Assignment 3 - Due on Oct 17rd 2021

Github link : https://github.com/kpavan95/CS5343/blob/main/src/com/assignments/assignment3/

Requirements

- JDK 8 and above installed

Zip file

As part of the submission, a zip file will be provided which will have 3 items
- Assignment folder: It's a java project which contains the code . Note: you can also go to the above Github link and look at the code.
- assignment3.jar: It's the executable file to run the program. Instructions to run it are provided below in the Execution Instruction section
- This readme file in pdf format

Build Program

Note: the executable jar is already provided as part of the assignment submission so the jar can be downloaded and this part can be skipped.

- Download the source folder submitted or download it from the github link.
- Open terminal and change directory to the root folder
- Create a binary folder to store the .class file

> mkdir bin

- Compile the .java files using the following command

> javac src/com/assignments/assignment3/*.java -d bin/

- change directory to bin folder

> cd bin/

- Create a Executable jar file using the .class files

> jar cfe assignment3.jar com/assignments/assignment3/Assignment3 com/assignments/assignment3/*.class
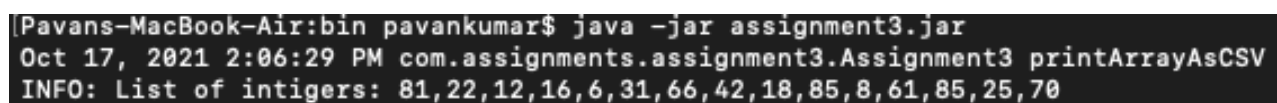
now the executable assignment3.jar is ready to use.

Execution Instruction

To run the program, enter the following command in terminal where the executable jar is located

> java -jar assignment3.jar

The screenshot below shows the program in different stages of it's execution

Figure 1: Raw data in Array

```
Oct 17, 2021 2:06:29 PM com.assignments.assignment3.Assignment3 main
INFO: Converting array into heap
Oct 17, 2021 2:06:29 PM com.assignments.assignment3.Assignment3 printArrayAsCSV
INFO: List of intigers: 6,8,12,16,22,31,25,42,18,85,81,61,85,66,70
```

Figure 2: Array converted to Min heap

```
Oct 17, 2021 2:06:29 PM com.assignments.assignment3.Assignment3 main
INFO: Sort array in Descending order using Heap Sort
Oct 17, 2021 2:06:29 PM com.assignments.assignment3.Assignment3 printArrayAsCSV
INFO: List of intigers: 85,85,81,70,66,61,42,31,25,22,18,16,12,8,6
```

Figure 3: Array sorted in descending order using heap sort