CS119 – Lab 11
Due Date: April 24

Purpose: The last ADT that we will examine is the Bag (or multiset) which is a set which can contain duplications. The implementation of this using a heap is important because heaps since this structure selects minimum (or maximum) values very efficiently. This makes it a good choice for sorting values.

Knowledge: This lab will help you become familiar with the following content knowledge:

- How to use the Bag ADT

Task: Follow the steps in this lab carefully to complete the assignments. Copy the lab11 folder and complete the following assignments. Start by creating a file and import the Bag module. Create a couple of bags containing the letters "HELLO" and "WORLD". Make sure you understand why the bags are created as they are and that they maintain our heap property.

Assignment 1:
Write a function `sortBag :: (Ord a) => Bag a -> [a]` which returns a list of the items in the bag in sorted order. You should be able to do this using only the given operations on bags.

What is the efficiency of the `sortBag` function?

Criteria for Success: In a separate file that imports the Bag module create a bag from the letters "HELLO" and verify that your function alphabetizes (sorts) the letters. Also make sure that you have clearly explained why you believe the order of growth that you provided is accurate.

Submit all your file in Canvas for grading.