**Cs 301 Assignment no 2 Fall 2021**

#include <iostream>

using namespace std;

class node // node class declaration

{

public:

int age;

node \*next;

};

class Priority\_Queue // priority queue class declaration

{

private:

node \*f;

public:

Priority\_Queue()

{

f = NULL;

}

void insert(int p) // insert nodes in decreasing order

{

node \*t, \*q;

t = new node;

t->age = p;

if (f == NULL || p > f->age)

{

t->next = f;

f = t;

}

else

{

q = f;

while (q->next != NULL && q->next->age >= p)

q = q->next;

t->next = q->next;

q->next = t;

}

}

void delet()

{

node \*t;

if (f == NULL) // if queue is null

cout << "Queue Underflow\n";

else

{

t = f;

cout << "Deleted item is: " << t->age << endl;

f = f->next;

delete(t);

}

}

void show() //print queue

{

node \*ptr;

ptr = f;

if (f == NULL)

cout << "Queue is empty\n";

else

{

cout << "Queue is :\n";

cout << "Priority Item\n";

while (ptr != NULL)

{

cout << ptr->age << endl;

ptr = ptr->next;

}

}

}

};

int main()

{

int c, p;

Priority\_Queue pq;

cout << "\nWelcome to Patient information system" << endl;

do

{

cout << "-----------------------" << endl;

cout << " Main Menu" << endl;

cout << "-----------------------" << endl;

cout << "1.Insert\n";

cout << "2.Delete\n";

cout << "3.Display\n";

cout << "4.Exit\n";

cout << "Enter your choice : ";

cin >> c;

switch (c)

{

case 1:

cout << "Input the item value to be added in the queue : ";

cin >> p;

pq.insert(p);

break;

case 2:

pq.delet();

break;

case 3:

pq.show();

break;

case 4:

break;

default:

cout << "Wrong choice\n";

}

} while (c != 4);

cout << endl;

return 0;

}