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Submissions: [21245 \(/problem_submissions.php?pid=700225\)](/problem_submissions.php?pid=700225) Accuracy: 36.01%

Root to leaf path sum (Function Problem)

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Given a Binary Tree and a sum s, your task is to check whether there is a root to leaf path in that tree with the following sum . You are required to complete the function **hasPathSum**. You should not read any input from stdin/console. There are multiple test cases. For each test case, this method will be called individually.

Input:

The task is to complete the function **hasPathSum** which takes 2 arguments, root of the Tree and a value sum. The struct node has a data part which stores the data, pointer to left child and pointer to right child. There are multiple test cases. For each test case, this method will be called individually.

Output:

The function should return the true if such path exist else return false.

Constraints:

- 1 <=T<= 30
- 1 <=Number of nodes<= 100
- 1 <=Data of a node<= 1000

Example:

Input

```
2
2
1 2 L 1 3 R
2
2
1 2 L 1 3 R
4
```

Output

```
0
1
```

In above example there are two test case where each represents a tree with 3 nodes and 2 edges where root is 1, left child of 1 is 2 and right child of 1 is 3.



Note: The **Input/Output** format and **Example** given are used for system's internal purpose, and should be

used by a user for **Expected Output** only. As it is a function problem, hence a user should not read any input from stdin/console. The task is to complete the function specified, and not to write the full code.

**** For More Input/Output Examples Use 'Expected Output' option ****

Contributor: Amit Khandelwal

Author: Shubham Joshi 1 (<https://auth.geeksforgeeks.org/user/Shubham%20Joshi%201/practice/>)

All submissions

(/problem_submissions.php?pid=700225)

My submissions

(/problem_submissions.php?

pid=700225&isSolved=ALL&lang=ALL&user=Self)

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Since this is Function Problem, your code is concatenated with this (C++ (/viewInitialCode.php?pid=700225&problemName=Root to leaf path sum &lang=cpp&problemLevelCode=0&problemLevel=Easy) or Java (/viewInitialCode.php?pid=700225&problemName=Root to leaf path sum &lang=java&problemLevelCode=0&problemLevel=Easy)) code.

C++ (g++ 5.4)

Java (1.8)

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Reset



```

1  /*
2  Please note that it's Function problem i.e.
3  you need to write your solution in the form of Function(s) only.
4  Driver Code to call/invoke your function would be added by GfG's Online Judge.*/
5
6
7  /* A binary tree node
8  struct Node
9  {
10     int data;
11     Node* left, * right;
12 }; */
13 /*you are required to
14 complete this function */
15 bool hasPathSum(Node *node, int sum)
16 {
17     if (node==NULL)
18     {
19         return (sum==0);
20     }
21     bool ans =0;
22     int subsum=sum-node->data;
23     if (subsum==0 and node->left==NULL and node->right==NULL)
24     {
25         return 1;
26     }
27     if (node->left!=NULL)
28     {
29         ans=ans||hasPathSum(node->left,subsum);
30     }
31     if (node->right!=NULL)
32     {
33         ans=ans||hasPathSum(node->right,subsum);
34     }
35     return ans;
36 }

```

It is recommended to 'Compile & Test' your code before clicking 'Submit'!


Compile & Test

Submit

Expected Output

Compilation/Execution Result:



Correct Answer. 

Execution Time:0.01

Next Suggested Problem: Sum Tree (/problems/sum-tree/1/?ref=self)

Need help with your code? Please use ide.geeksforgeeks.org (https://ide.geeksforgeeks.org), generate link and share the link here.

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**Bhavith Nimmagadda** • 6 months ago<http://ide.geeksforgeeks.org...>

please check the solution above...even though it giving ouput 0 , it is showing error for the test case

6

1 2 R 2 4 R 4 5 R 5 6 R 6 7 R 7 8 L

2

2 ^ | v • Reply • Share ›

**Mukul Bansal** • 6 months ago

Please let me know my error, I am getting runtime error.

```

bool hasPathSum(Node *node, int sum)
{

    if(sum==0){
        if(node->left==NULL||node->right==NULL){
            return true;
        }
        else{
            return false;
        }
    }
    else {if(sum<0){
        return false;
    }
    else{
        if((node->data)>sum){
            return false;
        }
        else{
            return (hasPathSum(node->left,sum-(node->data))||hasPathSum(node->right,sum-(node->data)));
        }
    }
}
}
}
}

```

1 ^ | v • Reply • Share ›

**Neha Jeevan** → Mukul Bansal • 23 days ago

In the statement

return (hasPathSum(node->left,sum-(node->data))||hasPathSum(node->right,sum-(node->data)));

Check first if node->left and node->right exist or not? Because then it will call function with NULL as node. And the statement node->left or node->right or node->data would point to a memory that doesn't exist and hence cause segmentation fault.

Either this or add a condition for the case where node == NULL.

1 ^ | v • Reply • Share ›

**Mukul Bansal** → Mukul Bansal • 6 months ago

This is C code. I don't know if it could work with C++ or not

1 ^ | v • Reply • Share ›

**Piyush Kumar** → Mukul Bansal • 6 months ago

Add a case when node is NULL in this function.

^ | v • Reply • Share ›

**Rohit** → Mukul Bansal • 6 months ago

you are missing the case: if(node == NULL)

and one more thing replace if(sum == 0) with if(sum - node->data == 0).



^ | v • Reply • Share ›



maniAC • 6 months ago

3 line solution:

<http://ide.geeksforgeeks.org...>

1 ^ | v • Reply • Share ›



Badal Satyarathi • a year ago

<http://code.geeksforgeeks.o...>

please help me where am i doing wrong??

@Amit Khandelwal

1 ^ | v • Reply • Share ›



Suryansh Sharma • 3 months ago

class GfG

{

boolean inorder(Node node, int sum){

if(node==null)

return false;

if(node.left==null&&node.right==null){

if(sum==0){

return true;

}

else return false;

}

return(inorder(node.left,sum-node.data)||inorder(node.right,sum-node.data));

}

boolean hasPathSum(Node node, int sum)

{

return(inorder(node,sum));

}

}

Please tell me whats wrong in the above code, I'm not able to figure out the mistake.

^ | v • Reply • Share ›



surendra sharma • 4 months ago

what should be the output for a tree with only one node and the value of the node is equal to the given sum ?

^ | v • Reply • Share ›



Megha Jindal • 4 months ago

Please check the solution below. I am unable to figure out the error

```
bool hasPathSum(Node *node, int sum){
```

```
if(node==NULL){
```

```
return (sum==0);
```

```
}
```

```
int subSum=sum-node->data;
```

```
if(node->left==NULL && node->right==NULL)
```

```
return (subSum==0);
```

```
return (hasPathSum(node->left, subSum) || hasPathSum(node->right, subSum));
```

```
}
```

^ | v • Reply • Share ›



jon_snow → Megha Jindal • 3 months ago

It's not traversing till root for few cases like.

10

\

15



\

20

for searching 10 in this case your code will give output as true but th correct ans is false

^ | v • Reply • Share ›

**Shivankar Ojha** • 4 months ago

I can't explain why this is not working for me. Can somebody help me out please?

```

boolean hasPathSum(Node node, int sum)
{
    // Your code here
    return (PathSum(node,0,sum));
}

boolean PathSum(Node root,int current,int sum)
{
    if (root==null)
        return (sum==0);
    else{
        current=current+root.data;
        if (current==sum && root.left==null && root.right==null)
            return true;
        sum=sum-current;boolean a1=false,a2=false;
        if (root.left!=null)
            a1=PathSum(root.left,current,sum);
        if (root.right!=null)
            a2= PathSum(root.right,current,sum);
        return a1||a2;
    }
}

```

^ | v • Reply • Share ›

**Deepak Gupta** • 5 months ago

Accepted

<http://hackerranksolutionc....>

^ | v • Reply • Share ›

**Android Projects** • 5 months ago<http://practice.geeksforgee...>

i am unable to get the correct output .plz suggest..

^ | v • Reply • Share ›

**shivangi gupta** • 5 months ago

Why does this code fails?

<http://ide.geeksforgeeks.or...>

```

bool hasPathSum(Node *node, int sum)
{
    if (node == NULL)
        return sum==0;
    int subSum = sum - node->data;
    if (subSum==0 && node->left == NULL && node->right == NULL )
        return 1;
    return hasPathSum(node->left, subSum) ||
        hasPathSum(node->right, subSum);
}

```

^ | v • Reply • Share ›

**Jaspreet Singh** Mod → shivangi gupta • 5 months ago

change line 4 from "return sum==0" to "return 0" and try to submit again.

^ | v • Reply • Share ›

**Atreya Banerjee** • 6 months ago

6

100 20 D 20 20 L 20 40 L 40 50 D 50 20 L 50 70 D

100 20 R 20 30 L 30 40 L 40 50 R 50 60 L 50 70 R

100

What does this input mean? How to get the tree structure from the input?

^ | v • Reply • Share ›



Mukul Bansal → Atreya Banerjee • 6 months ago

100 node

on its right another node of 20

on node with data as 20, the left node data is 30

now on node with data as 30, its left node data is 40

100

N 20

30 N

40 N

^ | v • Reply • Share ›



Pankaj Chaurasia • 6 months ago

4 line solution

<http://ide.geeksforgeeks.org...>

^ | v • Reply • Share ›



simer • 7 months ago

```
bool treeSum(Node *root,int *op,int c,int sum);
```

```
bool hasPathSum(Node *node, int sum)
```

```
{
```

```
int op[10000];
```

```
bool sum1=treeSum(node,op,0,sum);
```

```
// printf(" sum=%lld",sum);
```

```
return sum1;
```

```
}
```

```
bool treeSum(Node *root,int *op,int c,int s)
```

```
{
```

```
int sum=0;
```

```
if(root==NULL)
```

```
return 0;
```

```
op[c]=root->data;
```

[see more](#)

^ | v • Reply • Share ›



Rajnish Yadav • 9 months ago

Compilation Error, Cannot allocate memory

^ | v • Reply • Share ›



Monika • 10 months ago

Can anyone please help me understand why this code isn't giving correct output?

<http://code.geeksforgeeks.o...>

^ | v • Reply • Share ›



Harshini Padmashali • a year ago

<http://code.geeksforgeeks.o...>

please help me out with my code, it shows the correct output when tested with GFG ide but shows wrong answer on submission :(

^ | v • Reply • Share ›



avinabadasgupta • a year ago

<http://code.geeksforgeeks.o...>

For test case

6

1 2 R 2 4 R 4 5 R 5 6 R 6 7 R 7 8 L

2



My submission says my output is 1 for this case whereas correct output is 0.

When I test my code using the same test case it says my output is 0.

What is the problem here?

^ | v • Reply • Share ›



Shubham Joshi Mod ➔ avinabadasgupta • a year ago

The issue is in the use of static variables in your code. Your code is run for multiple test cases so your values of your static variables need to be cleared. Try to avoid them or make sure they are cleared when other test cases are fed.

^ | v • Reply • Share ›



Agyaey Tiwari ➔ Shubham Joshi • 10 months ago

thanks... got it

^ | v • Reply • Share ›



Agyaey Tiwari • a year ago

WHY IT SHOWS RUN TIME ERROR , BUT GIVEN SAMPLE IS PASSING

```
bool hasPathSum(Node *node, int sum)
{
    if(!node)
        return (sum==0);
    Node* root=node;
    stack<node*> s;
    s.push(node);
    while(!s.empty())
    {
        Node* temp=s.top();
        if(temp==root->right)
            sum=sum+root->left->data;
        sum=sum-temp->data;
        if(!temp->left&&!temp->right&&sum==0)
            return true;
        s.pop();
        if(temp->right)
            s.push(temp->right);
        if(temp->left)
            s.push(temp->left);
        if(!temp->left&&!temp->right&&temp!=root->left)
            sum=sum+temp->data;
    }
    return false;
}
```

^ | v • Reply • Share ›



Shubham Joshi Mod ➔ Agyaey Tiwari • a year ago

sum = sum+root->left->data but what if root->left is NULL ? add a check for it

1 ^ | v • Reply • Share ›



vivek • a year ago

```
boolean hasPathSum(Node node, int sum)
{
    if(node==null)
        return false;
    sum-=node.data;
    if(node.left==null && node.right==null && sum==0)
        return true;
    return (hasPathSum(node.left,sum) || hasPathSum(node.right,sum));
}
```

^ | v • Reply • Share ›



Yashika Chawla • a year ago

<http://code.geeksforgeeks.org...>

why is it first checking for NULL condition and failing at the first place giving "RunTime error".
when I remove the condition



```
if(node == NULL || node->data == sum )
return false;
it works fine but fails when sum is equal to the root value.
```

Please help me with what I am doing wrong.

^ | v • Reply • Share ›



viral • a year ago

<http://code.geeksforgeeks.o...>

6

100 20 R 20 30 L 30 40 L 40 50 R 50 60 L 50 70 R

100

For this input there is a path where the sum is 100 (i.e. 100 --> null). But output according to the problem setter is 0. Can anyone explain.

^ | v • Reply • Share ›



kartik → viral • a year ago

Pls take a closer look. The question says root to leaf path sum, 100 is not a leaf.

^ | v • Reply • Share ›



shubh mishra • a year ago

when i submit my code, it is showing my output is 1 for

6

1 2 R 2 4 R 4 5 R 5 6 R 6 7 R 7 8 L

2

but when i test it...its showing 0...why??

^ | v • Reply • Share ›



avinabadasgupta → shubh mishra • a year ago

I am facing the exact same problem.

^ | v • Reply • Share ›



tunca tunç • a year ago

My submission for this problem.

<http://www.practice.geeksfo...>

^ | v • Reply • Share ›



Arpit • a year ago

Anyone got java solution working?

pls tell explain the error in <http://code.geeksforgeeks.o...>

^ | v • Reply • Share ›



Amit Khandelwal → Arpit • a year ago

First of all you are returning 0 and 1, which are integers. In java boolean value is either true or false. Secondly you are checking the original given sum with each node. You have to check if there is a path from node to leaf sum of whose node's data is equal to given sum.

^ | v • Reply • Share ›



TechPrep • a year ago

What is wrong in this code....

```
boolean hasPathSum(Node node, int sum)
```

```
{
if (node == null) {
return (sum == 0);
}
```

```
sum = sum - node.data;
```

```
if (sum == 0 && node.left == null && node.right == null) {
return true;
}
```

```
return hasPathSum(node.left, sum) || hasPathSum(node.right, sum);
```

```
}
```

^ | v • Reply • Share ›



**Harish kumar** → TechPrep • a year ago

bool hasPathSum(Node *node, int sum)

```

{
//Your code here

if(node==NULL)
{
return (sum==0);
}

sum=sum-node->data;

if(sum==0 && node->left==NULL &node->right==NULL)
{
return true ;
}

else{
if(sum!=0){
return hasPathSum(node->left,sum)||hasPathSum(node->right,sum); }
}
^ | v • Reply • Share ›

```

**Arnab Sen** → TechPrep • a year ago

```

if (node == null) {
return (sum == 0);
}
this part has the problem... It should be return false.
^ | v • Reply • Share ›

```

**Saurav Gupta** • a year ago

atleast use g++ compiler for c++

^ | v • Reply • Share ›

**Himanshu Nagpure** • a year ago

Can anyone please upload working code for the problem in c++?

^ | v • Reply • Share ›

**anmol midha** • a year ago

/* A binary tree node

```

struct Node
{
int data;
struct Node* left, * right;
}; */

/*you are required to
complete this function */
bool hasPathSum(Node *node, int sum)
{

static int s=0;
bool n,n1;

if(node == NULL)
return false;

```



[see more](#)[^](#) | [v](#) • [Reply](#) • [Share](#) ›**mytechspaze.com** → anmol midha • a year ago

Hi anmol, you are using static variable so the added sum will be visible on all leaf node. You should consider decreasing the value of "s" too.

issue right now is :

```
1
||
2 3
```

On node 1 s = 3 when recursion moves to right sub-tree. but it should be 1

[^](#) | [v](#) • [Reply](#) • [Share](#) ›**RISHAV KUMAR** • a year ago

Run Time Error:

Exception in thread "main" java.lang.NoSuchMethodError: GfG.hasPathSum(LNode;I)Z

at PathSum.main(PathSum.java:68)

A very common problem.. how to fix? @GeeksForGeeks

[^](#) | [v](#) • [Reply](#) • [Share](#) ›**Amit Khandelwal** → RISHAV KUMAR • a year ago

Hey Rishav, you are calling a wrong function.

please call hasPathSum() in place of haspathSum()

[^](#) | [v](#) • [Reply](#) • [Share](#) ›**Pranit Chugh** • a year ago

@Amit Khandelwal

@komal thakur

@vaibhav29

@abhinav

@Abhilash

@BlahBlahBlah

@AV

@Hemal Patel

@Shubham Joshi

@GeeksforGeeks

Can anyone please help me?

<http://code.geeksforgeeks.o...>

whats wrong with my function?

Its showing correct in my personal IDE, while not here.

[^](#) | [v](#) • [Reply](#) • [Share](#) ›**Pranjal Verma** • 2 years ago

Throwing error in java:

NoSuchMethodError: GfG.hasPathSum(LNode;I)Z at PathSum.main(PathSum.java:68)

???Why?

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Use (sum-node.data) instead of (sum-root.data) in return statement.

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