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CS124

Project Report 1

The aim to this project is to read through a .csv file and load the data into a vector and do some operations with the data. The data file used is about all the fall courses in University of Vermont in 2021, the source is from the Office of Register

https://serval.uvm.edu/~rgweb/batch/curr_enroll_fall.html, and was modified a little bit. There are 9 attributes in the .csv file and then become the fields for the class, some naming follows abbreviations used in CSV file:

- rowId: the row ID for ordering
- subject: the subject that the course belongs to
- title: the title of the course
- CRN: the registration number for this course
- college: the college code that the class belongs to
- maxEnrollment: the maximum enrollment of the course
- currEnrollment: the current enrollment of this course by now
- instructor: the professor name of the course, in the format of FirstName, LastName
- email: the uvm email address of the professor

This data set is a very common in topics and clear in format, with few noise data in it and perfectly presents the data. The original dataset is ordered by title over alphabet, and I add a column named rowId in the first place from 1 to 5422, and now the dataset is ordered by this.

To know the functions works well, there are a function called `courseTest()` to test in 2 ways with the help of `assert()` method. Firstly create a object to test constructor, then using `assert` to check if getters work; next, use setter to change the values in fields, use `assert` method to check if the values are reset.

There are 3 calculation functions – the first one is `needInstructor()`, which is to count the number of classes with no professors or lecturer assigned; the next one is `maxEnrollment()` that is aim to find the largest and smallest max enrollment; then the last one is `ifAvailable()`, which is to show how many courses have available seats. Although some data in the dataset is stable by time, there are 3 helpful functions for a university courses analysis, to quickly know if there are any class row needs any necessary information or show the availability of the class just within simple calculations. Afterall, it is necessary to obtain a general view of the dataset in a large amount.