

NetBeans Workspace: [College](#)

JCreator Workspace: [College](#)

Directions

Information about a College includes its name, its tuition, and the region in which it is located. The following interface declaration will be used to store and retrieve information about a college.

```
public interface College
{
    String getName();
    String getRegion();
    int getTuition();
    void setTuition(int newTuition);
}
```

The following class declaration will be used to store information about a group of colleges.

```
public class CollegeGroup
{
    private ArrayList <College> myColleges;

    // precondition: collegeName exists in this CollegeGroup
    // postcondition: tuition for collegeName is changed to newTuition
    public void updateTuition(String collegeName, int newTuition)
    {
        /* implemented in part(a) */
    }

    // precondition: low <= high
    // postcondition: returns an ArrayList of colleges in region
    // where low <= tuition <= high;
    public ArrayList <College> getCollegeList(String region, int low, int high)
    {
        /* implemented in part(b) */
    }

    // constructors, other methods and instance variables not shown
}
```

The following chart shows an example of colleges that could appear in an object of type CollegeGroup.

Name	Region	Tuition
Colgate University	Northeast	\$27,025
Duke University	Southeast	\$26,000
Kalamazoo College	Midwest	\$19,764
Stanford University	West	\$25,917
Florida International University	Southeast	\$10,800
Dartmouth College	Northeast	\$27,764
Spelman College	Southeast	\$11,455

- a. Write method **updateTuition**. `updateTuition` changes the tuition of the college whose name is passed as a parameter.

For example, if the object `colleges` is of type `CollegeGroup` and contains the entries shown in the chart above, the call `colleges.updateTuition("Colgate University", 27500)` would change the tuition of Colgate University to \$27,500.

Complete method **updateTuition** below.

```
// precondition:  collegeName exists in this CollegeGroup
// postcondition: the tuition for collegeName is changed to newTuition
public void updateTuition(String collegeName, int newTuition)
```

- b. Write method **getCollegeList**. `getCollegeList` returns an `ArrayList` of colleges that are located in the specified region and whose tuition is in the range between `low` and `high`, inclusive. The size of the `ArrayList` should be equal to the number of colleges that meet the criteria of region and tuition range.

For example, if the object `colleges` is of type `CollegeGroup` and contains the entries shown in the chart above, the call `colleges.getCollegeList("Southeast", 10000, 20000)` should return an `ArrayList` of size two containing Florida International University and Spelman College (note that Duke University is not included because its tuition is not in the specified range and Kalamazoo College is not included because it is not in the specified region).

Complete method **getCollegeList** below.

```
// precondition:  low <= high
// postcondition: returns array of colleges in region
//               where low <= tuition <= high;
//               the size of the array returned is equal to the number
//               of colleges that meet the criteria
public ArrayList <College> getCollegeList(String region, int low, int high)
```