Key:

m = number of items owned by an address

n = total number of items owned by everyone

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Version | Create | Item by ID | Invent by Adr | Update by ID | Transfer |
| 1 | O(1) | O(n) | O(1) | O(m) | O(m) |
| 2 | O(1) | O(1) | O(m) | O(m) | O(m) |
| 3 | O(1) | O(1) | O(n) | O(1) | O(1) |
| 4 | O(1) | O(1) | O(n) | O(m) | O(1) |

Update by ID and Transfer requires checking that you own the item before, this is included here