Daily Coding Problem #85

Problem

This problem was asked by Facebook.

Given three 32-bit integers x, y, and b, return x if b is 1 and y if b is 0, using only mathematical or bit operations. You can assume b can only be 1 or 0.

Solution

We can solve this problem by seeing that if we multiply x with b, it solves half the problem. Since we want y to behave in opposite, we can get the same behavior by multiplying y with `(1 - b)`.

Now, `(x * b)` gives x when b is `1` and `0` otherwise. Similarly, `(y * (1 - b))` gives y when b is `0` and `0` otherwise. We can just combine the two formulas with either a + or |,

```
def switch(x, y, b):
  return (x * b) | (y * (1 - b))
```