

Exercise	PRO.3.7B
Project	CountFilesOnDisk Download (or clone) this project https://github.com/rf21da2b1-1b/CountFilesOnDisk
Purpose	Change the execution of an I/O-consuming calculation to use Tasks , to decrease the absolute running time.
Description	<p>The project contains in the worker class a method Scan, which count the number of files on your 'C'-drive.</p> <p>Look at the code, initially Starts find all dictionaries in the root, then call Scan on each dictionary.</p> <p>The Scan method will recursively scan all dictionaries and for each count the number of files.</p>
Steps	<ol style="list-style-type: none"> 1. Run the program ... this can takes several minutes remember the elapsed time and the number of files (make a note). 2. You are an impatient person, so your job is to improve the execution time by using Task. 3. In the Start-Method <ol style="list-style-type: none"> a. Instantiate a list of task <code>(List<Task> tasks = new List<Task>())</code> b. In the foreach-loop start each Scan in a task <code>(tasks.Add (Task.Run(()=> Scan(dic))))</code> c. After the foreach-loop wait for all tasks to complete their job <code>(Task.WaitAll(tasks.ToArray())</code> d. Create an object as an instance field <code>(private object lockObj = new object();)</code> Lock the incrementing of the noOfFiles <code>(lock (lockObj)</code> <pre> { noOfFiles += Directory.GetFiles(path).Length; } </pre> 4. Compare the running time of your new version with the original version. How much faster is your version?

Extra

- i. Can you make the program even faster
- ii. Run your program from the folder
look the file at eg.:
`"..\repos\CountFilesOnDisk\CountFilesOnDisk\bin\Debug\net5.0\ CountFilesOnDisk.exe"`
- iii. Try to run the program as administrator. Any differences? If yes why?