4.3 Reverse Bits

Reverse bits of a given 32 bits unsigned integer (LeetCode)

```
def reverse(n):
    result = 0
    pos = 31 # for 32 bits
    while n:
        result += (n&1)<<pos
        n = n>>1
        pos -=1
    return result
```

reverse bits one by one

1. extract the right most bit (use AND operation here)
2. append to the result variable

- Iterate through the bit string of the input integer, from right to left (i.e. n= n>>1). To retrieve the right-most bit of an integer, we apply bit AND operation (n&1)

- For each bit, we reverse it to the correct position (i.e (n&1) << power) then we accumulate this reversed bit to the result variable

O(1) Time Complexity → since the input is the integer of fixed-size (32 bits)

O(1) space Complexity