Stack and Queue

1. จงอธิบายการทำงานในแต่ละรอบของ queue ตามคำสั่งดังต่อไปนี้

1 Queue q2(12);

2 q.enqueue(2);

3 q.enqueue(4);

4 q.enqueue(6);

5 cout << q.dequeue() << endl;

6 cout << q.dequeue() << endl;

7 q.enqueue(8);

8 q.enqueue(10);

9 q.enqueue(12);

10 cout << q.dequeue() << endl;

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| Line | Head index | Tail index | Element in structure [0…11] | | | | | | | | | | | |
| 1 | 0 | -1 |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 | 0 | 0 | 2 |  |  |  |  |  |  |  |  |  |  |  |
| 3 | 0 | 1 | 2 | 4 |  |  |  |  |  |  |  |  |  |  |
| 4 | 0 | 2 | 2 | 4 | 6 |  |  |  |  |  |  |  |  |  |
| 5 | 1 | 2 |  | 4 | 6 |  |  |  |  |  |  |  |  |  |
| 6 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 10 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Console output …………………………………………………………………………………………………………………………………….

1. จงอธิบายการทำงานในแต่ละรอบของ queue ตามคำสั่งดังต่อไปนี้

1    Queue q3(12);

2    q.enqueue(1);

3    q.enqueue(1);

4    q.enqueue(1);

5    q.enqueue(2);

6    q.enqueue(2);

7    q.enqueue(2);

8    cout << q.dequeue() << endl;

9    cout << q.dequeue() << endl;

10   cout << q.dequeue() << endl;

11   q.enqueue(3);

12   cout << q.dequeue() << endl;

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| Line | Head index | Tail index | Element in structure [0…11] | | | | | | | | | | | |
| 1 | 0 | -1 |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 9 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Console output …………………………………………………………………………………………………………………………………….

1. จงอธิบายการทำงานในแต่ละรอบของ stack ตามคำสั่งดังต่อไปนี้

1    Stack s2(6);

2    s.push(1);

3    s.push(10);

4    s.push(100);

5    cout << s.pop() << endl;

6    s.push(2);

7    s.push(20);

8    s.push(200);

9   cout << s.pop() << endl;

10   cout << s.pop() << endl;

11   cout << s.pop() << endl;

12   cout << s.pop() << endl;

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Line | Top index | Element in structure [0…6] | | | | | | | | | | | |
| 1 | -1 |  |  |  |  |  |  |  |  |  |  |  |  |
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| 11 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |

Console output …………………………………………………………………………………………………………………………………….

1. จงอธิบายการทำงานในแต่ละรอบของ stack ตามคำสั่งดังต่อไปนี้

1    Stack s3(6);

2    s.push(1);

3    cout << s.pop() << endl;

4    s.push(2);

5    s.push(3);

6    cout << s.pop() << endl;

7    cout << s.pop() << endl;

8    s.push(2);

9    s.push(20);

10   s.push(200);

11   cout << s.pop() << endl;

12   cout << s.pop() << endl;

13   cout << s.pop() << endl;

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Line | Top index | Element in structure [0…6] | | | | | | | | | | | |
| 1 | -1 |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |
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Console output …………………………………………………………………………………………………………………………………….

1. จงอธิบายความต่างของ Stack และ Queue สั้นๆ มา 2 ข้อ
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   2. ......................................................................................................................................

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