UML Diagram:
Abstract Shopping
abstract addItem ()
abstract sortPriority ()
abstract displayItem ()
abstract calculateCost()

Priority Sort
PrioritySorter

ShoppingList
Attributes
itemName
itemPrice
itemQty
itemPriority
totalPrice
budget
moneyLeft
Behavior
addItem: void
sortPriority: void
displayItem: void
bankAccount: void
calculateCost: double

ShoppingItem	ProgException	PrintingOut	ShoppingMainRunner
Attributes: itemName itemPrice itemQty itemPriority totalPrice **Behavior:** getItemName() getItemPrice() getItemPriority() getItemQty() getTotalCost() setItemName()	**Attributes** str1: String **Behavior** getMessage(): string	displayItem() : void calculateCost (): double	addItem(); bankAccount(); sortPriority(); displayItem(); calculateCost();

setItemPrice() setItemPriority() setItemQty() setTotalCost() toString()			

Test Cases

TEST CASE 1

Enter Budget for Shopping:
20
Enter the name of your item
apple
Enter the price of your item
4
Enter the priority of your item
3
Enter in the Qty of your item
1
Item Added
You Have This item on Cart.
Item Name - apple
Item Price - $ 4.0
Item Quantity - 1
Priority - 3
Total Price - 4.0
_____
Enter the name of your item
banana
Enter the price of your item
3
Enter the priority of your item
1
Enter in the Qty of your item
3
Item Added
You Have This item on Cart.
Item Name - apple
Item Price - $ 4.0
Item Quantity - 1
Priority - 3
Total Price - 4.0
_____
You Have This item on Cart.
Item Name - banana
Item Price - $ 3.0
Item Quantity - 3
Priority - 1
Total Price - 9.0
_____
Enter the name of your item
mango
Enter the price of your item

5
Enter the priority of your item
1
Enter in the Qty of your item
1
Item Added
You Have This item on Cart.
Item Name - apple
Item Price - $ 4.0
Item Quantity - 1
Priority - 3
Total Price - 4.0
_____
You Have This item on Cart.
Item Name - banana
Item Price - $ 3.0
Item Quantity - 3
Priority - 1
Total Price - 9.0
_____
You Have This item on Cart.
Item Name - mango
Item Price - $ 5.0
Item Quantity - 1
Priority - 1
Total Price - 5.0
_____
Enter the name of your item
banana shake
Enter the price of your item
2
Enter the priority of your item
4
Enter in the Qty of your item
1
Item Added
You Have This item on Cart.
Item Name - apple
Item Price - $ 4.0
Item Quantity - 1
Priority - 3
Total Price - 4.0
_____
You Have This item on Cart.
Item Name - banana
Item Price - $ 3.0
Item Quantity - 3
Priority - 1
Total Price - 9.0
_____
You Have This item on Cart.
Item Name - mango
Item Price - $ 5.0
Item Quantity - 1
Priority - 1
Total Price - 5.0
_____
You Have This item on Cart.
Item Name - bananashake
Item Price - $ 2.0
Item Quantity - 1

Priority - 4
Total Price - 2.0

_____
Enter the name of your item
toilet paper
Enter the price of your item
5
Enter the priority of your item
3
Enter in the Qty of your item
1
Item Added
You Have This item on Cart.
Item Name - apple
Item Price - $ 4.0
Item Quantity - 1
Priority - 3
Total Price - 4.0

_____
You Have This item on Cart.
Item Name - banana
Item Price - $ 3.0
Item Quantity - 3
Priority - 1
Total Price - 9.0

_____
You Have This item on Cart.
Item Name - mango
Item Price - $ 5.0
Item Quantity - 1
Priority - 1
Total Price - 5.0

_____
You Have This item on Cart.
Item Name - bananashake
Item Price - $ 2.0
Item Quantity - 1
Priority - 4
Total Price - 2.0

_____
You Have This item on Cart.
Item Name - toiletpaper
Item Price - $ 5.0
Item Quantity - 1
Priority - 3
Total Price - 5.0

_____
Enter the name of your item
notebook
Enter the price of your item
3
Enter the priority of your item
6
Enter in the Qty of your item
1
Item Added
You Have This item on Cart.
Item Name - apple
Item Price - $ 4.0
Item Quantity - 1
Priority - 3

Total Price - 4.0

_____

You Have This item on Cart.
Item Name - banana
Item Price - $ 3.0
Item Quantity - 3
Priority - 1
Total Price - 9.0

_____

You Have This item on Cart.
Item Name - mango
Item Price - $ 5.0
Item Quantity - 1
Priority - 1
Total Price - 5.0

_____

You Have This item on Cart.
Item Name - bananashake
Item Price - $ 2.0
Item Quantity - 1
Priority - 4
Total Price - 2.0

_____

You Have This item on Cart.
Item Name - toiletpaper
Item Price - $ 5.0
Item Quantity - 1
Priority - 3
Total Price - 5.0

_____

You Have This item on Cart.
Item Name - notebook
Item Price - $ 3.0
Item Quantity - 1
Priority - 6
Total Price - 3.0

_____

6 items.
Item Name - banana
Item Price - $ 3.0
Item Quantity - 3
Priority - 1
Total Price - 9.0

_____

Item Name - mango
Item Price - $ 5.0
Item Quantity - 1
Priority - 1
Total Price - 5.0

_____

Item Name - apple
Item Price - $ 4.0
Item Quantity - 1
Priority - 3
Total Price - 4.0

_____

Item Name - toiletpaper
Item Price - $ 5.0
Item Quantity - 1
Priority - 3
Total Price - 5.0

_____
Item Name - bananashake
Item Price - $ 2.0
Item Quantity - 1
Priority - 4
Total Price - 2.0

_____
Item Name - notebook
Item Price - $ 3.0
Item Quantity - 1
Priority - 6
Total Price - 3.0

_____
Your available money for shopping is: 20.0
Purchased Item: banana
The Money Left in Bank Account is: 11.0
Purchased Item: mango
The Money Left in Bank Account is: 6.0
Purchased Item: apple
The Money Left in Bank Account is: 2.0
Sorry. Not Enough Balance in account. This was not purchased
toiletpaper
Sorry. Not Enough Balance in account. This was not purchased
bananashake
Sorry. Not Enough Balance in account. This was not purchased
notebook

TEST CASE 2
Enter Budget for Shopping:
50
Enter the name of your item
apple
Enter the price of your item
3
Enter the priority of your item
7
Enter in the Qty of your item
1
Item Added
You Have This item on Cart.
Item Name - apple
Item Price - $ 3.0
Item Quantity - 1
Priority - 7
Total Price - 3.0

_____
Enter the name of your item
apple juice
Enter the price of your item
4
Enter the priority of your item
3
Enter in the Qty of your item
1
Item Added
You Have This item on Cart.
Item Name - apple
Item Price - $ 3.0
Item Quantity - 1

Priority - 7
Total Price - 3.0

_____
You Have This item on Cart.
Item Name - applejuice
Item Price - $ 4.0
Item Quantity - 1
Priority - 3
Total Price - 4.0

_____
Enter the name of your item
mango
Enter the price of your item
-1
Exception Occured: EXCEPTION: Only positive numbers can be entered.
Enter the priority of your item
4
Enter in the Qty of your item
1
Item Added
You Have This item on Cart.
Item Name - apple
Item Price - $ 3.0
Item Quantity - 1
Priority - 7
Total Price - 3.0

_____
You Have This item on Cart.
Item Name - applejuice
Item Price - $ 4.0
Item Quantity - 1
Priority - 3
Total Price - 4.0

_____
You Have This item on Cart.
Item Name - mango
Item Price - $ 0.0
Item Quantity - 1
Priority - 4
Total Price - 0.0

_____
Enter the name of your item
banana
Enter the price of your item
5
Enter the priority of your item
6
Enter in the Qty of your item
1
Item Added
You Have This item on Cart.
Item Name - apple
Item Price - $ 3.0
Item Quantity - 1
Priority - 7
Total Price - 3.0

_____
You Have This item on Cart.
Item Name - applejuice
Item Price - $ 4.0
Item Quantity - 1

Priority - 3
Total Price - 4.0

_____

You Have This item on Cart.
Item Name - mango
Item Price - $ 0.0
Item Quantity - 1
Priority - 4
Total Price - 0.0

_____

You Have This item on Cart.
Item Name - banana
Item Price - $ 5.0
Item Quantity - 1
Priority - 6
Total Price - 5.0

_____

Enter the name of your item
book
Enter the price of your item
12
Enter the priority of your item
2
Enter in the Qty of your item
1
Item Added
You Have This item on Cart.
Item Name - apple
Item Price - $ 3.0
Item Quantity - 1
Priority - 7
Total Price - 3.0

_____

You Have This item on Cart.
Item Name - applejuice
Item Price - $ 4.0
Item Quantity - 1
Priority - 3
Total Price - 4.0

_____

You Have This item on Cart.
Item Name - mango
Item Price - $ 0.0
Item Quantity - 1
Priority - 4
Total Price - 0.0

_____

You Have This item on Cart.
Item Name - banana
Item Price - $ 5.0
Item Quantity - 1
Priority - 6
Total Price - 5.0

_____

You Have This item on Cart.
Item Name - book
Item Price - $ 12.0
Item Quantity - 1
Priority - 2
Total Price - 12.0

_____

Enter the name of your item
bread
Enter the price of your item
3
Enter the priority of your item
5
Enter in the Qty of your item
1
Item Added
You Have This item on Cart.
Item Name - apple
Item Price - $ 3.0
Item Quantity - 1
Priority - 7
Total Price - 3.0
_____
You Have This item on Cart.
Item Name - applejuice
Item Price - $ 4.0
Item Quantity - 1
Priority - 3
Total Price - 4.0
_____
You Have This item on Cart.
Item Name - mango
Item Price - $ 0.0
Item Quantity - 1
Priority - 4
Total Price - 0.0
_____
You Have This item on Cart.
Item Name - banana
Item Price - $ 5.0
Item Quantity - 1
Priority - 6
Total Price - 5.0
_____
You Have This item on Cart.
Item Name - book
Item Price - $ 12.0
Item Quantity - 1
Priority - 2
Total Price - 12.0
_____
You Have This item on Cart.
Item Name - bread
Item Price - $ 3.0
Item Quantity - 1
Priority - 5
Total Price - 3.0
_____
6 items.
Item Name - book
Item Price - $ 12.0
Item Quantity - 1
Priority - 2
Total Price - 12.0
_____
Item Name - applejuice
Item Price - $ 4.0
Item Quantity - 1

Priority - 3
Total Price - 4.0
_____
Item Name - mango
Item Price - $ 0.0
Item Quantity - 1
Priority - 4
Total Price - 0.0
_____
Item Name - bread
Item Price - $ 3.0
Item Quantity - 1
Priority - 5
Total Price - 3.0
_____
Item Name - banana
Item Price - $ 5.0
Item Quantity - 1
Priority - 6
Total Price - 5.0
_____
Item Name - apple
Item Price - $ 3.0
Item Quantity - 1
Priority - 7
Total Price - 3.0
_____
Your available money for shopping is: 50.0
Purchased Item: book
The Money Left in Bank Account is: 38.0
Purchased Item: applejuice
The Money Left in Bank Account is: 34.0
Purchased Item: mango
The Money Left in Bank Account is: 34.0
Purchased Item: bread
The Money Left in Bank Account is: 31.0
Purchased Item: banana
The Money Left in Bank Account is: 26.0
Purchased Item: apple
The Money Left in Bank Account is: 23.0