# Core Java Syntax

## Overview

In this lab, you’ll create a new project and define a class that makes use of the core Java syntax covered in the chapter.

## Source folders

Student project: StudentCoreSyntax (you will create this project)

Solution project: SolutionCoreSyntax

## Roadmap

There are 4 exercises in this lab, of which the last exercise is "if time permits". Here is a brief summary of the tasks you will perform in each exercise; more detailed instructions follow later:

1. Creating a project and adding a main class
2. Declaring and using variables
3. Working with operators
4. Additional suggestions

## Exercise 1: Creating a project and adding a main class

In Eclipse, create a new Java project named StudentCoreSyntax.

In your new StudentCoreSyntax project, create a new package named student.coresyntax (this is the naming convention we'll use for packages from now on).

In the student.coresyntax package, create a new Java class named Main (it doesn’t actually matter what you name the class, but Main is as good as any ☺). In the Main class, write a simple main() method to act as the entry-point for your application.

Run the application as it stands, to make sure everything is OK so far.

## Exercise 2: Declaring and using variables

In the main() method, add code to do the following:

* Declare some variables to hold information about a city (e.g. the name of the city, its population, its longitude and latitude, the average amount of rainfall in a year, the average number of hours sunshine in a year, etc). Choose appropriate names and types for all your variables.
* Display the details on the console.

## Exercise 3: Working with operators

Explore the use of operators discussed in the chapter, including:

* Assignment (i.e. =)
* Simple binary operators (such as +, -, \*, and /).
* Unary operators (especially ++ and --, both the prefix and postfix versions)

**Exercise 4 (If time permits): Additional suggestions**

* Ask the user to enter the radius of a circle. You can use the Scanner class to get the value entered by the user – the Scanner class has a function named nextInt() to read an int from the keyboard, and a function named nextDouble() to read a double from the keyboard.
* Calculate and display the area of the circle (the formula is PI \* radius \* radius).
* Calculate and display the circumference of the circle (the formula is 2 \* PI \* radius).