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| Test Case # | Purpose of the test case | Input data | Expected output |
| 1 | Testing add() method. Make sure that the item is valid and add it into the bag. Check if the bag capacity is dynamically adapting to increasing bag size. | GroceryItem addItem1 = new GroceryItem("beef", 2.0, true); GroceryItem addItem2 = new GroceryItem("lamp", 21.0, true); GroceryItem addItem3 = new GroceryItem("bead", 303.3, false); GroceryItem addItem4 = new GroceryItem("chicken", 44444444, true); GroceryItem addItem5 = new GroceryItem("bed", 0.1, false); testBag.add(addItem1); testBag.add(addItem2); testBag.add(addItem3); testBag.add(null); testBag.add(addItem4); testBag.add(addItem5); | Bag capacity: 5  Items in the bag:  >> beef: $2.00 : is taxable  >> lamp: $21.00 : is taxable  >> bead: $303.30 : tax free  >> chicken: $44444444.00 : is taxable  >> bed: $0.10 : tax free  Bag capacity: 10 |
| 2 | Testing remove() method. Make sure that the item is valid, present in the bag, and remove it if so. | GroceryItem removeItem1 = new GroceryItem("beef", 2.0, true); GroceryItem removeItem2 = new GroceryItem("lamp", 21.0, true); GroceryItem removeItem3 = new GroceryItem("duck", 10.0, true); GroceryItem removeItem4 = new GroceryItem("chicken", 21.0, true); testBag.remove(removeItem1); testBag.remove(removeItem2); testBag.remove(removeItem3); testBag.remove(removeItem4); testBag.remove(null); | Bag capacity: 10  Items in the bag:  >> bed: $0.10 : tax free  >> chicken: $44444444.00 : is taxable  >> bead: $303.30 : tax free  Bag capacity: 10 |
| 3 | Testing grow() method. Simple test to make sure that the bag size increases linearly by 5 to accommodate the number of items able to be added. | GroceryItem addItem6 = new GroceryItem("turkey", 99.15, false); testBag.add(addItem6); for (int i = 0; i < 5; i++) {  testBag.grow(); } | Bag capacity: 10  Bag capacity after grow: 35 |
| 4 | Testing salesTax() method. Testing calculation based on previous test cases filled bag. | System.*out*.printf("Total tax needed to pay: $%.2f\n", testBag.salesTax()); | Total tax needed to pay: $2944444.42 |