CPE 102

Computer Programming

HW3S23 Report

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PopularName Class

This class stores the ranking in the population, the name and total number of babies with that name which is all of String data type.

metin içeren bir resim

Açıklama otomatik olarak oluşturuldu

Figure 1.0

Getters And Setters

These are getter and setter functions of instance variables.

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Açıklama otomatik olarak oluşturuldu

Main Function

In main function there is some parts that I want to explain.

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Açıklama otomatik olarak oluşturuldu

Figure 2

In this part, I created three array lists. PersonArrayList for the part that program will read the data from csv file and split it then add to this array list. I declared this in String data type because when Scanner read the data from csv file, it’ll read the file as string.

openFile() Function

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Açıklama otomatik olarak oluşturuldu

Figure 2.1

As you can see from the Figure 2.1, program will read data from the csv file, in order to do this, I used Scanner class to read line by line the csv file. Program will ask for the fileName to user. We must use try-catch blocks because of if there is no file exists called such as filename there will be an error called FileNotFoundException. To avoid this, we use try-catch blocks.

StringTokenizer simply does is its split the lines depending on the delimiter which is taking as parameter. I chose this parameter as “, ” (comma). Because of our data is written as **rank, male-name, male-number, female-name, female-number**. To split this to words I used comma as delimiter.

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Açıklama otomatik olarak oluşturuldu

Figure 2.2

In the code snippet above, program creating new PopularName objects and adds to our gender lists. In the below, I showed you how this code snippet works.

diyagram içeren bir resim

Açıklama otomatik olarak oluşturuldu

Figure 2.3

Our data is like on the left of this screenshot after we split it. As you can see, each 5 elements it turns back to the ranking (the period is 5). This means that 5n+i, (n can be any integer from 0 up to 200 and i is from 0 up to 4) if i=0 it will give ranking, if i=1 it will give male-name, if i=2 it will give male-number, if i=3 it will give female-name and if i=4 it will give female-number. In other words, after the ranking number, first two elements are respectively male-name and male-number, last two elements are respectively female-name and female-number. (If i%5 (I mod 5) == 1 then this i is index of male-name, if i%5 == 3 then i is index of female-name).

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Açıklama otomatik olarak oluşturuldu

Figure 2.4

As you can see at the code snippet above, we are asking to user a gender and a name to search.

getInfo() Function

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Açıklama otomatik olarak oluşturuldu

Figure 2.5

This function takes to parameters namely, list which is a ArrayList of PopularName objects and name which is a String.

Firstly, I must create a null object because if I directly search the given name, if this name doesn’t exist in the file, I can’t print “this name doesn’t exist”. It will print “this name doesn’t exist” for each object if object name and given name is not same.

getPercentage() Function

metin içeren bir resim

Açıklama otomatik olarak oluşturuldu

Figure 2.6

This function takes two parameters namely, list which is a ArrayList of PopularName objects and a name which is string.

All it does is simply, calculate the total number of babies in this gender and calculate the percentage of given baby name.

sortAlphabetically() Function metin içeren bir resim

Açıklama otomatik olarak oluşturuldu

Figure 2.7

As you can see from the Figure 2.7, this method is sorting an array list alphabetically. I used bubble sort algorithm here. I want to explain how compareTo() to works here. The compareTo() method compares two strings lexicographically and the comparison based on the Unicode of each character in the strings. If first element’s name comes before the second’s elements name (lexicographically) then it will return positive number, if they are equal, it will return 0, if second comes before first then it will return negative number.