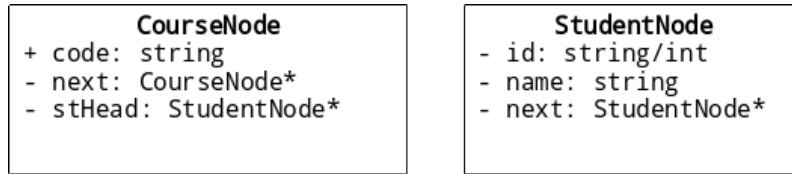


CENG218 Homework 3

Implement the following classes:

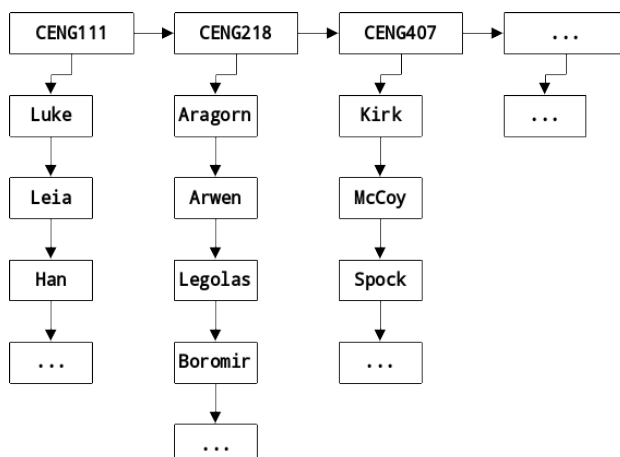


CourseNode is a class which has a variable for storing its code (e.g. CENG218), a pointer to another CourseNode object and a pointer to a StudentNode object. **StudentNode** is a class which has two variables for storing student id and name, and a pointer to another StudentNode object. You are expected to implement additional member functions (e.g. add, search, delete, size, list, etc) as necessary.

You are expected to create a text file containing names of different courses and students. Feel free to format your file according to your liking. An example file (which is shown below) can contain course names, student information and a special END keyword denoting a course list has ended and another course may begin after that line:

```
CENG111
Luke 101
Leia 102
...
END
CENG218
Aragorn 201
Arwen 202
...
END
CENG407
Kirk 301
McCoy 302
...
END
```

When you execute your program, it must first parse this text file and create the following structure using CourseNode and StudentNode objects:



Then your program is expected to display a menu to the user and perform various tasks:

1. Display student lists for all courses,
2. Add new course,
3. Delete existing course (along with all students enrolled to it),
4. Enroll a new student to a course,
5. Unenroll student from a course,
6. Search for a student,
7. Save and exit

Don't forget prevent memory leaks by freeing memory occupied by deleted objects for 3rd and 5th menu options.

A brief sample run is provided below:

```
1. Display courses
2. Add new course
3. Delete existing course
4. Enroll student
5. Unenrol student
6. Search student
7. Save and exit
```

```
Your choice: 2
Enter course name: CENG222
```

```
... Your choice: 3
Available courses:
1. CENG111
2. CENG218
3. CENG407
4. CENG222
Which course? 3
```

```
... Your choice: 4
Enter course code, student id and name: CENG222 401 Peter
```

```
... Your choice: 5
Available courses:
1. CENG111
2. CENG218
3. CENG222
Which course? 1
Available students:
1. Luke
2. Leia
3. Han
Which student? 1
```

```
... Your choice: 6
Enter student name: Legolas
Legolas is enrolled to CENG218
```