CMPE 211 PROJECT REPORT

HIRING ROBOT

My project works like it takes datas from a text file these datas represent a person’s social skills ,algorithm ,gpa, age and if the person hired or not by the order.The properties that matters is social skills and knowledge the other properties doesn’t lead a person to hired.When we take the data we need to normalize the properties since we need all the value to effect equally.When a person applied for a job the program takes its social skills and algorithm calculate its Euclidian distance from the datas one by one then we sort the distances from lower to higher then takes the nearest 5 person and look for if they are hired or not if more than half of the persons are hired than the person is also hired.

Taking datas from text file

First of all we create a string array up to row numbers and one 2 dimensional array in the form of rows and columns then we specify the location of our file by using Path class and scan it by using Scanner class(since we know the location by using path class).By a for loop we place the all the rows into a string array then we create a string array which takes 5 string.After that we split the rows by using split class (according to commas) and we put them a string array which takes 5 string then one by one we take the values in each rows than put them into 2 dimensional double array.Finally we returns our double array.

Normalizing method

First of all we create methods that finds max and min numbers then we put all columns separately into arrays and find their max and min values.We normalized the numbers in double array one by one by subtract the min number from the number we want to normalize then divide them different of their max’s and min’s number.

Euclidian distance method

The method takes one double array and a 2 dimensional double array.We create a 2 dimensional double array which can takes the length of the 2 dimensional array in the input and 2 properties ( first one is the euclidian distance second one is the information that the person is hired or not).One of the properties holds the euclidian distance and other one holds the information if the person hired or not.We create a count variable to find out which person we take action.After that we create a sum variable to calculate euclidian distance we subtract the first element’s first property in the data base into people’s first property who apply for job than square them by using our helot method power(which takes took double number first one is the number which we want to power up the second number is the power than calculate the number that powered up) then add them into sum variable.Than we make the same calculation with 2. property.Than we take the square root of sum variable( by square method which takes a double number for input than squared the number ) then we apply it into first element of creating array then we take the 5. property of the person who we comparing with than put it into near of the distance we have found .

Reset sum to make another calculation

Increasing the count to make another calculation

Finally we return the array.

QuickSort method

Firstly we find the pivot number by adding half of the difference between higher index and lower index into lower index .After that we divide the array into 2 parts.

İn each iteration we will identify a number from left side which is greater than the pivot value and also we will identify a number from right side which is less then the pivot value .Once the search is done ,then we exchange both numbers by exchangeNumbers method it takes 2 number and it works like it assigns a temp number to the arrays i. number and it assigns j. number of array to the i. Number of array than it assign temp to the j. number of array.After that parallelly it does the same thing to the values array which has the information about the value which shows the candidates if they hired or not.After we call the exchangeNumber method we call quickSort() method recursively.

İseAlım method

İt takes 2 2 dimensional double array first one is the candidates who new apply, the second one is our datas.

First of all we normalize the new appliers then we create a new double array and calculate the appliers euclidian distance between our data then we place the results into one dimensional double array and place the data’s information about they hired or not to another one dimensional array and by way of exchangeNumbers method when we use quick sort and sort them lower to higher the values in the second array( which takes the information that person is hired or not ) puts the place they suppose to be .Than it sum up to first 5 element in the second array and look for if the result is higher than 2 or not if it is not than appliers can’t be hired.

In the main we remove the information about data’s hired or not and normalize the other properties than put them into array with the information that indicates hired or not then we call the İşeAlım method with new appliers and the datas.