DEBUG WITH SHUBHAM

Accenture Technical interviews Detailed Overview

14-Oct-2024 Coding Interview Questions


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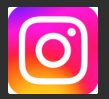
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ALL SOLUTION (C++, JAVA, PYTHON) UPLOADED IN GITHUB WITH QUESTION NAME

Question 1:- Write a program to calculate the length of a string without using the strlen() function.

Answer:-

- Program in C
- Program in C++
- Program in JAVA
- Program in Python

main.cpp

```cpp

#include <iostream>
#include <string.h>
using namespace std;
int main()
{
    int i;
    string str = "Shubham";
    for (i = 0; str[i]; i++);
    cout << i << endl;
    return 0;
}

```

main.py +

```python
def lengthOfString(string):
    cnt = 0
    for i in string:
        cnt +=1
    return cnt # 7
string = input() #shubham
print(lengthOfString(string))
```

java

```java
import java.util.Scanner;

public class Main {
    public static int lengthOfString(String str) {
        int cnt = 0;
        for (char ch : str.toCharArray()) {
            cnt++;
        }
        return cnt;
    }

    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter a string: ");
        String string = scanner.nextLine(); // shubham
        System.out.println(lengthOfString(string)); // Output: 7
    }
}
```

Question 2:- What is virtual inheritance?

Answer:-

Virtual inheritance is a C++ mechanism that assures that grandchild-derived classes inherit only one copy of a base class's member variables. If two classes B and C inherit from a class A, and class D inherits from both B and C, D will include two copies of A's member variables: one via B and the other via C. Using scope resolution, these will be available independently.

Question 3:- What is JDBC?

Answer:-

JDBC is a set of Java API for executing SQL statements. This API consists of a set of classes and interfaces to enable programs to write pure Java Database applications.

Question 4:- List the Coffman's conditions that lead to a deadlock.

Answer:-

- **Mutual Exclusion: Only one process may use a critical resource at a time.**
- **Hold & Wait: A process may be allocated some resources while waiting for others.**
- **No Pre-emption: No resource can be forcible removed from a process holding it.**
- **Circular Wait: A closed chain of processes exist such that each process holds at least one resource needed by another process in the chain.**
-

Question 5:- What are short, long and medium-term scheduling?

Answer:-

- **Long term scheduler determines which programs are admitted to the system for processing. It controls the degree of multiprogramming. Once admitted, a job becomes a process.**
- **Medium term scheduling is part of the swapping function. This relates to processes that are in a blocked or suspended state. They are swapped out of real-memory until they are ready to execute. The swapping-in decision is based on memory-management criteria.**
- **Short term scheduler, also know as a dispatcher executes most frequently, and makes the finest-grained decision of which process should execute next. This scheduler is invoked whenever an event occurs. It may lead to interruption of one process by preemption.**

Question 6:- What is diamond problem in JAVA?

Answer:-

Diamond problem also known as deadly diamond problem or deadly diamond of death, occurs when multiple inheritance is conducted in JAVA. JAVA does not support multiple inheritance, and therefore consequently leads to a compilation error if attempted.

Question 7:- What is AVL tree?

Answer:-

AVL stands for Adelson Velskii and Landis. In a binary search tree, if the difference between height of the left and right subtrees is at most one, it is known as AVL tree.

Question 8:- Define Linked List.

Answer:-

Linked List is a linear data structure where data is stored sequentially.

Question 9:- What is an overflow error?

Answer:-

Overflow errors occur when a program is given an input outside its scope.

Question 10:- Write a code for octal to decimal conversion.

Answer:-

- Program in C
- Program in C++
- Program in JAVA
- Program in Python

main.py

```python
def octalToDecimal(n):
    num = n
    dec_value = 0
    base = 1
    temp = num
    while (temp):
        last_digit = temp % 10
        temp = int(temp / 10)
        dec_value += last_digit * base
        base = base * 8
    return dec_value
num = 123
print(octalToDecimal(num))

```

main.cpp

```cpp
#include <iostream>
using namespace std;
int octalToDecimal(int n)
{
    int num = n;
    int dec_value = 0;
    int base = 1;

    int temp = num;
    while (temp) {
        int last_digit = temp % 10;
        temp = temp / 10;
        dec_value += last_digit * base;
        base = base * 8;
    }
    return dec_value;
}
int main()
{
    int num = 123;
    cout << octalToDecimal(num) << endl;
}

```

Main.java

```java

import java.io.*;
class debug {
    static int octalToDecimal(int n)
    {
        int num = n;
        int dec_value = 0;
        int base = 1;
        int temp = num;
        while (temp > 0) {
            int last_digit = temp % 10;
            temp = temp / 10;
            dec_value += last_digit * base;
            base = base * 8;
        }
        return dec_value;
    }
    public static void main(String[] args)
    {
        int num = 67;
        System.out.println(octalToDecimal(num));
    }
}

```