

CS115 Introduction to Programming with Python

Lab Guide 09

Objectives: Numpy using Jupyter notebook

The file `exam.csv` contains `city_code`, number of candidates who will enter English, French and German exams respectively.

The column headings in the data file describe the data stored in each column (open file with Excel, Notepad++, etc.).

1. Create a Python script that does the following:
 - a. Transfer `exam.csv` data into a numpy array, data as integers. Use `np.loadtxt()`.
 - b. Separate city codes and exam information into `city` and `exams` arrays.
 - c. Store the total number of candidates who will enter in each city in `total` array.
 - d. Find the index `ind` of the maximum total.
 - e. Find the city code with highest number of total candidates.
 - f. Create an array query of those exam values with English exam more than the sum of French and German Exams.
 - g. Create an array `pos` to store the indexes of those cities in `exams` array where either French exam candidates or German exam candidates are more than English exam candidates.
 - h. Add 10 more candidates to English and German exam candidates in `exams` array and after merging city codes with `exams` array write the data to a new file `newdata.txt`.