

**Data Structures (Lab)**

**Task 5**

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**Q1:**

#include <iostream>

using namespace std;

class Queue {

private:

int \*arr;

int front, rear, size;

public:

Queue() {

front = rear = -1;

size = 0;

arr = new int[10];

}

void enqueue(int x) {

if (size == 10) {

cout << "Queue is full!" <<endl;

return;

}

arr[++rear] = x;

size++;

}

void dequeue() {

if (isEmpty()) {

cout << "Queue is empty!" <<endl;

return;

}

front++;

size--;

}

bool isEmpty() {

return (front == rear);

}

void display() {

for (int i = front + 1; i <= rear; i++) {

cout << arr[i] << " ";

}

cout <<endl;

}

};

int main() {

Queue q;

q.enqueue(10);

q.enqueue(20);

q.enqueue(30);

q.display();

q.dequeue();

q.display();

q.dequeue();

q.display();

cout<<boolalpha<< q.isEmpty()<<endl;

return 0;

}

