Vinit and his Special Number

Vinit is a coach at Rails Girls Summer Of Code. He is very fond of numbers. Recently he has coined a term for numbers : **Special Number**.

According to him, a number is known as **special number** if its binary representation contains atleast two consecutive 1's or set bits. For example **7** with binary representation **111** is a special bit number. Similarly **3(11)** is also a special bit number as it contains atleast two consecutive set bits or ones.

Now the problem is, You are given an Array of **N** integers and **Q** queries. Each query is defined by two integers ***L, R***. You have to output the count of special bit numbers in the range **L** to **R**.

Input Format

First line contains integer **N**, no of Array elements and **Q** - Total Number of Queries.

Next line contains **N** integers ***A[i]*** defining Array elements.

Next **Q** lines contains Queries of the type **1<=L<=R<=N.**

Constraints

$0<=A[i]<=10^9$
$1<=N<=10^5$
$1<=Q<=10^5$

Output Format

Output **Q** lines containing answer for the i^{th} Query.

Sample Input 0

```
5 3
3 5 1 12 7
1 3
2 3
1 5
```

Sample Output 0

```
1
0
3
```

Submissions: 13
Max Score: 20

Difficulty: Medium

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Current Buffer (saved locally, editable) C++

```cpp
#include <cmath>
#include <cstdio>
#include <vector>
#include <iostream>
#include <algorithm>
using namespace std;


int main() {
    /* Enter your code here. Read input from STDIN. Print output to STDOUT */
    return 0;
}
```

Line: 1 Col: 1

Upload Code as File Test against custom input Run Code Submit Code