## COM2108 Functional Programming Assignment 1

## Testing

Function	Test Case	Function Call	Result
listToBag	List with one element	listToBag ["A"]	[("A",1)]
	List with multiple	listToBag ["A","A","B"."B","C"]	[("A",2),( "B",2),( "C",1)]
	elements in order		
	List with multiple	listToBag ["A","B","A","C","A","B","D"]	[("A",3),("B",2),("C",1),("D",1)]
	elements out of order		
	Empty list	listToBag []	Controlled exception: Empty list
bagEqual	Two empty bags entered	bagEqual [] []	True
	One empty bag	bagEqual [("A",1)] []	In both cases: False
	entered		
		and	
		bagEqual [] [("A",1)]	
	Equal bags	bagEqual [("A",4),("B",3)] [("A",4),("B",3)]	True
	Equal bags in	bagEqual [("A",4),("B",3)] [("B",3),("A",4)]	True
	different order		
	Unequal bags	bagEqual [("A",4),("B",3)] [("B",3),("A",10)]	In both cases: False
		and	
		bagEqual [("A",4),("B",3)]	
		[("B",3),("A",10),("C",2)]	

bagInsert	Insert new item into empty bag	bagInsert [] 5	[(5,1)]	
	Insert item that already exists	bagInsert [("P",1),("I",9),("K",9),("A",5)] "A"	[("P",1),("I",9),("K",9),("A",6)]	
	Insert item that does not already exist	bagInsert [("P",1),("I",3),("K",2)] "A"	[("P",1),("I",3),("K",2),("A",1)]	
	The directory exist		I .	
bagSum	Two empty bags entered	bagSum [] []		
	Bags with same elements entered	bagSum [("A",5),("B",2)] [("A",5),("B",2)]	[("A",10),("B",4)]	
	Bags with different elements entered	bagSum [("A",2),("B",7)] [("C",2)]	[("A",2),("B",7),("C",2)]	
	Bag containing items and empty bag	bagSum [] [("A",2)]	In both cases: [("A",2)].	
	entered	and	In the original test an error was discovered: corrected with an extra function.	
		bagSum [("A",2)] []		
	T			
bagIntersection	Two empty bags entered	bagIntersection [] []	Controlled exception: Bags are empty	
	Bags with same elements entered	bagIntersection [(1,2),(2,5)] [(1,2),(2,5)]	[(1,2),(2,5)]	
	Bags with different elements (equal element in both)	bagIntersection [("A",7),("C",4)] [("A",2),("B",4)]	[("A",2)]	
	Bag containing items and empty bag	bagIntersection [("A",2)] []	In both cases: []	
	entered	and		
		bagIntersection [] [("A",2)]		