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Exam seat no:

Roll no: SE 265

Batch no: B1

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**ASSIGNMENT NO : 13**

Write program to implement a priority queue in C++ using an inorder list to store the items in the queue. Create a class that includes the data items (which should be template) and the priority (which should be int). The inorder list should contain these objects, with operator <= overloaded so that the items with highest priority appear at the beginning of the list (which will make it relatively easy to retrieve the highest item.)

#include <iostream>

#include <string>

#include <queue>

using namespace std;

class CompareClass {

public:

bool operator () (int a, int b) {

if (a <= b)

return true;

return false;

}

};

void print\_pqueue (priority\_queue<int, vector<int>, CompareClass> pq) {

priority\_queue<int, vector<int>, CompareClass> copy\_q = pq;

cout << "Priority Queue : ";

while (!copy\_q.empty()) {

cout << copy\_q.top() << " ";

copy\_q.pop();

}

cout << "\n";

}

int main()

{

priority\_queue<int, vector<int>, CompareClass> queue\_int;

cout << "Is the Queue empty now? : " << (queue\_int.empty() ? "Yes" : "No") << endl;

cout << "Enter number of elements to add...\n";

int number,ele;

cin >> number;

for(int i = 0; i < number; i++)

{

cout <<"\n Enter Element : ";

cin >> ele;

queue\_int.push(ele);

}

cout << "Number of elements : " << queue\_int.size() << endl;

cout << "Top element : " << queue\_int.top() << endl << endl;

print\_pqueue(queue\_int);

cout << "Popping element from the top...\n\n";

queue\_int.pop();

print\_pqueue(queue\_int)

return 0;

}

**OUTPUT:**

Is the Queue empty now? : Yes

Enter number of elements to add... 3

Enter Element : 10

Enter Element : 20

Enter Element : 30

Number of elements : 3

Top element : 30

Priority Queue : 30 20 10

Popping element from the top...

Priority Queue : 20 10