O(log(N))

Code Example

To avoid covering binary searches, this is not a practical code example, but purely demonstrates the concept of O(log(N)).

In 24 iterations, the algorithm reduces the input from over 16 million to 1

```javascript
let n = 16777216

log(n)

function log(n) {
  let j = 0
  for (let i = n; i > .999; i /= 2) {
    let result = i;
    console.log(`The result of iteration ${j} is ${result}`)
    j++
  }
}
```

```
The result of iteration 0 is 16777216
The result of iteration 1 is 8388608
The result of iteration 2 is 4194304
The result of iteration 3 is 2097152
The result of iteration 4 is 1048576
The result of iteration 5 is 524288
The result of iteration 6 is 262144
The result of iteration 7 is 131072
The result of iteration 8 is 65536
The result of iteration 9 is 32768
The result of iteration 10 is 16384
The result of iteration 11 is 8192
The result of iteration 12 is 4096
The result of iteration 13 is 2048
The result of iteration 14 is 1024
The result of iteration 15 is 512
The result of iteration 16 is 256
The result of iteration 17 is 128
The result of iteration 18 is 64
The result of iteration 19 is 32
The result of iteration 20 is 16
The result of iteration 21 is 8
The result of iteration 22 is 4
The result of iteration 23 is 2
The result of iteration 24 is 1
```

O(N²)

Quadratic Complexity (Also written as O(N^2)