Test Cases

Queue

TestOffer1()

90

NewElement

NewQueue

110

90

100

110

100

Tail Head Tail Head

TestOffer2()

10

NewElement

NewQueue

10

Null

Tail Head Tail Head

TestOffer3()

1000

NewElement

200

NewQueue

1000

200

Tail Head Tail Head

TestIsEmpty1()

FALSE

110

100

Tail Head

TestIsEmpty2()

Null

TRUE

Tail Head

testPeek1()

Head

110

110

100

Tail Head

testPeek2()

Head

Null

Null

Tail Head

testPeek3()

200

Head

200

Tail Head

TestPoll1()

NewQueue

100

110

100

Tail Head Tail Head

TestPoll2()

NewQueue

200

Null

Tail Head Tail Head

TestSize1()

Size = 2

110

100

Tail Head

TestSize2()

Null

Size = 0

Tail Head

TestSize3()

Size = 1

200

Tail Head

STACK

TestPush1() New Element

@987

@987

@789

Top Top

@789

@456

New Stack

@456

@123

@123

TestPush2() New Element

@ABC

@ABC

NULL

Top New Stack Top

TestPush3() New Element

@100

@100

@10

Top New Stack Top

@10

TestIsEmpty1()

@789

Top

@456

FALSE

@123

TestIsEmpty2()

NULL

Top FALSE

TestPop1

Top Top

@456

@789

New Stack

@123

@456

@123

TestPop2

Top New Stack Top

NULL

@10

TestSize1()

Top

@789

Size = 3

@456

@123

TestSize2()

NULL

Top Size = 0

TestSize3()

Top Size = 1

@10

Heap

testSwap1()

i = 0

j = 1 E = 2

=

3

2

3

2

testSwap2()

i = 3

j = 0 E=1

3

2

5

1

1

2

5

=

3

testSwap3()

i = 0

j = 2 E=2. Out-of-bounds

3

2

3

2

testMaxHeap1()

8

5

8

1

7

3

5

3

1

7

4

8

5

3

1

7

4

4

testHeapSort1()

5

3

1

4

2

1

3

4

2

5

5

5

4

3

2

1

2

4

3

1

HashTable

testInsert1()

|  |  |  |
| --- | --- | --- |
| 1 | 2 | 3 |
| 1000 | 1001 | NULL |

Element to Insert:

|  |
| --- |
| 3 |
| 1002 |

NewHashTable:

|  |  |  |
| --- | --- | --- |
| 1 | 2 | 3 |
| 1000 | 1001 | 1002 |

TestDelete1()

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | 2 | 3 | 4 |
| 9 | 12 | 501 | 371 |

KEY = 3

NewHashTable

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | 2 | 3 | 4 |
| 9 | 12 | NULL | 371 |

TestDelete2()

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | 2 | 3 | 4 |
| 9 | 6 | 91 | 1 |

Key = 1

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | 2 | 3 | 4 |
| NULL | 6 | 91 | 1 |

TestSearch1()

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | 2 | 3 | 4 |
| 9 | 12 | 501 | 371 |

Key = 2

|  |
| --- |
| 2 |
| 12 |