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* **HashtableTest**

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| **Name** | **Class** | **Stage** |
| setupStage1 | HashtableTest | A new hashtable with size=100000 |
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| **Test objective:** To know if the hashtable insert method is running correctly. | | | | |
| **Class** | **Method** | **Stage** | **Inputs** | **Result** |
| Hashtable | insert() | setUpStage1 | node, node.getKey() | A new node has been inserted in the hashtable (The occupied size is 1) |
| Hashtable | insert() | setupStage1 | node2, node2.getKey()  node, node.getKey()  node3, node3.getKey()  node4, node4.getkey()  node5, node5.getKey() | Five new nodes have been inserted in the hashtable (The occupied size is 5) |
| Hashtable | insert() | setupStage1 | (null) | No nodes have been inserted in the hashtable (The occupied size is 0) |

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| **Test objective:** To know if the hashtable search method is running correctly. | | | | |
| **Class** | **Method** | **Stage** | **Inputs** | **Result** |
| Hashtable | search() | setUpStage1 | “1112388100” | The value found is 20. (The occupied size is 1) |
| Hashtable | search() | setupStage1 | “1112388104” | The value found is 24. (The occupied size is 5) |
| Hashtable | search() | setupStage1 | “1112388100” | No value found (null) |

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| **Test objective:** To know if the hashtable delete method is running correctly. | | | | |
| **Class** | **Method** | **Stage** | **Inputs** | **Result** |
| Hashtable | delete() | setUpStage1 | “1112388100” | The value with the key “1112388100” has been deleted (the occupied size was 1 and now is 0 and when I search that key there is no found value) |
| Hashtable | delete() | setupStage1 | “1112388101”  “1112388103” | The values with the key “1112388101” and “1112388103” have been deleted (the occupied size was 5 and now is 3 and when I search those keys there is no found values) |
| Hashtable | delete() | setupStage1 | “00000” | No value has been deleted. (The occupied size was 1 and now is 1) |

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| **Test objective:** To know if the hashtable contains key method is running correctly. | | | | |
| **Class** | **Method** | **Stage** | **Inputs** | **Result** |
| Hashtable | containsKey() | setUpStage1 | “1112388100” | The hashtable contains the key “1112388100” (the occupied size is 1) |
| Hashtable | containsKey() | setupStage1 | “1112388104” | The hashtable contains the key “1112388104” (the occupied size is 5) |
| Hashtable | containsKey() | setupStage1 | “1112388100” | The hashtable doesn’t contains the key “1112388100” (the occupied size is 0) |

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| **Test objective:** To know if the hashtable contains value method is running correctly. | | | | |
| **Class** | **Method** | **Stage** | **Inputs** | **Result** |
| Hashtable | containsValue() | setUpStage1 | 20 | The hashtable contains the value 20 (the occupied size is 1) |
| Hashtable | containsValue () | setupStage1 | 21 | The hashtable contains the value 21 (the occupied size is 5) |
| Hashtable | containsValue () | setupStage1 | 20 | The hashtable doesn’t contains the value 20 (the occupied size is 0) |

* **QueueTest**

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| **Name** | **Class** | **Stage** |
| setupStage1 | QueueTest | A new queue with size=4 |
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| **Test objective:** To know if the queue offer method is running correctly. | | | | |
| **Class** | **Method** | **Stage** | **Inputs** | **Result** |
| Queue | offer() | setUpStage1 | node | A new node has been added to the queue (the occupied size is 1 and the node is in the zero position) |
| Queue | offer() | setupStage1 | node  node2  node3  node4 | Four new nodes have been added to the queue and when we try to add one more isn’t possible and is false because the queue has a size of 4. |
| Queue | offer() | setupStage1 | node3  node2  node | Three nodes have been added to the queue (the occupied size is 3) |

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| **Test objective:** To know if the queue peek method is running correctly. | | | | |
| **Class** | **Method** | **Stage** | **Inputs** | **Result** |
| Queue | peek() | setUpStage1 | (null) | The node “discretas” is peeked. (The occupied size was 1 and now is 1) |
| Queue | peek() | setupStage1 | (null) | The node “discretas” is peeked. (The occupied size was 4 and now is 4) |
| Queue | peek() | setupStage1 | (null) | No node is peeked (The occupied size was 0 and now is 0) |

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| **Test objective:** To know if the queue poll method is running correctly. | | | | |
| **Class** | **Method** | **Stage** | **Inputs** | **Result** |
| Queue | poll() | setUpStage1 | (null) | The node2 is extracted from the queue. (The occupied size was 4 and now is 3) |
| Queue | poll() | setupStage1 | (null) | The node is extracted from the queue (The occupied size was 1 and now is 0) |
| Queue | poll() | setupStage1 | (null) | No node is extracted from the queue (The occupied size was 0 and now is 0) |

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| **Test objective:** To know if the queue is empty method is running correctly. | | | | |
| **Class** | **Method** | **Stage** | **Inputs** | **Result** |
| Queue | isEmpty() | setUpStage1 | (null) | The queue isn’t empty (The occupied size was 4 and now is 4) |
| Queue | isEmpty() | setupStage1 | (null) | The queue is empty (The occupied size was 0 and now is 0) |
| Queue | isEmpty() | setupStage1 | (null) | First, the queue isn’t empty, then the queue is empty (The occupied size was 1 and now is 0) |

* **PriorityQueueTest**

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| **Name** | **Class** | **Stage** |
| setupStage1 | PriorityQueueTest | A new priority queue with size=5  A new IPSController variable  A new queue with size=5 |
| setupStage2 | PriorityQueueTest | A new priority queue with size=0  A new IPS controller variable |
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| **Test objective:** To know if the priority queue insert method is running correctly. | | | | |
| **Class** | **Method** | **Stage** | **Inputs** | **Result** |
| PriorityQueue | insert() | setUpStage1 | new PriorityQueueNode<Patient, Integer>(patient1, partient1.getPriority())  new PriorityQueueNode<Patient, Integer>(patient2, partient2.getPriority())  new PriorityQueueNode<Patient, Integer>(patient3, partient3.getPriority())  new PriorityQueueNode<Patient, Integer>(patient4, partient4.getPriority())  new PriorityQueueNode<Patient, Integer>(patient5, partient5.getPriority()) | Five new nodes have been added to the priority queue (the occupied size is 5 and the maximum is the fifth node) |
| PriorityQueue | insert() | setupStage1  setupStage2 | new PriorityQueueNode<Patient, Integer>(patient1, partient1.getPriority())  new PriorityQueueNode<Patient, Integer>(patient2, partient2.getPriority()) | Two new nodes have been inserted to the priority queue (the occupied size is 2 and the maximum is the third node). Also when we execute the stage 2 we can’t insert a node. |
| PriorityQueue | insert() | setupStage1 | new PriorityQueueNode<Patient, Integer>(patient1, partient1.getPriority())  new PriorityQueueNode<Patient, Integer>(patient2, partient2.getPriority())  new PriorityQueueNode<Patient, Integer>(patient3, partient3.getPriority())  new PriorityQueueNode<Patient, Integer>(patient4, partient4.getPriority())  new PriorityQueueNode<Patient, Integer>(patient5, partient5.getPriority()) | Five new nodes have been added to the priority queue (the occupied size is 5 and the maximum is the fifth node) we delete one and then the occupied size is 4. |

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| **Test objective:** To know if the priority queue maximum and minimum methods are running correctly. | | | | |
| **Class** | **Method** | **Stage** | **Inputs** | **Result** |
| PriorityQueue | maximum()  mínimum() | setUpStage2 | (null) | There is no maximum and minimum. |
| PriorityQueue | maximum()  mínimum() | setupStage1 | (null) | Five new nodes have been inserted to the priority queue. The minimum is the node with the priority 1 and the maximum is the node with the priority 24. |
| PriorityQueue | maximum()  mínimum() | setupStage1 | (null) | Five new nodes have been added to the priority queue (the occupied size is 5), the minimum is the node with priority 1 and the maximum is the node with the priority 24. We delete 2 nodes (the occupied size is now 3), the minimum is the node with priority 2 and the maximum is the node with priority 4. |

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| **Test objective:** To know if the priority queue maximum and minimum methods are running correctly. | | | | |
| **Class** | **Method** | **Stage** | **Inputs** | **Result** |
| PriorityQueue | maximum()  mínimum() | setUpStage2 | (null) | There is no maximum and minimum. |
| PriorityQueue | maximum()  mínimum() | setupStage1 | (null) | Five new nodes have been inserted to the priority queue. The minimum is the node with the priority 1 and the maximum is the node with the priority 24. |
| PriorityQueue | maximum()  mínimum() | setupStage1 | (null) | Five new nodes have been added to the priority queue (the occupied size is 5), the minimum is the node with priority 1 and the maximum is the node with the priority 24. We delete 2 nodes (the occupied size is now 3), the minimum is the node with priority 2 and the maximum is the node with priority 4. |