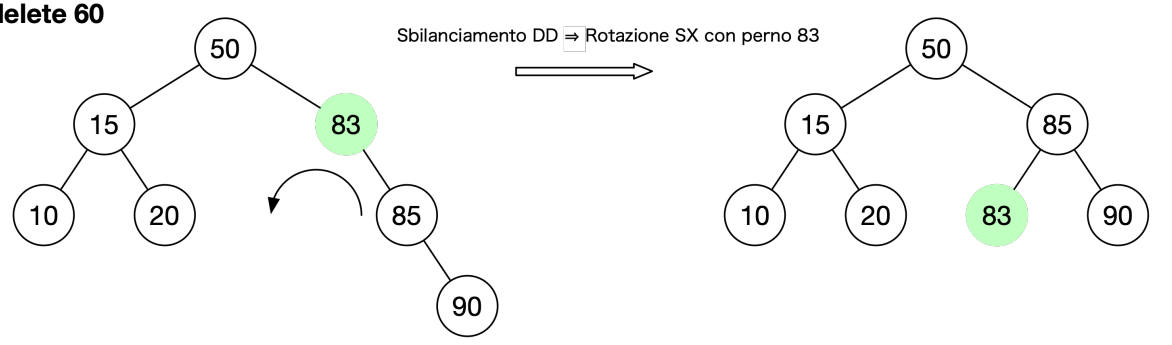
2. delete 55



3. insert 90

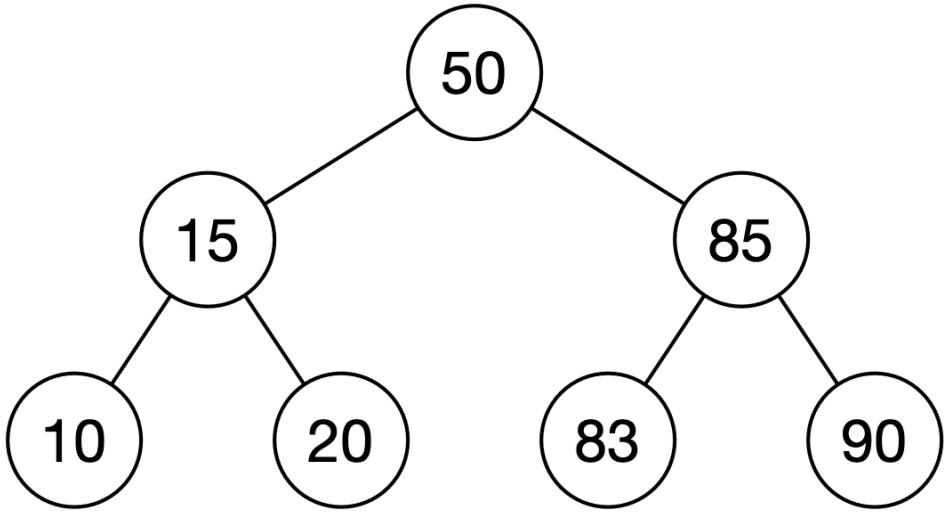


4. delete 60



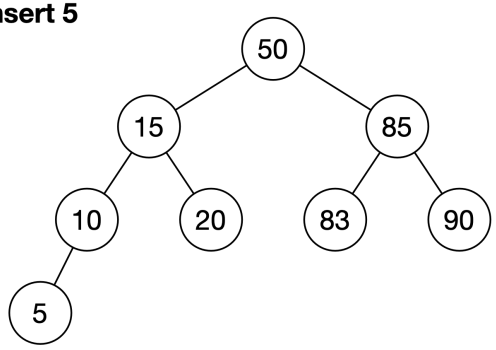
Esercizio 4

- Continuare con le seguenti operazioni (sull'albero precedente, mostrato sotto):
  1. INSERT$(T, 5)$
  2. INSERT$(T, 13)$
  3. INSERT$(T, 17)$
  4. INSERT$(T, 45)$
  5. INSERT$(T, 1)$
  6. DELETE$(T, 90)$

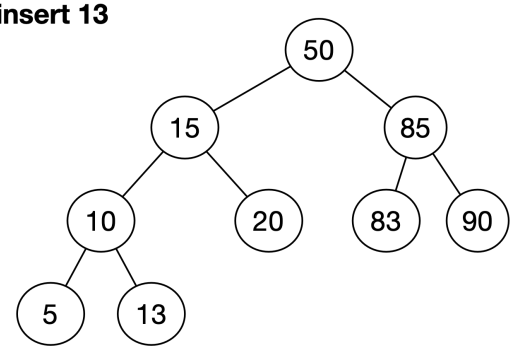


Esercizio 4 - Soluzione

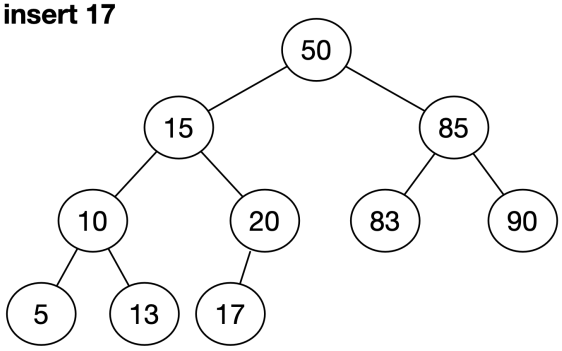
1. insert 5



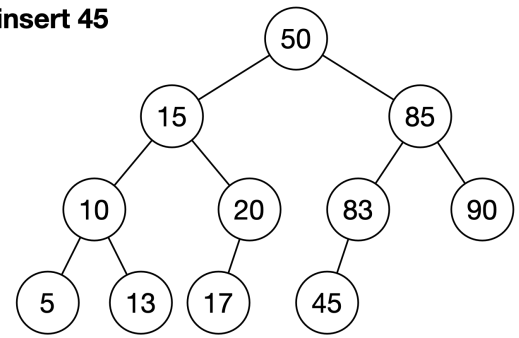
2. insert 13



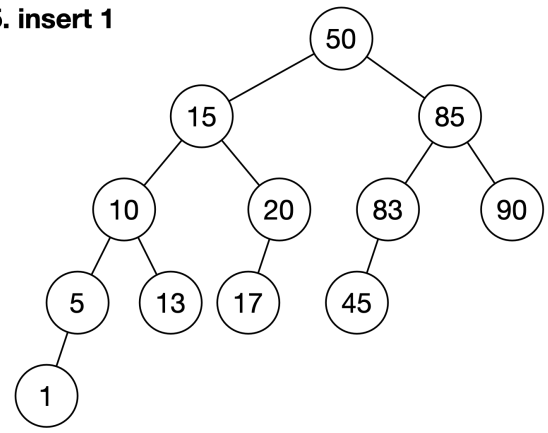
3. insert 17



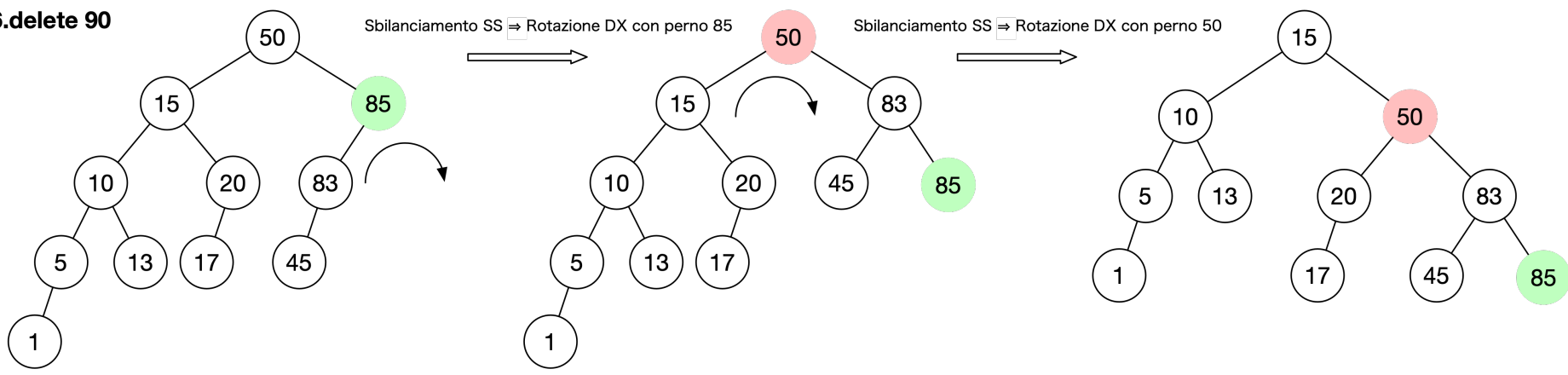
4. insert 45



5. insert 1

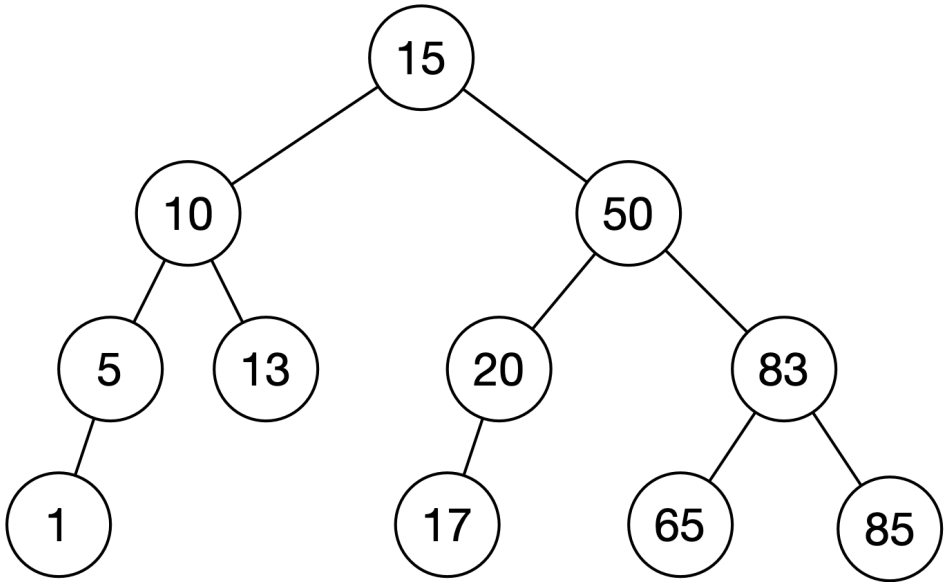


6.delete 90



Esercizio 5

- Continuare con le seguenti operazioni (sull'albero precedente, mostrato sotto):
  1. DELETE$(T, 15)$
  2. DELETE$(T, 13)$
  3. DELETE$(T, 10)$
  4. DELETE$(T, 50)$



Esercizio 5 - Soluzione