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From .Net C# technical intervews coding puzzle: In-Memory File System Simulator

Problem Description

Create a simple in-memory file system using C# that allows for the creation, deletion, and querying of files and directories. The file system should support operations to add a file with content, delete files, create directories, list the contents of a directory, and read the content of a file.

Steps to Solve the Problem

1) Define Classes: Create classes for Directory and File with necessary properties and methods.

2) Create File System Class: Implement a FileSystem class that manages the directories and files.

3) Add Operations: Implement methods for creating, deleting, listing, and reading files and directories.

4) Test: Write a few test cases to ensure your file system works as expected.

Bellow attached solution skeleton image.

For full solution please follow Github link: **https://lnkd.in/dXsq-RQf**

Feel free to extend it or modify it to add more complex functionalities, such as handling permissions or larger I/O operations! 🚀 **#CodingChallenge #DotNet #TechInterviewPrep #Csharp**

```
using System;
using System.Collections.Generic;
using System.Linq;

public class File
{
    public string Name { get; set; }
    public string Content { get; set; }

    public File(string name, string content)
    {
        Name = name;
        Content = content;
    }
}

public class Directory
{
    public string Name { get; set; }
    public Dictionary<string, File> Files { get; private set; }
    public Dictionary<string, Directory> Directories { get; private set; }

    public Directory(string name)
    {
        Name = name;
        Files = new Dictionary<string, File>();
        Directories = new Dictionary<string, Directory>();
    }

    public void AddFile(string fileName, string content){ }

    public void AddDirectory(string dirName) { }

    public File GetFile(string fileName){}

    public Directory GetDirectory(string dirName){}

    public bool DeleteFile(string fileName){}

    public bool DeleteDirectory(string dirName){ }

    public void ListContents(){
}

public class FileSystem
{
    private Directory root;

    public FileSystem()
    {
        root = new Directory("root");
    }

    public void CreateFile(string path, string content) { }

    public void CreateDirectory(string path){ }

    public void DeleteFile(string path){}

    public void ListDirectoryContents(string path){}

    public string ReadFile(string path){}
}

class Program
{
    static void Main(string[] args)
    {
        FileSystem fs = new FileSystem();
        fs.CreateDirectory("Documents");
        fs.CreateFile("Documents/Resume.txt", "Experienced .NET Developer");
        Console.WriteLine(fs.ReadFile("Documents/Resume.txt")); // Should output the content of the Resume.txt
        fs.ListDirectoryContents("Documents"); // Should list 'Resume.txt'
    }
}
```