



Exercises

1. Write a program **Schedule.java** that uses several variables to store the names of your classes and their teachers. You must then display them in a nice little table like the following:

```
+-----+
| 1 |      ENGL 201 |      Dr. Dagher |
| 2 |      MATH 201 |      Dr. Tlas |
| 3 |      CMPS 211 |      Dr. Jureidini |
| 4 |      CMPS 200 |      Dr. El-Hajj |
+-----+
```

In this table, the column of courses has a width of 14 characters, and the teacher column has a width of 18. The first and last lines are a plus sign, 37 dashes (a.k.a. minus signs) and another plus sign. Your table doesn't need to look exactly like this, or even line up. Here, a total of eight variables (course1, course2, ... course4, teacher1, teacher2, etc.) were declared.

2. Write a program **Carpool.java** that calculates the number of passengers that can be carpooled given certain number of available cars and drivers. The output of your program should look like this:

```
There are 100 cars available today.
There are only 30 drivers available today.
There will be 70 empty cars today.
We can transport 120 passengers today.
We have to carpool 90 passengers today.
We need to put about 3 passengers in each car.
```

In this example, the total number of cars is assumed to be 100. Each car is assumed to have a space for 4 passengers. The total number of available drivers is assumed to be 30, and the total number of passengers that need to be carpooled is assumed to be 90. You must not simply use the same numbers; instead you must declare proper variables that can be assigned any value(s).

3. Write a program **DistanceConverter.java** that converts a distance in miles into its equivalent in km. You must declare two variables for holding the distance values. The output of your program should be as follows:

```
The distance is: 350 miles (563.2704 km)
```

4. Write a program **Position.java** that declares and initializes three `double` variables x_0 , v_0 , and t and prints the value of $x_0 + v_0t - gt^2/2$ where g is the constant 9.78033. **Note:** this value is the position (meters) after t seconds when an object is thrown straight up from initial position x_0 , at velocity v_0 (meters per second).

5. Write a program **Person.java** that prints the following output about some person's info:

```
Hello David Beckham!
We have learned that you are 42 years old;
that you are 74 inches (or 187.96 cm) tall;
that you are 180 pounds (or 81.6466266 kg) heavy;
that you have Brown eyes and Yellow hair;
and that your teeth are usually White.
If I add 42, 74, and 180 I get 296.
```

The output color-coded in blue represents variables that you must define; whereas the output color-coded in red represents a computation that you must implement (PS: your output needs not include the colors).

Submission Instructions and Guidelines

- Your submission must consist of a single zip folder that contains five .java files only (**Schedule.java**, **Carpool.java**, **DistanceConverter.java**, **Position.java**, and **Person.java**). No additional files should exist in the .zip folder.
- Give meaningful names to your methods and variables in your code.
- Include a comment at the beginning of your program with basic information about yourself and a description of the program. Include also a comment at the start of each method.
- The name of the zip file must adhere to the following naming convention *s#_A2_netid*, where # stands for your section number (between 1 and 6) and *netid* stands for your AUBnet user name. For example, if your AUBnetid is abc65 and you are in section 4, you should submit the following file: *s4_A2_abc65.zip*. The zip files will be processed automatically so please make sure you use this naming convention.
- **Failing to follow these guidelines will result in deducting marks form your grade.**