

rock

★ 5276

Last Edit: August 27, 2019 9:18 AM

2.0K VIEWS

33

If `path` already exist or its parent path non-exist, return false; Otherwise, create a new path and value.

Java

```
Map<String, Integer> file = new HashMap<>();

public FileSystem() {
    file.put("", -1);
}

public boolean create(String path, int value) {
    int idx = path.lastIndexOf("/");
    String parent = path.substring(0, idx);
    if (!file.containsKey(parent)) { return false; }
    return file.putIfAbsent(path, value) == null;
}

public int get(String path) {
    return file.getOrDefault(path, -1);
}
```

Python 3

```
def create(self, path: str, value: int) -> bool:
    parent = path[:path.rfind('/')]
    if parent in self.d and path not in self.d:
        self.d[path] = value
        return True
    return False

def get(self, path: str) -> int:
    return self.d.get(path, -1)
```

Analysis:

Time & Space:
create(): $O(\text{path.length()})$, get(): $O(1)$.

space:
file():
In worst case, e.g., `path = "/a/b/c/d/e/f/g/..."`, all the path family cost $2 + 4 + 6 + \dots + 2n = n * (n + 1)$. So the space cost $O(\text{path.length()} ^ 2)$.

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Post

yuanb10

★ 664

August 26, 2019 5:08 AM

Thanks for sharing. The best part of this solution is the use of putIfAbsent. The default implementation of putIfAbsent is equivalent to, for this map:

```
V v = map.get(key);
if (v == null)
    v = map.put(key, value);

return v;
```

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yolo31

★ 144

Last Edit: February 26, 2020 9:51 AM

Can someone please explain why space complexity is $O(\text{path.length}() ^ 2)$?
I think it space complexity should be $O(\text{number of paths})$. Since we will be storing all paths in Map
Please correct me if i am wrong

0

Reply

LaoCai

★ 0

January 26, 2020 9:32 PM

```
/*
c++ version
*/

class FileSystem {
public:
    /*
    If path already exist or its parent path non-exist, return false; Otherwise, create a new path and value.
    */
    unordered_map<string, int> file;
    FileSystem() {
        Read More
    }
};
```

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Reply

joker452

★ 5

January 3, 2020 6:22 AM

The description says that the path should be composed of lowercase English letters only, and the constraints don't include that. I think we should check the input to ensure it only contains lowercase English letters.

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Reply

skateboard.p

★ 16

August 25, 2019 2:57 AM

how to analyze runtime / space for this one?

0

Reply

lucky-seven

★ 0

August 25, 2019 1:49 AM

Nice!

0

Reply