$N = 1000$

i

1 digit = $1000 - [\ ]$ $\quad 1 - 1$

2 digit = $1000 - 9$ $\quad 10 - 1$

3 digit = $1000 - 99$ $\quad 100 - 1$

4 = $1000 - 999$

5 = $1000 - 9999$ $\quad i - 1$

$\rightarrow [N - (10^{i-1} - 1)]$ $\quad i - 1 \geq n$

10
100
1000

1 [25 +
2 25 − 9 +
3 : 25 − 99 − x

$25 + 25 - 9 = 41$

$n - (i-1) > 0$

$n > i - 1$

$i - 1 < n$

[TODO: Find the no. of set bits in all nos. from 0 to N.]

000
001
010
011
100
101
110
111
1000
1001
1010
1011
1100
1101
1110
1111

N≥9999

1
2
3
4
5
⋮
9
10
11
12
⋮
99
100
101
102
⋮
999
1000

N−999 N−99 N−9 N

$n = 17$

2 - - - 16

BF = $O(n)$

$n \quad i$

$n \% i = 0$

$n = 16$

$x\left(> \frac{n}{2}\right) \times 2$

Fact: Factors of any no. always occur in pairs.

$n = 15$: 1, 3, 5, 15

$n = 20$: 1, 2, 4, 5, 10, 20

$n = 36$: 1, 2, 3, 4, 6, 9, 12, 18, 36

$36 = 6 \times 6$

$i^2 \leq n$

$i \leq \sqrt{n}$

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