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//Write a program for creating Max Heap using INSERT

#include<iostream>

using namespace std;

class InsertMaxHeap

{

    int n;

    int a[20];

public:

    void insert(int a[], int n);

    void get();

    void show();

};

void InsertMaxHeap::get()

{

    cout << "Enter how many element insert into heap : ";

    cin >> n;

    cout << "Enter heap element : \n";

    for (int i = 1; i <= n; i++)

    {

        cin >> a[i];

        insert(a, i);

    }

}

void InsertMaxHeap::insert(int a[], int n)

{

    int i, j, item;

    j = n;

    i = n / 2;

    item = a[n];

    while (i > 0 && a[i] < item)

    {

        a[j] = a[i];

        j = i;

        i = i / 2;

    }

    a[j] = item;

}

void InsertMaxHeap::show()

{

    cout << "Max heap using insert :\n";

    for (int i = 1; i <= n; i++)

    {

        cout << a[i];

        cout << "\t";

    }

}

int main()

{

    InsertMaxHeap obj;

    obj.get();

    obj.show();

    return 0;

}

// Output :

Enter how many element insert into heap:7

Enter heap element:

40 80 35 90 45 50 70

Max heap using insert:

90 80 70 40 45 35 50

//Write a program for creating Min Heap using INSERT

#include<iostream>

using namespace std;

class InsertMinHeap

{

    int n;

    int a[20];

public:

    void insert(int a[], int n);

    void get();

    void show();

};

void InsertMinHeap::get()

{

    cout << "Enter how many element insert into heap:";

    cin >> n;

    cout << "Enter heap element:\n";

    for (int i = 1; i <= n; i++)

    {

        cin >> a[i];

        insert(a, i);

    }

}

void InsertMinHeap::insert(int a[], int n)

{

    int i, j, item;

    j = n;

    i = n / 2;

    item = a[n];

    while (i > 0 && a[i] > item)

    {

        a[j] = a[i];

        j = i;

        i = i / 2;

    }

    a[j] = item;

}

void InsertMinHeap::show()

{

    cout << "Min heap using insert:\n";

    for (int i = 1; i <= n; i++)

    {

        cout << a[i];

        cout << "\t";

    }

}

int main()

{

    InsertMinHeap obj;

    obj.get();

    obj.show();

    return 0;

}

Output :

Enter how many element insert into heap:5

Enter heap element:5 300 40 2 10

Min heap using insert: 2 5 40 300 10