LAB PROGRAM 5

/\* Given an array of elements, construct a complete binary tree from this array in level order fashion.

that is elements from left in the array will be filled in the tree level wise starting from level 0.

Ex: Input arr[]={1,2,3,4,5,6}

output: Root of the following tree

1

/ \

2 3

/\ /\

4 5 6

\*/

#include<stdio.h>

#include<stdlib.h>

struct Node

{

int data;

struct Node\* left, \* right;

};

struct Node\* newNode(int data)

{

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

node->data = data;

node->left = node->right = NULL;

return (node);

}

struct Node\* insertLevelOrder(int arr[],int i, int n)

{

struct Node \*root =NULL;

if (i < n)

{

root = newNode(arr[i]);

root->left = insertLevelOrder(arr,2 \* i + 1, n);

root->right = insertLevelOrder(arr,2 \* i + 2, n);

}

return root;

}

void inOrder(struct Node\* root)

{

if (root != NULL)

{

inOrder(root->left);

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

inOrder(root->right);

}

}

int main()

{

int arr[20],n,i;

printf("Enter the number of nodes\n");

scanf("%d",&n);

printf("Enter the tree node elements\n");

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

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

struct Node\* root = insertLevelOrder(arr, 0, n);

inOrder(root);

}

/\*OUTPUT

Enter the number of nodes

6

Enter the tree node elements

1

2

3

4

5

6

4 2 5 1 6 3

Process returned 0 (0x0) execution time : 5.882 s

Press any key to continue.

\*/