1. PEAS
   * Performance Measure – File found or not found and the time to find the file
   * Environment: File system
   * Actuators- method that opens the files, method that collects time
   * Sensor- Method that compares two file names and stops the timer when the file is found
2. Searching
   * Observable – Fully – We were fully able to observe the file structure from top to bottom
   * Agents – Single – There is one method or agent working at a time to solve the problem
   * Deterministic – The file structure did not change and there was no uncertainty
   * Sequential – There was a memory of where the file had already searched so that it did not double back and research the same directories or files.
   * Static – The environment did not change while we were working on it. It remained static
   * Discrete- There was not a continuum of values. The values were finite
   * Known – The behavior of the environment is predictable and known by the agent
3. The state space of the problem is a file system with a hierarchy of nested directories that possibly contain files. Each directory can be opened to reveal files, more directories, or nothing. The file structure is not balanced. Each branch of the file system is of a varying size to other sister branches.

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|  | Fastest Search (ms) | Reason/Decision |
| 9Asg7cK.bin | Depth First 148.599 | Depth first search performed better because the files were nested deep inside a very wide file structure. The file also happened to be nested in a branch that was one of the first branches assessed. |
| XUB.bin | Depth First 3.602 | Although the file’s placement was deeper in the file structure the algorithm was able to find it quickly because of its location on a far left branch. |
| yFTPOz.bin | Breadth First 1.9 | This file was located not very deep in the file structure, but far enough to the right to take the depth first search a long time to get to the bottom of the branch before it was able to reach this file. |

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| Search Type | File Name | Average Search Time (ms) | Reason |
| Breadth First Search | XUB.bin | 578.48 | This file was nested deep into the file structure closer to the bottom. The breadth first search had to search all the files across the system before it was able to reach the file. |
| Depth First Search | yFTPOz.bin | 309.005 | This file was not very low in the file structure, but far enough away from the left side file systems to make reaching it by going across the file structure more effective. |