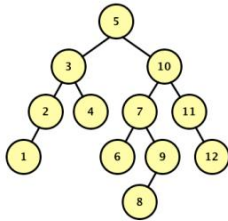
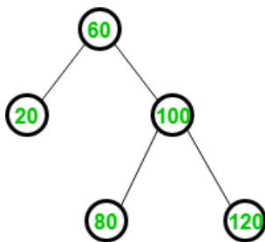


Mustaqil ishlash uchun masalalar

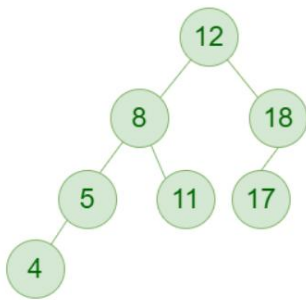
1. Berilgan AVL daraxtidan 5 ni o'chiring



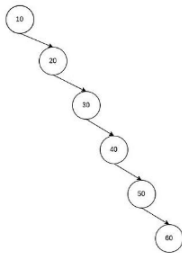
2. 1-masaladagi AVL daraxtidan balans faktorini hisoblang.
3. Quyidagi ma'lumotlar uchun AVL daraxt quring
21,26,30,9,4,14,28,18,15,10,2,3,7
4. 7 tugunli har qanday AVL daraxtining maksimal balandligi qancha? Bir tugunli daraxtning balandligi 0 ga teng deb taxmin qiling.
5. Avl daraxtiga kiritish va o'chirish – kalitlar AVL daraxtidan kiritilganda yoki o'chirilganda muvozanat omili buzilgan bo'lsa, tegishli aylanishlarni amalga oshiring.



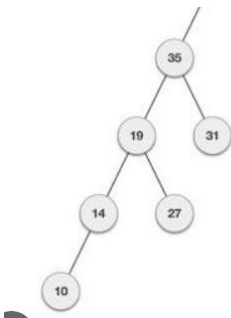
6. 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24 Berilgan qiymatlardan foydalangan holda AVL daraxtini chizing.
7. H, I, J, B, A, E, C, F, D, G, K, L Berilgan ketma-ketlikdan AVL daraxtini chizing.
8. Berilgan daraxt uchun har bir tugunga balans faktorini hisoblang.



9. Berilgan daraxt uchun rotatsiyani amalga oshiring.



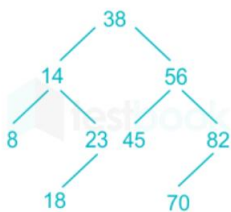
10. Berilgan daraxt uchun rotatsiyani amalga oshiring.



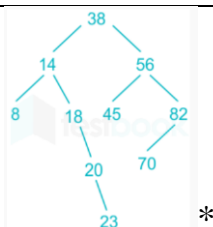
Mavzu yuzasidan testlar:

1. AVL daraxtdagi o'ng va chap tugunlarning balandliklari farqi nechtagacha bo'lishi kerak?
 - a) 1*
 - b) 2
 - c) 3
 - d) 4
2. AVL-daraxt -?
 - a) ikkilik qidiruv daraxt*

- b) qidiruv daraxt
 - c) uchlik qidiruv daraxt
 - d) birlik qidiruv daraxt
3. $n \cdot 2^n$ elementlari bo'lgan ikkilik qidiruv daraxtida muvozanatli elementni qidirish uchun eng yomon ish vaqti.
- a) $O(n \log n)$
 - b) $O(n \cdot 2^n)$
 - c) $O(n)^*$
 - d) $O(\log n)$
4. 7 tugunli har qanday AVL daraxtining maksimal balandligi qancha? Bitta tugunli daraxtning balandligi 0 ga teng deb taxmin qiling.
- a) 3^*
 - b) 2
 - c) 4
 - d) 2
5. AVL daraxtida balans faktori formulasi
- a) $|h(Tl) + h(TR)| < 1^*$
 - b) $|h(T8)| < 1$
 - c) $|h(T') - h(T5)| < 1$
 - d) $|h(TE)| < 1$
6. AVL- muvozanatlangan daraxt kimlar tomonidan kashf qilingan?
- a) Adelson, Velsk Georgiy Maksimovich va Landis Yevgeniya Mihaylovich*
 - b) Adelson, Velsk Georgiy Maksimovich va Luiz Yevgeniya Mihaylovich
 - c) Adams, Velkiy Georgiy Maksimovich va Landis Yevgeniya Mihaylovich
 - d) Adama, Kurin Dimitriy va Landis Yevgeniya Mihaylovich
7. Berilgan AVL daraxtga 20 qiymatini kiritkandan so'ng daraxtnining ko'rnishini toping.

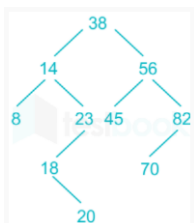


a)

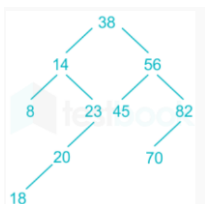


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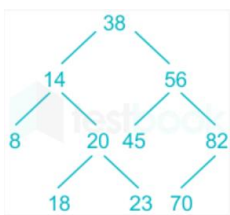
b)



c)



d)



8. Dastlab n elementlari bo'lgan AVL daraxtiga n^2 elementlarini kiritishning eng yomon vaqt murakkabligi nima?

a) $O(n^4)$

b) $O(n^2)$

c) $O(n^2 \log n)^*$

d) $O(n^3)$

9. Agar daraxtda 13 ni o'chirsak 14 tugunining balans faktori qanday bo'ladi.

a) $BF(14)=-2^*$

b) $BF(14)=1$

c) $BF(14)=2$

d) $BF(14)=-1$

10. Bo'sh AVL daraxtiga ketma-ket 9, 6, 5, 8, 7, 10 qiymatlarni kiritkanda rotatsiyalar soni nechta bo'ladi.

a) 0

b) 1

c) 2^*

d) 3