Cortica Testing Questions

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Overview

The following document lists questions to be asked Cortica Employee candidates.

Important notes:

- Use coherent names in code.
- Make sure code compiles.
- For each class implement a test application which runs it.
- Deliver fully functioning application and the source code.
- Keep OOP in mind when designing the code.
- Keep performance in mind when designing the code.
- Keep boundary cases in mind when designing the code.
- Always validate user input.
- Handle exceptions.
- Use coherent notifications and readouts.
- Use any of the following programming languages: C# / C++ / Python
- All applications should be repeatable (Given the same input, the application should behave exactly the same always, and produce the same output).
- Keep in mind input may be big (files contain a lot of data, or there could be a large quantity of files)

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In Every Image

Task #1: Multithreaded matching

Scenario:

We have 2 directories which contain CSV files.

We need to be able to determine which CSV files in the 1st directory are similar to CSV files in the 2nd directory.

Definitions:

- Two directories, each containing CSV files.
- Each CSV files contains a sorted (Ascending) set of integer numbers (1 row only).
- A CSV file is considered “similar” to another CSV file if both files contain at least X of the same numbers.

Desired function:

We want to copy all CSV files from directory “A”, which are similar to at least 1 csv file in directory “B”, to directory “C”

Instruction:

Write a class which handles, in multi-threading, the loading, “similarity” testing and copying of files

The class should have a method which returns VOID and receives 3 strings (A,B & C, each a directory path) and an int (X, minimal amount of equal numbers).

This method should also write a “scores.txt” file in directory C which contain a line for every copied file from directory A. the line should like: “<name of file> <tab> <maximum intersection score>