ADS LOB-4 WriteUP (AVI Trees)

```
int height (node + p)
closs Node [
                                      { :+(p==NUL)
    public.
                                              return 0,
        int data;
                                            return p-sheighti
        node + left i
        node * right;
        int height ;
     node + getnode (int data)
     { node & p = new node();
        p-) data = data;
         p->left = NULL;
         p-> right = NULL;
          p-)height=1,
          ig order
     node + rotateright (node + b)
        node * a= b -> left;
         noder t = baright;
         an right = bi
          balette ti
          b-height = mox(height (b-) left), height (b-) right ))+ 1;
         a sheight = mox(height (a sleft),
                              height (arright)) +1;
         return ai
```

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Kshitij R
18M18(sou8)
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node + rotatelett (node + a)
    node + 6= 0 - right?
     nodett= a > lefti
      b-) left = d.
      a > leff right = t;
      a > height = max(height (a > right),
                           height (a > left) )+1;
      b-) height=mox(height (b-) left),
                            height (b -> right))+1;
      return bi
      int balance (node + P)
      it (b = = NOLT)
               return 0;
         return height (P > left) - height (P > right);
        4
      node + insertan(node * root, int duta)
       (1100 = = NOLL)
                 return getnode (dota);
            if (data < root - data)
                    root-left=insertion(root-) (eft, doto);
             else if (data Troot -) data)
                     root > right = insertion(root > right, dota);
                 return root;
              root -> height = mox (neight (root -> left),
                                   height (root tright ))+1;
       int b1 = bolence (root);
         if (617188 data < roof-) (eff-) dota)
                   return rotateright (root);
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Soly.

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18m18c5048.
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if (b/2-1 & & dota >root > right > dota)
             return rotatelett (root)
 if (b171 &d duta Troot-) left-) dola)
   f
      (root -) left = rotateleft (root) -> left) i
        return rotateright (root);
   if ( b/<-1 dd data < root-> left -> data)
           root right = rotateright (root = right);
            return notate left (root);
       return rooti
     node * deletion(node * root, int item)
          if ( root = = NULL)
                itoor muter
            if (item < root > dota)
                    root-left= deletia (root-left, item);
             else if (item 7100+ dota)
                   root- right = deletion (root - right, item);
              e15 c
                { : f(roof > 1 eft = = NULL) | root > right == NULL)
                   node + t= noof > left ? noof > left : noof > right;
                   if (t == NULL)
                   of te root;
                     root= NOLLi
```

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e15e
   + root= *temp i
     fire (temp)
else
   node +t= minvalue (root -right);
    root - data = todota;
    root-right= deletion (root-right, +>dota)
     4
if (100f==NOFF)
       return root;
 root- height = mox (height (root-) left),
                          height (100t-) right))+1;
      i (toor) sonolod = 10
  if (b171 ff bolonce (root-> left) >=0)
             return rotateright (root);
  : (bl< -1 & & bolonce (root-) right) <= 6)
              return rotateleff (roof);
    if (b) >1 & & bolonce(noot > 1eff) <0)
    1 rod-) left= rolddeff(root-) left);
        return rolderight (root);
      4
   if (bl< -1 dd belence (root night) >0) {
             root-right - rotalessight (root-right);
             return rotateleft (root);
```

itoor nouti

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Hely.

Kshitij.R 18m18CSO48