

Goldman Sachs

Magic Nodes

```
static int checkMagicParent(TreeNode node)
{
    if(node == null)
        return 0;
    int lsum = checkMagicParent(node.left);
    int rsum = checkMagicParent(node.right);
    if(lsum == 0)
        return node.val + rsum;
    if(rsum == 0)
        return node.val + lsum;
    if((lsum%2 == 0 && rsum%2 != 0) || (lsum%2 != 0 && rsum%2 == 0))
        sumParents += node.val;
    return node.val + lsum + rsum;
}
```

Counting pairs when a person can form pair with at most one

```
def numberOfWays (x):
    dp=[]
    dp.append(1)
    dp.append(1)
    for i in range(2,x+1):
        dp.append(dp[i-1]+(i-1)*dp[i-2])
    return(dp[x])
```