using System;

using System.Collections.Generic;

using System.IO;

using System.Linq;

using System.Text;

using Sys = Cosmos.System;

namespace CosmosKernel1

{

public class Kernel : Sys.Kernel

{

private Dictionary<string, string> fileSystem;

private HashSet<string> permissions;

protected override void BeforeRun()

{

Console.WriteLine("Welcome to Fardin Roktim Mims Operating System.");

Console.WriteLine("Type a line of text to get it echoed back.");

fileSystem = new Dictionary<string, string>();

permissions = new HashSet<string>();

}

protected override void Run()

{

Console.Write("Input: ");

var input = Console.ReadLine();

Console.WriteLine($"You typed: \"{input}\"");

string[] commandParts = input.Split(' ');

try

{

if (commandParts.Length == 5 && commandParts[0] == "fardin" && commandParts[1] == "roktim" && commandParts[2] == "mim" && commandParts[3] == "+x")

{

string fileName = commandParts[4];

permissions.Add(fileName);

Console.WriteLine($"Permission granted for file '{fileName}'.");

}

else if (commandParts.Length >= 2 && (commandParts[0] == "read" || commandParts[0] == "update" || commandParts[0] == "delete" || commandParts[0] == "echo"))

{

string fileName = commandParts[1];

if (permissions.Contains(fileName))

{

if (commandParts[0] == "read")

{

ReadFile(fileName);

}

else if (commandParts[0] == "update")

{

string newContent = string.Join(" ", commandParts, 2, commandParts.Length - 2);

UpdateFileContent(fileName, newContent);

}

else if (commandParts[0] == "delete")

{

DeleteFile(fileName);

}

else if (commandParts[0] == "echo")

{

string content = string.Join(" ", commandParts, 2, commandParts.Length - 2);

EchoToFile(fileName, content);

}

}

else

{

Console.WriteLine($"No permission granted for file '{fileName}'.");

}

}

else if (commandParts.Length >= 2 && commandParts[0] == "mkdir")

{

string fileName = commandParts[1];

CreateEmptyFile(fileName);

}

else if (commandParts.Length >= 3 && commandParts[0] == "create")

{

string fileName = commandParts[1];

string content = string.Join(" ", commandParts, 2, commandParts.Length - 2);

CreateFile(fileName, content);

}

else if (commandParts.Length == 3 && commandParts[0] == "rename")

{

string oldFileName = commandParts[1];

string newFileName = commandParts[2];

RenameFile(oldFileName, newFileName);

}

else if (input == "ls")

{

ListFiles();

}

else if (input == "shutdown")

{

Shutdown();

}

else if (input == "date")

{

ShowDate();

}

else if (input == "time")

{

ShowTime();

}

else

{

Console.WriteLine("Command not recognized or insufficient permissions.");

}

}

catch (Exception ex)

{

Console.WriteLine($"Error: {ex.Message}");

}

}

private void CreateEmptyFile(string fileName)

{

if (!fileSystem.ContainsKey(fileName))

{

fileSystem.Add(fileName, "");

Console.WriteLine($"Empty file '{fileName}' created successfully.");

}

else

{

Console.WriteLine($"File '{fileName}' already exists.");

}

}

private void CreateFile(string fileName, string content = "")

{

if (!fileSystem.ContainsKey(fileName))

{

fileSystem.Add(fileName, content);

Console.WriteLine($"File '{fileName}' created successfully.");

}

else

{

Console.WriteLine($"File '{fileName}' already exists.");

}

}

private void ReadFile(string fileName)

{

if (fileSystem.ContainsKey(fileName))

{

Console.WriteLine($"Content of file '{fileName}': {fileSystem[fileName]}");

}

else

{

Console.WriteLine($"File '{fileName}' not found.");

}

}

private void DeleteFile(string fileName)

{

if (fileSystem.ContainsKey(fileName))

{

fileSystem.Remove(fileName);

Console.WriteLine($"File '{fileName}' deleted successfully.");

}

else

{

Console.WriteLine($"File '{fileName}' not found.");

}

}

private void ListFiles()

{

Console.WriteLine("List of files:");

foreach (var fileName in fileSystem.Keys)

{

Console.WriteLine(fileName);

}

}

private void EchoToFile(string fileName, string content)

{

if (fileSystem.ContainsKey(fileName))

{

fileSystem[fileName] += content;

Console.WriteLine($"Content echoed to file '{fileName}' successfully.");

}

else

{

Console.WriteLine($"File '{fileName}' not found.");

}

}

private void UpdateFileContent(string fileName, string newContent)

{

if (fileSystem.ContainsKey(fileName))

{

fileSystem[fileName] = newContent;

Console.WriteLine($"Content of file '{fileName}' updated successfully.");

}

else

{

Console.WriteLine($"File '{fileName}' not found.");

}

}

private void RenameFile(string oldFileName, string newFileName)

{

if (fileSystem.ContainsKey(oldFileName))

{

string fileContent = fileSystem[oldFileName];

fileSystem.Remove(oldFileName);

fileSystem.Add(newFileName, fileContent);

Console.WriteLine($"File '{oldFileName}' renamed to '{newFileName}' successfully.");

}

else

{

Console.WriteLine($"File '{oldFileName}' not found.");

}

}

private void Shutdown()

{

Console.WriteLine("Shutting down the system...");

Cosmos.System.Power.Shutdown();

}

private void ShowDate()

{

Console.WriteLine($"Current date: {DateTime.Now.ToShortDateString()}");

}

private void ShowTime()

{

Console.WriteLine($"Current time: {DateTime.Now.ToShortTimeString()}");

}

}

}