

MP5

1. (10 points) Implement the methods:

- public static String closure(String attributes, ArrayList<FD> fds);
- public static ArrayList<FD> eliminateRedundantAttributes(ArrayList<FD> fds);

Methods are in posted class NormalizeDatabase along with class FD.

Test your methods with the FDs given in main of the posted class.

***12.24** (Create class **Large**) Create a data file with 1,000 lines. Each line in the file consists of a faculty member's first name, last name, rank, and salary. The faculty member's first name and last name for the i th line are `FirstName i` and `LastName i` . The rank is randomly generated as assistant, associate, and full. The salary is randomly generated as a number with two digits after the decimal point. The salary for an assistant professor should be in the range from 50,000 to 80,000, for associate professor from 60,000 to 110,000, and for full professor from 75,000 to 130,000. Save the file in `Salary.txt`. `SALARY.txt` is posted.

Here are some sample data:

```
FirstName1 LastName1 assistant 60055.95
FirstName2 LastName2 associate 81112.45
...
FirstName1000 LastName1000 full 92255.21
```

***13.2** (Create class **ShuffleArrayList**) Write the following method that shuffles an `ArrayList` of numbers:

```
public static void shuffle(ArrayList<Number> list)
```

13.3 (Create class **SortArrayList**) Write the following method that sorts an `ArrayList` of numbers.

```
public static void sort(ArrayList<Number> list).
```

***13.5** (Create class **GeometricObject**) Modify the `GeometricObject` class to implement the `Comparable` interface, and define a static `max` method in the `GeometricObject` class for finding the larger of two `GeometricObject` objects.

***13.8** (Create class **MyStack** class) Rewrite the `MyStack` class in Listing 11.10 to perform a deep copy of the `list` field.

****13.4** (Create class **DisplayCalendars**) Rewrite the `PrintCalendar` class in Listing 6.12 to display a calendar for a specified month using the `Calendar` and `GregorianCalendar` classes. Your program receives the month and year from the user until the user quits with "q" or "Q". Your program displays:

```
Command Prompt
c:\exercise>java Exercise13_04 5 2016
      May, 2016
-----
Sun Mon Tue Wed Thu Fri Sat
  1  2  3  4  5  6  7
  8  9 10 11 12 13 14
 15 16 17 18 19 20 21
 22 23 24 25 26 27 28
 29 30 31

c:\exercise>
```