

## Bit Manipulation

(Assignment Solutions)

## Question 1:

```
void clearBitsInRange(int num, int i, int j) {
  int a = (~0) << (j+1);
  int b = (1 << i) - 1;

  int mask = a | b;
  num = num & mask;

  cout << num << endl;
}</pre>
```

## Question 2:

```
int singleNumber(vector<int>& nums) {
    int answer = 0
    for(int i=0; i<nums.size(); i++) {
        answer ^= nums[i];
    }
    return answer;
}</pre>
```

## Question 3:

```
int xorBeauty(vector<int>& nums) {
    int a = 0, b = 0;
    for(int i=0; i<nums.size(); i++) {
        a = a | nums[i];
        b = b ^ nums[i];
    }
    return ( a & b );
}</pre>
```