DESIGN OF UNIT TESTS

Configuration of Scenarios

Name	Class	Stage
setupStage1	LinkedListTest	Empty
setupStage1	StackListTest	Empty
setupStage1	QueueListTest	Empty
setupStage2	LinkedListTest	LinkedList created, with size = 0
setupStage2	StackListTest	StackList created, top = null
setupStage2	QueueListTest	QueueList created, front = null and back = null
setupStage3	LinkedListTest	3 nodes created of type Game, size = 3
setupStage3	StackListTest	3 nodes created of type Game, size = 3
setupStage3	QueueListTest	3 nodes created of type Game, size = 3

Test Cases Design

Test Objective: Validate the correct creation of a Linked List.

Class	Method	Stage	Input Values	Result

LinkedList	LinkedList(Constructor)	setupStage1	head = null
			size = 0
			tail = null
				LinkedList created, constructor method works correctly

Test Objective: Validate that a new node is added correctly.

Class	Method	Stage	Input Values	Result

LinkedList	add	setupStage2	Object of type Game
			{code = 331
			price = 17000
			amount = 1
			value = 1
			shelve = A}
				First node added (head). The method adds a node to the linked list correctly

LinkedList	add	setupStage3	Object of type Game
			{code = 122
			price = 20000
			amount = 2
			value = 3
			shelve = C}
				New node added (tail).
				The method adds a node to the linked list correctly

Test Objective: Validate that a new node is NOT added.

Class	Method	Stage	Input Values	Result
LinkedList	add	setupStage3	Element null	The game was not added. It’s a null object.

Test Objective: Validate that the element corresponding to the index indicated by parameter is deleted.

Class	Method	Stage	Input Values	Result
LinkedList	remove	setupStage3	index = 0	Element in index 2 deleted. The method removes the element correctly.
LinkedList	remove	setupStage3	index = 4	The element in index 4 doesn’t exist. The method does NOT remove an element, it works correctly.
LinkedList	remove	setupStage2	index = “dos”	Invalid input. The method does NOT remove an element, it works correctly.

Test Objective: Validate the correct creation of a Stack List.

Class	Method	Stage	Input Values	Result
StackList	StackList(Constructor)	setupStage1	top = null	StackList created, constructor method works correctly.

Test Objective: Validate that a new value is pushed to the Stack List correctly.

Class	Method	Stage	Input Values	Result

StackList	push	setupStage2	Object of type Game
			{code = 401
			price = 15000
			amount = 1
			value = 1
			shelve = C}
				The first value is pushed to the Stack List (top). The method pushed a new value correctly.

StackList	push	setupStage3	Object of type Game
			{code = 212
			price = 40000
			amount = 2
			value = 5
			shelve = D}
				The new value is pushed to the Stack List (top). The method pushed a new value correctly.

StackList	push	setupStage3	Element null	The new value is NOT pushed to the Stack List, the element is null. The method works correctly.

Test Objective: Validate that the top element is extracted from the Stack List.

Class	Method	Stage	Input Values	Result
StackList	pop	setupStage3	None	Return the top. The top of the Stack List is extracted. The method extracts the top of the Stack correctly.

StackList	pop	setupStage3	None	Return the top The top of the Stack List is extracted, null object. The method extracts the top of the Stack correctly.

Test Objective: Validate the correct creation of a Queue List.

Class	Method	Stage	Input Values	Result

QueueList	QueueList(Constructor)	setupStage1	front = null
			back = null
				QueueList created, constructor method works correctly.

Test Objective: Validate that a new nodo is enqueued to the Queue List.

Class	Method	Stage	Input Values	Result

QueueList	enqueue	setupStage2	Object of type Game
			{code = 333
			price = 10000
			amount = 2
			value = 6
			shelve = E}
				The first element is enqueued to the Queue List (back). The method enqueued a new element correctly.

QueueList	enqueue	setupStage3	Object of type Game
			{code = 725
			price = 23050
			amount = 4
			value = 3
			shelve = C}
				A new node is enqueued to the Queue List (back)- The method enqueued a new element correctly.

Test Objective: Validate that a nodo is enqueued to the Queue List.

Class	Method	Stage	Input Values	Result

QueueList	dequeue	setupStage3	None	The first element (the front) is dequeued from the Queue List. The method dequeue works correctly.
QueueList	dequeue	setupStage2	None	The first element (front) is dequeued from the Queue List (null). The methos dequeue works correctly.