CP Club 365Days Challenge

Date – 25/11/2022
Programming language – C

Problem Statement

https://www.hackerrank.com/challenges/utopian-tree/problem?isFullScreen=true

	Marwadi University
	Marwadi University
	Faculty of Technology
	Department of Information and Communication Technology
Sem : 3	**Name : VEDANT BHARAD**
Day : 36	**Date : 25/11/2022**	**Enrollment No: 92100133023**

Your Code:

```c
// 0x39Day of 0x365Days challenge
// VEDANT BHARAD
// 25-11-2022
#include <assert.h>
#include <ctype.h>
#include <limits.h>
#include <math.h>
#include <stdbool.h>
#include <stddef.h>
#include <stdint.h>
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
char *readline();
char *ltrim(char *);
char *rtrim(char *);
int parse_int(char *);
int utopianTree(int n)
{
    int h=0;
    for(int loop=0;loop<=n;loop++){
        if(loop%2==0){
            h++;
        }
        else{
            h=h*2;
        }
    }
    return h;
}
int main()
{
    FILE *fptr = fopen(getenv("OUTPUT_PATH"), "w");
    int t = parse_int(ltrim(rtrim(readline())));
    for (int t_itr = 0; t_itr < t; t_itr++)
    {
        int n = parse_int(ltrim(rtrim(readline())));
        int result = utopianTree(n);
        // fprintf(fptr, "%d\n", result);
        printf("%d\n", result);
    }
    fclose(fptr);
    return 0;
}
char *readline()
{
    size_t alloc_length = 1024;
    size_t data_length = 0;
    char *data = malloc(alloc_length);
    while (true)
    {
        char *cursor = data + data_length;
```

```c
        char *line = fgets(cursor, alloc_length - data_length, stdin);
        if (!line)
        {
            break;
        }
        data_length += strlen(cursor);
        if (data_length < alloc_length - 1 || data[data_length - 1] == '\n')
        {
            break;
        }
        alloc_length <<= 1;
        data = realloc(data, alloc_length);
        if (!data)
        {
            data = '\0';
            break;
        }
    }
    if (data[data_length - 1] == '\n')
    {
        data[data_length - 1] = '\0';
        data = realloc(data, data_length);
        if (!data)
        {
            data = '\0';
        }
    }
    else
    {
        data = realloc(data, data_length + 1);
        if (!data)
        {
            data = '\0';
        }
        else
        {
            data[data_length] = '\0';
        }
    }
    return data;
}
char *ltrim(char *str)
{
    if (!str)
    {
        return '\0';
    }
    if (!*str)
    {
        return str;
    }
    while (*str != '\0' && isspace(*str))
    {
```

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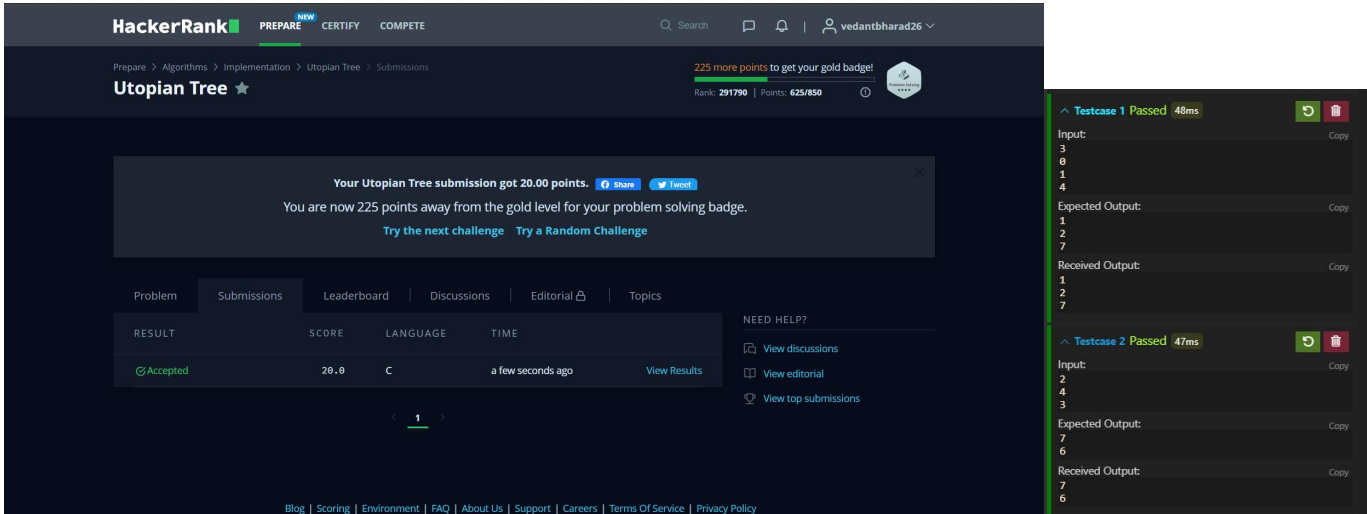
```c
        str++;
    }
    return str;
}
char *rtrim(char *str)
{
    if (!str)
    {
        return '\0';
    }
    if (!*str)
    {
        return str;
    }
    char *end = str + strlen(str) - 1;
    while (end >= str && isspace(*end))
    {
        end--;
    }
    *(end + 1) = '\0';
    return str;
}
int parse_int(char *str)
{
    char *endptr;
    int value = strtol(str, &endptr, 10);
    if (endptr == str || *endptr != '\0')
    {
        exit(EXIT_FAILURE);
    }
    return value;
}
```

Output (Screen Shot):

Understanding about problem:

1. In this task there will be two input first is number of test case and second is number of cycles n.

2. In this task I need to calculate height after every n+1 height will be height+1 if n is even else height*2.

Note: If you can't understand the problem, feel free to contact us and we'll help you. Please don't copy and paste from anywhere.

ALL THE BEST
Team CP Club