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#include <stdio.h>

#include <string.h>

#include <math.h>

#include <stdlib.h>

struct node{

int data;

struct node\* left;

struct node\* right;

};

void printCurrentLevel(struct node\* root, int level);

int height(struct node\* node);

struct node\* newNode(int data);

struct node\* newNode(int data){

struct node\* node=(struct node\*)malloc(sizeof(struct node));

node->data=data;

node->left=NULL;

node->right=NULL;

return node;

}

void printLevelOrder(struct node\* root)

{

int h = height(root);

int i;

for (i = 1; i <= h; i++)

printCurrentLevel(root, i);

}

void printCurrentLevel(struct node\* root, int level)

{

if (root == NULL)

return;

if (level == 1)

printf("%d ", root->data);

else if (level > 1) {

printCurrentLevel(root->left, level - 1);

printCurrentLevel(root->right, level - 1);

}

}

int height(struct node\* node)

{

if (node == NULL)

return 0;

else {

int lheight = height(node->left);

int rheight = height(node->right);

if (lheight > rheight)

return (lheight + 1);

else

return (rheight + 1);

}

}

struct node\* insert(struct node\* node,int data){

if(node==NULL)

return newNode(data);

if(data%4==0)

node->left=insert(node->left,data);

else

node->right=insert(node->right,data);

return node;

}

int main() {

/\* Enter your code here. Read input from STDIN. Print output to STDOUT \*/

int t,n,i;

scanf("%d",&t);

int arr[1000];

while(t--){

struct node\* root=NULL;

scanf("%d",&n);

for(i=0;i<n;i++){

scanf("%d",&arr[i]);

}

root=insert(root,arr[0]);

for(i=1;i<n;i++){

insert(root,arr[i]);

}

// scan("\n");

printLevelOrder(root);

printf("\n");

}

return 0;

}