# CS 115 - Introduction to Programming in Python

# Lab Guide 09B

**Lab Objectives:** Searching and Sorting.

1. Download the class, **Doctor**, from Moodle.
2. Update the class to include the following:
   1. Override the \_\_eq\_\_ method which compares two objects for equality, and returns True if they are equal, False if not. Two doctors are equal if their id number is the same.
3. Create a script which includes the following:

* **selectionSort()**: takes a list of Doctors as a parameter, and sorts the doctors according to their specialty and name. The list should be sorted in place, no new lists should be created.
* **searchDoctors(): a recursive** function that takes a list of Doctors, and the hospital to search and the ending index of the list and returns all Doctors in the list from the given hospital (and an empty list if no doctors found for the given hospital.
* **readDoctors():** takes an empty list and a file name as parameters, and using the file data, creates Doctor objects and adds them to the list.
* **Your script should do the following:**
  + - * Read the data from the doctors.txt into a list.
      * Sort the list according to their specialty and name
      * Display the sorted list.
      * Input a hospital from the user and display the doctors at the given hospital (or appropriate message if no doctors exist)
      * Input the information about a doctor from the user, and if the doctor does not exist, add them to the list.

**Sample Run 1:**

Enter hospital to search: Medicana

List of Doctors at Medicana

12345 Ali Ayhan Cardiology Medicana

47896 Ayla Guner Cardiology Medicana

63215 Veysel Karakus Optometry Medicana

Doctors by specialty and name:

12345 Ali Ayhan Cardiology Medicana

47896 Ayla Guner Cardiology Medicana

87954 Jale Tunc ENT Bayindir

56987 Melis Koc ENT TOBB ETU

36985 Irem Basar Gastroenterology Ankara Hospital

74532 Elif Som Optometry Ankara Hospital

15487 Mehmet Keskin Optometry Hacettepe Hospital

63215 Veysel Karakus Optometry Medicana

Enter doctor id, name, specialty and hospital: 63215,Veysel Karakus,Optometry,Medicana

Doctor exists

**Sample Run 2:**

Enter hospital to search: Memorial

No doctors in that hospital

Doctors by specialty and name:

12345 Ali Ayhan Cardiology Medicana

47896 Ayla Guner Cardiology Medicana

87954 Jale Tunc ENT Bayindir

56987 Melis Koc ENT TOBB ETU

36985 Irem Basar Gastroenterology Ankara Hospital

74532 Elif Som Optometry Ankara Hospital

15487 Mehmet Keskin Optometry Hacettepe Hospital

63215 Veysel Karakus Optometry Medicana

Enter doctor id, name, specialty and hospital: 14524,Hale Evren,Cardiology,Memorial

New doctor added