**Stacks and Queues Project part 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**You are going to continue working in your StacksAndQueues project. For the second part of the project, you are going to create a “PriorityQueue” class and add to the main class you already created.**

**Queue class:**

**1 private ArrayList of Strings**

**1 constructor to initialize the ArrayList**

**4 methods:**

**push(String a) will take a string and add it to the end of the ArrayList.**

**The Queue is NOT stored in priority order.**

**pop() will remove the first item based on priority order from the ArrayList and return it.**

**isEmpty() will return true or false if the list is empty**

**peek() will return the first item in priority order without removing it.**

**\*\*\*Additional methods can be used, but they must be declared “private”**

**Priority:**

**This queue will be based on the following priority order of the pop method:**

**1. Capital letters**

**2. Lower case letters**

**3. All other characters.**

**Within each priority level, values should be returned in the order they appear in the ArrayList. The Queue is NOT stored in priority order.**

**Main class:**

**Create an instance of the PriorityQueue object and also a String that can be scanned in from a user. The class should analyze the String using the substring method and push each value onto the PriorityQueue. Then you should “pop” the array until it is empty and print out the values as they are returned. This should result in printing out the values in priority order.**

**Example: If the user enters the following String of characters:**

**9eQAfb!c7**

**The program should do the following:**

**push each character onto the PriorityQueue as a String**

**pop and then print each value as they are returned in priority order**

**The display should be:**

**QAefbc9!7**