Recruitment Robot

Ceren Kaplanlı/117200048

İrem Sözen/118200084

Sena Cantekin/11700041

Tuğçe Gürsu/118200052

Tules Su Erikçi/118200035

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Uzay Çetin

**Main Class**

In Main class, it reads the data from Excel file and then takes new data from the user. It prints out the K shortest distances by sorting. Finally it gives the result of the recruitment.

BufferedReader is used to reach the data from Excel file named “data.csv”.

lineValues[] is created for the values in each row.

inputArray[] is for the new student data.

In try it splits the numbers by using split() method. Then it creates inputArray with the size of rows. For each feature it uses parse.Double() by increasing the index of the lineValues which is every feature. For example lineValues[0] is representing social.

By using Scanner it reads new values from the user to compare with the given ones. It also takes K value from the user to find the K nearest ones.

It creates new Student object inputStudent with the data taken from the user.

sortedStudents[] method collects all data and the created student then, sorts the nearest neighbors k.

Purpose of for loop is getting the number of nearest values.

If the total number of 1 is bigger than the total number of 0 , it prints out “Hired” .

If the total number of 0 is bigger than the total number of 1 , it prints out “Not hired” .

If the numbers are equal , it prints out “equal number of 0 and 1 are predicted for the new candidate”.

**QuickSortStudent Class**

QuickSortStudent class is a sorting class.

QuickSort is a Divide and Conquer algorithm. It picks an element as pivot and partitions the given array around the picked pivot. QuickSort is faster in practice than Merge Sort and Heap Sort, because its inner loop can be efficiently implemented on most architectures, and in most real-world data.

Partition method takes last element as pivot, places the pivot element at its correct position in sorted array, and places all smaller (smaller than pivot) to left of pivot and all greater elements to right of pivot by their euclid distances.

sort(Student arr[],int low,int high) sorts elements recursively before partition and after partition. arr[] is array to be sorted. Int low is starting index and int high is ending index.

sortStudents(Student arr[],Student inputStudent) method copies original array as newArray then,sorts it.

**Student Class**

Student class has 6 properties which are social, gpa, age, algorithm ,y and index.

private double social is defined for social skill of the candidate.

private double gpa is defined for gpa of the candidate.

private double age is defined for experience time quailty of the candidate.If candidate is younger than the others, he or she has low point.

private double algorithm is defined for algorithm skill of the candidate.

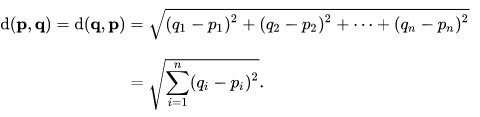
private double y is defined for to observe if the candidate is hired or not.(1 or 0)

private int index is defined for to save the default order of the student.

public Student(double social,double gpa,double age,double algorithm,double y, int index) is a constructor.

toString() method prints out the student’s properties in terminal.

getEuclid(Student student) method calculates euclid distance between data and the created student according to the formula as the shown in the below. It substract student’s properties from data’s properties and it takes power of 2. Then, all of them will be summed and taken of square root by squareRoot(double sum) method.



**References**

1. [**https://www.geeksforgeeks.org/quick-sort/**](https://www.geeksforgeeks.org/quick-sort/)
2. [**https://files.realpython.com/media/euclid.ffdfd280d315.png**](https://files.realpython.com/media/euclid.ffdfd280d315.png)