**Interview 12**

**Round 1: Dsa (45min)**

[Amazon Interview Experience | 262 - GeeksforGeeks](https://www.geeksforgeeks.org/amazon-interview-experience-262/)

Ques1: [Root to leaf path sum | Practice | GeeksforGeeks](https://www.geeksforgeeks.org/problems/root-to-leaf-path-sum/1)

Your answer is correct

bool inorder(Node \*root,int sum,int currsum){

    if(root==NULL){ return false;}

    if(root->left==NULL && root->right==NULL){

        if(sum==currsum+root->data) return true;

        else return false;

}

currsum+=root->data;

bool a= inorder(root->left,sum,currsum);

bool b= inorder(root->right,sum,currsum);

currsum-= root->data;

return a || b;

}

 bool hasPathSum(Node \*root, int s) {

     int currsum = 0;

     return inorder(root,s,currsum);

}

Ques2: [Flatten Binary Tree to Linked List - LeetCode](https://leetcode.com/problems/flatten-binary-tree-to-linked-list/description/)

Your answer is incorrect

void flatten(TreeNode \*root)

{

    vector<treeNode \*> v;

    solve(root, v);

    for (int i = 0; i < v.size(); i++)

    {

        if (i < v.size() - 1)

        {

            v[i]->right = v[i + 1];

        }

        else

        {

            v[i] = NULL;

        }

        v[i]->left == NULL;

    }

}

Void solve(treeNode \*root, vector<TreeNode \*> &v)

{

    if (root == NULL)

        return;

    v.push\_back(root);

    solve(root->left, v);

    solve(root->right, v);

}

Ques3: [K Sum Paths | Practice | GeeksforGeeks](https://www.geeksforgeeks.org/problems/k-sum-paths/1)

Your answer is incorrect

#include <iostream>

#include <vector>

#include <algorithm>

using namespace std;

void inorder(Node \*root, int k, int &currsum, unordered\_map<int, bool> &mp, int &ans)

{

    if (root == NULL)

        return;

    currsum += root->data;

    if (mp[currsum - k] == true)

        ans++;

    mp[currsum] = true;

    inorder(root->left, k, currsum, mp, ans);

    inorder(root->right, k, currsum, mp, ans);

    mp[currsum] = false;

    currsum -= root->data;

}

int sumK(Node \*root, int k)

{

    unordered\_map<int, bool> mp;

    int ans = 0;

    int currsum = 0;

    inorder(root, k, currsum, mp, ans);

    Return ans;

}

int main()

{

    return 0;

}

(Bonus)Ques4: [Palindromic Partitioning | Practice | GeeksforGeeks](https://www.geeksforgeeks.org/problems/palindromic-patitioning4845/1)

**Round2: OOPS (20min)**

[40+ OOPs Interview Questions and Answers (2024) - InterviewBit](https://www.interviewbit.com/oops-interview-questions/)

**1. Which among the following operators can be used to show Polymorphism in CPP?**

Overloading <<

Overloading &&

Overloading | |

Overloading += **yours**

**2. Which among the following does not show or cannot be used, to show Polymorphism?**

Static member function **yours**

Constructor Overloading

Member function overloading

Global member function

**3. Which among the following functions represent the concept of Polymorphism?**

Class member function **yours**

Virtual function

Inline function

Undefined function

**4. What is Compile time Polymorphism and how is it different Runtime Polymorphism?**

**Good Explanation – 5/5**

**5. How much memory does a class occupy?**

**Good Explanation – 5/5**

**6. Are there any limitations of Inheritance?**

**Good Explanation – 5/5**

**7. Define a superclass?**

**Need more knowledge - 2/5**

**8. What is the difference between overloading and overriding?**

**Good but need more knowledge - 3/5**

**9. What is meant by Garbage Collection in OOPs world?**

**10. Can we run a Java application without implementing the OOPs concept?**

**Correct Answer**

1. **What is the output of the below code?**

**Your answer is correct**

#**include**<iostream>

**using** **namespace** std;

**class** **BaseClass1** {

**public**:

BaseClass1()

{ cout << " BaseClass1 constructor called" << endl; }

};

**class** **BaseClass2** {

**public**:

BaseClass2()

{ cout << "BaseClass2 constructor called" << endl; }

};

**class** **DerivedClass**: **public** BaseClass1, **public** BaseClass2 {

**public**:

DerivedClass()

{ cout << "DerivedClass constructor called" << endl; }

};

**int** **main**()

{

DerivedClass derived\_class;

**return** 0;

}

**Output:**

BaseClass1 constructor called

BaseClass2 constructor called

DerivedClass constructor called

1. What will be the output of the below code?

**Your answer is correct**

**class** **Scaler**

{

**static** **int** i;

**static**

{

System.out.println(“a”);

i = 100;

}

}

**public** **class** **StaticBlock**

{

**static**

{

System.out.println(“b”);

}

**public** **static** **void** **main**(String[] args)

{

System.out.println(“c”);

System.out.println(Scaler.i);

}

}

**Output:**

b

c

a

100

**Round 3: React Theory (20min)**

How can you optimize performance when using the Context API in large-scale applications?

Good explanation but scope for more knowledge - 4/5

Explain the difference between using the Context API and Redux for state management in React?

Good Explanation - 4/5

What are the potential pitfalls or anti-patterns to avoid when using the Context API?

Okey explanation need more knowledge - 3/5

Can you combine multiple contexts in React? If so, how would you approach this?

Need more knowledge - 2/5

What are the alternatives to the Context API for managing global state in React?

Good but need more knowledge - 3/5

**Round 4: React Coding (35min)**

**You have given a card, now you must create a functionality to switch the theme of card to light to dark using context Api only.**

**Correct Implementation - 5/5 but also try only using js, jsx**

**Card.jsx**

import React from 'react'

export default function Card() {

return (

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</a>

<div className="px-5 pb-5">

<a href="/">

<h5 className="text-xl font-semibold tracking-tight text-gray-900 dark:text-white">

Apple Watch Series 7 GPS, Aluminium Case, Starlight Sport

</h5>

</a>

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</svg>

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4.0

</span>

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<span className="text-3xl font-bold text-gray-900 dark:text-white">$599</span>

<a

href="/"

className="text-white bg-blue-700 hover:bg-blue-800 focus:ring-4 focus:outline-none focus:ring-blue-300 font-medium rounded-lg text-sm px-5 py-2.5 text-center dark:bg-blue-600 dark:hover:bg-blue-700 dark:focus:ring-blue-800"

>

Add to cart

</a>

</div>

</div>

</div>

);

}