

Data Structure and Algorithm Analysis---COP3530

Program – Module 8

Total Points: 25

NO LATE ASSIGNMENTS WILL BE ACCEPTED!!

Objective:

In this assignment you will do the following:

(1) manipulate pointers, (2) allocate memory dynamically, (3) implement a default constructor, copy constructor and destructor, (4) **use only one pointer to add to the back and to delete from the front of the queue.**

Assignment Description:

You will implement a doubly-linked circular queue of integers. Consider the following class declarations when implementing bqueue. As always, you must comment your declaration and implementation files, "bqueue.h" and "bqueue.cpp", respectively.

```
class bqnode
{
    public:
        int priority;
        bqnode *prev, *next;
};

class bqueue
{
    public:
        bqueue();
        ~bqueue();
        bqueue(const bqueue &);
        void enqueue(int);
        void dequeue();
        void print();
    private:
        bqnode *front; //use ONLY one pointer
};
```

Use the following driver called "bqueue_driver.cpp" to test your code:

```
#include <iostream>
#include "bqueue.h" using
```

```
namespace std;
```

```
int main()
{
    bqueue k;

    k.enqueue(60);
    k.print();
    k.enqueue(20);
    k.enqueue(30);
    k.print();
    k.enqueue(10);
    k.print();
    k.enqueue(50);
    k.enqueue(40);
    k.print();

    bqueue j = k;

    j.dequeue();
    j.print();
    j.dequeue();
    j.dequeue();
    j.dequeue();
    j.print();
    j.dequeue();
    j.dequeue();
    j.print();
    j.dequeue();
    j.dequeue();

    return 0;
}
```

Submit bqueue.h, bqueue.cpp, and bqueue_driver.cpp to Canvas before the due date and time.

Good Luck....