Lab 8.

You will use the same input file as Lab 7: data.txt. This time, you will need to use the Naïve Bayesian model. Please use the formula that contains λ and set it to 1/n where n is the total number of tuples (150 in our case). Your program should ask the user for the values of the first four attributes and print the category of the tuple.

Example use (User input in italic)

Enter value for attribute 0: 5

Enter value for attribute 1: 3

Enter value for attribute 2: 1

Enter value for attribute 3: 2

For value 1: Probability is: 9.469009551660138E-10

For value 2: Probability is: 2.3431669959721997E-5

For value 3: Probability is: 1.7933633414224517E-6

Expected category: 2

Design Considerations.

You will extend the Matrix class. You need to add the following methods.

* public ArrayList<Integer> findAllRows() //returns all the indices of all rows, e.g., 0,1,... up to the total number of rows -1
* public int getCategoryAttribute() //returns the index of the category attribute
* public double findProb(int[] row, int category) //takes as input the values for a single row, e.g., 5,3,1,2 and the category, e.g. 2. Returns the probability that the row belongs to the category using the Naïve Bayesian model.
* public int findCategory(int[] row) //takes as input the values for a single row, e.g., 5,3,1,2. Returns the most probable category of the row using the Naïve Bayesian Model.

Add a Main class with the following methods.

* main method
* readInput //reads input from file
* getCustomerInput //reads input from keyboard