CSE222 HW6 Report

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How Do I design my Project?

The code starts from main in the myMap file. I generate 1 map and send this map to the menu method. In this method, preprocess processes are applied. Getting string from user. It is converted to lowercase and non-letter characters are deleted. I had defined these operations inside the constructor, but I had to define a map as a template elsewhere. This caused an error because of the scan operation. This part contains parts 1 and 2 of the assignment.

When we return to Main again, I generate a mergeMap element and thus provide access to the mergeMap class. Calling only the print method that appears on Main. however, when I create the mergeMap element, I also fill in the aux after the first definitions. Thus, I can have easy access to the key part of the hashmap.

In the print method, the original and merge sorted list is displayed on the screen. However, it also calls the methods that will do the merge operation during the display. Thus, I can print to the screen without changing the location of many elements. I keep a new separate map for the sorted map. Thus, when I want to compare, I can also access the original map.

I start the merge process with the sortmap method. I'm checking if map in is empty or null filled. Then, in order to include the data in the sorting process, I transfer the map entries to a list type container and call the sort method. here I call the merge method by splitting the list in half and splitting each half in half again at each function call. Here are the recursively halved indexes from the previous method. Comparisons are made using these indexes and so I filled the merged list. Then I transferred the data to the list I sent as a parameter. So, when I returned to the sortmap I called it in the first place, I accessed the merged list and processed it to sortedmap.

Test1:

```
Enter a string: Buzzing bees buzz.
Original String:     Buzzing bees buzz.
Preprocessed String: buzzing bees buzz

The original (unsorted) map:
Letter: b - Count: 3 - Words: [buzzing  bees  buzz  ]
Letter: u - Count: 2 - Words: [buzzing  buzz  ]
Letter: z - Count: 4 - Words: [buzzing  buzzing  buzz  buzz  ]
Letter: i - Count: 1 - Words: [buzzing  ]
Letter: n - Count: 1 - Words: [buzzing  ]
Letter: g - Count: 1 - Words: [buzzing  ]
Letter: e - Count: 2 - Words: [bees  bees  ]
Letter: s - Count: 1 - Words: [bees  ]

The sorted map:
Letter: i - Count: 1 - Words: [buzzing  ]
Letter: n - Count: 1 - Words: [buzzing  ]
Letter: g - Count: 1 - Words: [buzzing  ]
Letter: s - Count: 1 - Words: [bees  ]
Letter: u - Count: 2 - Words: [buzzing  buzz  ]
Letter: e - Count: 2 - Words: [bees  bees  ]
Letter: b - Count: 3 - Words: [buzzing  bees  buzz  ]
Letter: z - Count: 4 - Words: [buzzing  buzzing  buzz  buzz  ]
```

Test2:

```
Enter a string: 'Hush, hush!' whispered the rushing wind.
Original String:     'Hush, hush!' whispered the rushing wind.
Preprocessed String: hush hush whispered the rushing wind

The original (unsorted) map:
Letter: h - Count: 7 - Words: [hush  hush  hush  hush  whispered  the  rushing ]
Letter: u - Count: 3 - Words: [hush  hush  rushing ]
Letter: s - Count: 4 - Words: [hush  hush  whispered  rushing ]
Letter: w - Count: 2 - Words: [whispered  wind ]
Letter: i - Count: 3 - Words: [whispered  rushing  wind ]
Letter: p - Count: 1 - Words: [whispered ]
Letter: e - Count: 3 - Words: [whispered  whispered  the ]
Letter: r - Count: 2 - Words: [whispered  rushing ]
Letter: d - Count: 2 - Words: [whispered  wind ]
Letter: t - Count: 1 - Words: [the ]
Letter: n - Count: 2 - Words: [rushing  wind ]
Letter: g - Count: 1 - Words: [rushing ]

The sorted map:
Letter: p - Count: 1 - Words: [whispered ]
Letter: t - Count: 1 - Words: [the ]
Letter: g - Count: 1 - Words: [rushing ]
Letter: w - Count: 2 - Words: [whispered  wind ]
Letter: r - Count: 2 - Words: [whispered  rushing ]
Letter: d - Count: 2 - Words: [whispered  wind ]
Letter: n - Count: 2 - Words: [rushing  wind ]
Letter: u - Count: 3 - Words: [hush  hush  rushing ]
Letter: i - Count: 3 - Words: [whispered  rushing  wind ]
Letter: e - Count: 3 - Words: [whispered  whispered  the ]
Letter: s - Count: 4 - Words: [hush  hush  whispered  rushing ]
Letter: h - Count: 7 - Words: [hush  hush  hush  hush  whispered  the  rushing ]
PS C:\Users\e.kabalci2018\Desktop\data6>
```