

Review Test Submission: Homework 3: Stack, Queue

لترتيب البنيات (DATA STRUCTURES)

Review Test Submission: Homework 3: Stack, Queue

User: [Redacted]

Course	لترتيب البنيات (DATA STRUCTURES)
Test	Homework 3: Stack, Queue
Started	10/20/19 9:43 PM
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Due Date	10/22/19 8:00 PM
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Time Elapsed	1 hour, 12 minutes

Sunday, October 20, 2019 10:56:15 PM AST

← OK

Take Test: Homework 3: Stack, Queue

لترتيب البنيات (DATA STRUCTURES)

Take Test: Homework 3: Stack, Queue

**Test Information**

Description

Instructions

Multiple Attempts Not allowed. This test can only be taken once.

Force Completion This test can be saved and resumed later.

Question Completion Status:

⚠ Moving to another question will save this response.

Question 1 of 23

**Question 1** 1 points ✓ Saved

The behavior of adding and removing elements in stacks is:

- ☐ UFO
- ☐ FIFO
- ☒ LIFO
- ☐ RIFA

⚠ Moving to another question will save this response.

Question 1 of 23

Take Test: Homework 3: Stack, Queue

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Description

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Question 2 of 23

2 points Saved

The result of evaluating the postfix expression: 2 3 4 + 1 \* -

- ☐ 7
- ☐ None
- ☒ -5
- ☐ 5

Moving to another question will save this response.

Question 2 of 23

Take Test: Homework 3: Stack, Queue

Question Completion Status:

Question 3

1 points Saving Answer

What does this method do?

```
public static <T> void method2(Queue<T> q, T elem) {
    if (q.length() > 0) {
        int i = 0;
        int n = q.length();
        while (i < n) {
            T temp = q.serve();
            if (!elem.equals(temp))
                q.enqueue(temp);
            i++;
        }
    }
}
```

- ☒ Remove all elements equal to elem from q
- ☐ Infinite loop
- ☐ Nothing will change
- ☐ Remove all elements not equal to elem from q

Moving to another question will save this response.

Question 3 of 23

Take Test: Homework 3: Stack, Queue

**Test Information**

Description

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Multiple Attempts Not allowed. This test can only be taken once.

Force Completion This test can be saved and resumed later.

Question Completion Status:

Moving to another question will save this response.

Question 4 of 23

**Question 4** 1 points Saved

The behavior of adding and removing elements in queue is:

- ☐ LIFO
- ☐ UFO
- ☒ FIFO
- ☐ RIFA

Moving to another question will save this response.

Question 4 of 23

Take Test: Homework 3: Stack, Queue

**Test Information**

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Multiple Attempts Not allowed. This test can only be taken once.

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Question Completion Status:

Moving to another question will save this response.

Question 5 of 23

**Question 5** 1 points Saved

The Big-Oh for the methods *push*, *pop*, *empty*, and *full* of the Stack for both implementations (Linked-List/Array) is:

- ☐ None
- ☐ All  $O(n)$
- ☐  $push/pop\ O(N)$ ,  $empty/full\ O(1)$
- ☒ All  $O(1)$

Moving to another question will save this response.

Question 5 of 23

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Question Completion Status:

Moving to another question will save this response.

Question 6 of 23

**Question 6** 1 points Saved

A data structure in which elements can be inserted or deleted at/from both the ends but not in the middle is

- ☐ queue
- ☒ deque
- ☐ stack
- ☐ None

Moving to another question will save this response.

Question 6 of 23

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Question Completion Status:

Moving to another question will save this response.

Question 7 of 23

**Question 7** 1 points Saved

The expected behavior of this method is to:

```
public static void method1(Stack s) {  
    Stack s1 = new LinkedStack();  
    Stack s2 = new LinkedStack();  
    while (!s.empty())  
        s1.push(s.pop());  
    while (!s1.empty())  
        s2.push(s1.pop());  
    while (!s2.empty())  
        s.push(s2.pop());  
}
```

- ☐ Keep the bottom half of the stack s
- ☐ Not change anything in stack s
- ☐ Keep the top half of the stack s
- ☒ Reverse the stack s

Moving to another question will save this response.

Question 7 of 23

Take Test: Homework 3: Stack, Q. x

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Question Completion Status:

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Question 8 of 23

2 points Saved

Question 8

For a method in ArrayQueue - **circular array** -, replace the highlighted parts by the correct one for the method print. The method should print all elements in the queue.

```
public void print(){
    int _____ temp = head;

    for(int i = 0; i < _____ size _____ ; i++)
    {
        System.out.println( _____ nodes[temp] _____ );

        temp = _____ (temp+1)%maxsize _____ ;
    }
}
```

Moving to another question will save this response.

Question 8 of 23

خطأ النصف غالباً هنا، سؤال 8\*

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Force Completion This test can be saved and resumed later.

Question Completion Status:

Moving to another question will save this response.

Question 9 of 23

1 points Save Answer

Question 9

Suppose we have a **circular array** implementation of the queue class, with **8 elements** in the queue stored at **nodes[4]** (least recent element) through **nodes[11]** (most recent element). **The Maximum Size is 15**. Where does the enqueue member function place the new element in the array?

- ☐ nodes[11]
- ☒ nodes[12]
- ☐ nodes[14]
- ☐ nodes[15]

Moving to another question will save this response.

Question 9 of 23

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**Test Information**

Description

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Multiple Attempts Not allowed. This test can only be taken once.

Force Completion This test can be saved and resumed later.

Question Completion Status:

Moving to another question will save this response. Question 10 of 23

**Question 10** 1 points Saved

The Big-Oh method enqueue a node-based on priority in a priority queue is:

- ☐  $O(\log n)$
- ☐  $O(n^2)$
- ☐  $O(1)$
- ☒  $O(n)$

Moving to another question will save this response. Question 10 of 23

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Question Completion Status:

Moving to another question will save this response. Question 11 of 23

**Question 11** 1 points Saved

The expected behavior of this method is to:

```
public static void method2(Stack s) {
    Stack s1 = new LinkedStack();
    int n = 0;
    while (!s.empty()) {
        s1.push(s.pop());
        n++;
    }
    n = n / 2;
    for (int i = 0; i < n; i++)
        s.push(s1.pop());
}
```

- ☐ Not change anything in stack s
- ☒ Keep the bottom half of the stack s
- ☐ Keep the top half the stack s
- ☐ Reverse the stack s

Moving to another question will save this response. Question 11 of 23

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Description

Instructions

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Force Completion: This test can be saved and resumed later.

**Question Completion Status:**

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

Moving to another question will save this response.

Question 12 of 23

1 points Saved

Question 12

What is the time complexity of the inserting element on the front of the deque implemented with a Circular Array?

☒  $O(1)$

☐  $O(n)$

☐  $O(n^2)$

☐  $O(\log n)$

Moving to another question will save this response.

Question 12 of 23

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**Question Completion Status:**

Moving to another question will save this response.

Question 13 of 23

1 points Saved

Question 13

As a user of the Stack ADT, consider the recursive method `insertAtBottom`, that takes a stack `st` and an element `e`, and insert element `e` at the bottom of the stack. You are not allowed to use any auxiliary data structures. Complete the code below by choosing the correct answer:

```
1. public static void insertAtBottom (LinkedList st, T e) {
2.     if (...)
3.         ...
4.     else {
5.         ...
6.         ...
7.         ...
8.     }
9. }
```

Line 2:

☐ `top == null`

☒ `st.empty()`

☐ `!st.full()`

☐ `st.length() == 0`

☐ None

Moving to another question will save this response.

Question 13 of 23



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Question Completion Status:

Moving to another question will save this response.

Question 14 of 23

1 points Saved

Question 14

As a user of the Stack ADT, consider the recursive method `insertAtBottom`, that takes a stack `st` and an element `e`, and insert element `e` at the bottom of the stack. You are not allowed to use any auxiliary data structures. Complete the code below by choosing the correct answer:

```
1. public static void insertAtBottom (LinkedStack st, T e) {  
2.     if (...)   
3.         ...  
4.     else {  
5.         ...  
6.         ...  
7.         ...  
8.     }  
9. }
```

Line 3:

- ☐ None
- ☐ `top.data = e;`
- ☐ `return;`
- ☒ `st.push(e);`
- ☐ `insertAtBottom(st, e);`

Moving to another question will save this response.

Question 14 of 23

Type here to search

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Question Completion Status:

Moving to another question will save this response.

Question 15 of 23

1 points Saved

Question 15

As a user of the Stack ADT, consider the recursive method `insertAtBottom`, that takes a stack `st` and an element `e`, and insert element `e` at the bottom of the stack. You are not allowed to use any auxiliary data structures. Complete the code below by choosing the correct answer:

```
1. public static void insertAtBottom (LinkedStack st, T e) {  
2.     if (...)   
3.         ...  
4.     else {  
5.         ...  
6.         ...  
7.         ...  
8.     }  
9. }
```

Line 5:

- ☒ `T tmp = st.pop();`
- ☐ `insertAtBottom(st, e);`
- ☐ None
- ☐ `st.push(e);`
- ☐ `T tmp = top.data;`

Moving to another question will save this response.

Question 15 of 23

Type here to search

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Question Completion Status:

Moving to another question will save this response.

Question 16 of 23

1 points Saved

Question 16

As a user of the Stack ADT, consider the recursive method insertAtBottom, that takes a stack st and an element e, and insert element e at the bottom of the stack. You are not allowed to use any auxiliary data structures. Complete the code below by choosing the correct answer:

```
1. public static void insertAtBottom (LinkedList st, T e) {  
2.     if (...) {  
3.         ...  
4.     } else {  
5.         ...  
6.         ...  
7.         ...  
8.     }  
9. }
```

Line 6:

- ☐ st.push(e);
- ☐ T tmp = st.pop();
- ☐ None
- ☐ insertAtBottom(st, tmp);
- ☒ insertAtBottom(st, e);

Moving to another question will save this response.

Question 16 of 23

Type here to search

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Question Completion Status:

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Question 17 of 23

1 points Saved

Question 17

As a user of the Stack ADT, consider the recursive method insertAtBottom, that takes a stack st and an element e, and insert element e at the bottom of the stack. You are not allowed to use any auxiliary data structures. Complete the code below by choosing the correct answer:

```
1. public static void insertAtBottom (LinkedList st, T e) {  
2.     if (...) {  
3.         ...  
4.     } else {  
5.         ...  
6.         ...  
7.         ...  
8.     }  
9. }
```

Line 7:

- ☐ None
- ☐ top.data = tmp;
- ☒ st.push(tmp);
- ☐ st.push(e);
- ☐ return;

Moving to another question will save this response.

Question 17 of 23

Type here to search

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Take Test: Homework 3: Stack, Q. x

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Question Completion Status:

Question 18 1 points Saved

As a user of the Stack ADT, consider the static method *print*, which takes a stack *s* containing data of type *String*, and prints its elements from top to bottom. Stack *s* should be unchanged after the method is done. Complete the code below by choosing the correct answer:

```
1. public static void print(Stack<String> s) {  
2.     ...  
3.     ... {  
4.         ...  
5.         ...  
6.         System.out.println(e);  
7.     }  
8.     ...  
9.     ...  
10. }
```

Line 2:

- ☐ None
- ☒ Stack<String> s2 = new LinkedStack<String>();
- ☐ Queue<String> q = new LinkedQueue<String>();
- ☐ Node<String> tmp = s.top();
- ☐ List<String> l = new LinkedList<String>();

Moving to another question will save this response.

Question 18 of 23

Take Test: Homework 3: Stack, Q. x

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Question Completion Status:

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Question 19 1 points Save Answer

As a user of the Stack ADT, consider the static method *print*, which takes a stack *s* containing data of type *String*, and prints its elements from top to bottom. Stack *s* should be unchanged after the method is done. Complete the code below by choosing the correct answer:

```
1. public static void print(Stack<String> s) {  
2.     ...  
3.     ... {  
4.         ...  
5.         ...  
6.         System.out.println(e);  
7.     }  
8.     ...  
9.     ...  
10. }
```

Line 3:

- ☐ while(tmp != null)
- ☒ while(!s.empty())
- ☐ None
- ☐ for(int i = 0; i < s.length(); i++)
- ☐ while(!s.last())

Moving to another question will save this response.

Question 19 of 23

Take Test: Homework 3: Stack, Q. x

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Question Completion Status:

Question 20 1 points Save Answer

As a user of the Stack ADT, consider the static method *print*, which takes a stack *s* containing data of type *String*, and prints its elements from top to bottom. Stack *s* should be unchanged after the method is done. Complete the code below by choosing the correct answer:

```
1. public static void print(Stack<String> s) {  
2.     ...  
3.     ... {  
4.         ...  
5.         ...  
6.         System.out.println(e);  
7.     }  
8.     ...  
9.     ...  
10. }
```

Line 4:

- ☐ String e = s.getData();
- ☐ None
- ☐ String e = tmp.data;
- ☐ String e = s.retrieve();
- ☒ String e = s.pop();

Moving to another question will save this response.

Question 20 of 23

Take Test: Homework 3: Stack, Q. x

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Question Completion Status:

Question 21 1 points Saved

As a user of the Stack ADT, consider the static method *print*, which takes a stack *s* containing data of type *String*, and prints its elements from top to bottom. Stack *s* should be unchanged after the method is done. Complete the code below by choosing the correct answer:

```
1. public static void print(Stack<String> s) {  
2.     ...  
3.     ... {  
4.         ...  
5.         ...  
6.         System.out.println(e);  
7.     }  
8.     ...  
9.     ...  
10. }
```

Line 5:

- ☐ tmp = tmp.next;
- ☐ q.enqueue(e);
- ☐ None
- ☐ Linsert(e);
- ☒ s2.push(e);

Moving to another question will save this response.

Question 21 of 23

Take Test: Homework 3: Stack, Q. x

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Question Completion Status:

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Question 22 of 23

1 points Save Answer

As a user of the Stack ADT, consider the static method *print*, which takes a stack *s* containing data of type *String*, and prints its elements from top to bottom. Stack *s* should be unchanged after the method is done. Complete the code below by choosing the correct answer:

```
1. public static void print(Stack<String> s) {  
2.     ...  
3.     ... {  
4.         ...  
5.         ...  
6.         System.out.println(e);  
7.     }  
8.     ...  
9.     ...  
10. }
```

Line 8:

- ☐ None
- ☐ for(int i = 0; i < q.length(); i++)
- ☐ tmp = top;
- ☒ while(!s2.empty())
- ☐ while(!l.last())

Moving to another question will save this response.

Question 22 of 23

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Take Test: Homework 3: Stack, Q. x

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Question Completion Status:

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Question 23 of 23

1 points Saved

As a user of the Stack ADT, consider the static method *print*, which takes a stack *s* containing data of type *String*, and prints its elements from top to bottom. Stack *s* should be unchanged after the method is done. Complete the code below by choosing the correct answer:

```
1. public static void print(Stack<String> s) {  
2.     ...  
3.     ... {  
4.         ...  
5.         ...  
6.         System.out.println(e);  
7.     }  
8.     ...  
9.     ...  
10. }
```

Line 9:

- ☐ s.push(q.serve());
- ☐ top.next = tmp;
- ☒ s.push(s2.pop());
- ☐ None
- ☐ s.push(l.retrieve());

Click Submit to complete this assessment.

Question 23 of 23

Save and Submit

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