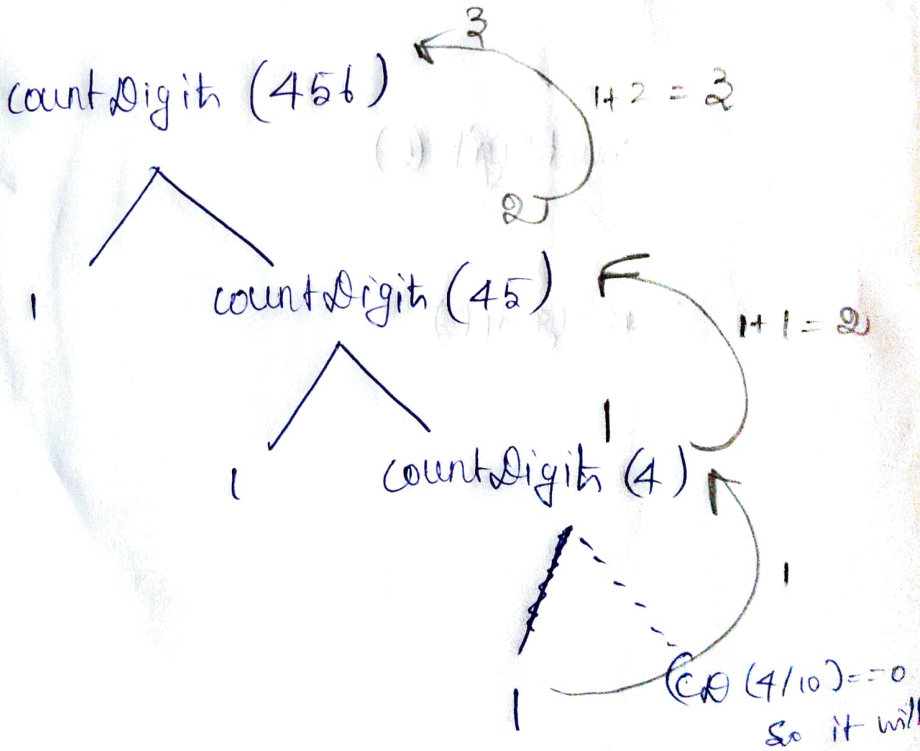
Approach - 2

Recursion Approach

```
int countDigit(int n)
{
    if (n/10 == 0)
        return 1
    return 1 + countDigit(n/10);
}
```

Tracing :

Recursion Tree method



Level by level method

Level 1 :

countDigit(456)

condition : 456/10 = 45 != 0

Action : 1 + countDigit(45)

(It pauses here and wait for result of countDigit(45))

Level 2 :

countDigit(45)

condition : 45/10 = 4 != 0

Action : 1 + countDigit(4)

It pauses here and wait for result of countDigits(4)

Level 3 :

countDigit(4)

condition : 4/10 = 0 = 0

Action : returns 1

Level 3 passes value of 1 to Level 2 countDigits(4 s)

1 + 1 = 2 (1 + countDigit(4)
1 + 1 = 2)

Level 2 passed value of 2 to level 1 countDigits(4 is)

2 + 1 = 3

Final return value : 3