lec-43

```
public static void main(String[] args) {
    // TODO Auto-generated method stub
    System.out.println(n<<3);
    System.out.println(n>>3);
    int n1 = n>>3;
    System.out.println(n1<<3);
}
```

A magic number is defined as a number which can be expressed as a power of 5 or sum of unique powers of 5. First few magic numbers are 5, 25, 30(5 + 25), 125, 130(125 + 5), ...

Write a function to find the nth Magic number.

Example:

Input: n = 2
Output: 25
Input: n = 5
Output: 130

```
public static int INDEX(String str) {
    int n = str.length();
    int count = (1 << n) - 2;// n-1 digit tk ka saara count aayega
    int[] arr = {};
    for (int i = n - 1; i >= 0; i--) {
        if (str.charAt(i) == '1') {
            count = count + (1 << pos);
        }
        pos++;
    }
    return count + 1;
}
```

```
public static int[] single_Number(int[] arr) {
    int xns = 0;
    for (int i = 0; i < arr.length; i++) {
        xns = xns ^ arr[i];
    }
    int mask = 1;//-1 gli h
    int[] ans = {};
    for (int i = 0; i < arr.length; i++) {
        if (((arr[i] & mask) != 0) {
            a ^= arr[i];
        }
    }
    int b = ans ^ xs;// ans ^= a^b^a^b
    int[] ar = { a, b };
    return ar;// new int[] { a, b };
}
```