

CRACK A HACK

EVEN ODD QUERY

Course: ALGORITHMIC PROBLEM SOLVING

Course code: 17ECSE309

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Problem:

You are given an array A of size N.

The query contains 2 integers x and y, and you need to find whether the value find(x,y) is Odd or Even:

find (int x, int y)

{

 if (x>y) return 1; ans =

pow(A[x], find (x+1, y))

return ans;

}

Example:

3 2 7 1 2 find

(1,2) = Odd

Solution Approach:

Odd to power any number is odd. Even to power any number is even.

The only problem arises when even to power 0 is there. This is taken care by checking whether the next element is zero. Before checking for zero another condition has to be taken care of that is whether $x == y$.

Code in c:

```
#include <stdio.h> #include
<math.h>

int *arr = (int *) malloc (100000 * sizeof (int));

int find (int x,int y){    if (arr[x-1] %2)
return 1;    if (x == y)    return 0;    if
(arr[x] == 0)    return 1;    return 0; } int
main () {    int t,x,y,n;    scanf("%d",&t);
for(int i = 0; i < t; i++)
scanf("%d",&arr[i]);    scanf("%d",&n);
for(int i = 0; i < n; i++){        scanf("%d
%d",&x,&y);        int value = find(x,y);
if(value)        printf("Odd\n");        else
printf("Even\n");
    }
}
```

References

1. discuss.codechef.com/questions
2. [geeks-for-geeks](https://www.geeksforgeeks.org/)
3. brilliant.org/wiki/even-and-odd-numbers/