# Miscellaneous New Language Features

# in Modern Java

## Overview

This lab will give you an opportunity to use various new language features in modern Java:

* Type inference for local variables
* Private methods in interfaces
* Multi-line text blocks
* Multi-version JAR (if time permits)

## Instructions

Create a new folder, e.g. named student.miscLanguage. Copy everything from the demo.multiVersionJar folder to get you started.

* Define an interface with a combination of private methods, default methods, and at least one abstract method. For example:
  + A private method to generate a random number between -100 and +100.
  + A getCelsius() method that just calls the private method to get back a Celsius temperature.
  + A getFahrenheit() method that calls the private method to get back a Celsius temperature, converts into Fahrenheit, and returns it.
  + A getKelvin() method that calls the private method to get back a Celsius temperature, converts into Kelvin, and returns it.
  + An abstract method that returns a string.
* Define an implementation class that implements the abstract method, e.g., to return a formatted string with the temperatures in C, F, and K.
* Define a "main" class that displays a menu asking the user what option they want (e.g., 1 for C, 2 for F, 3 for K, 4 for a formatted string, and 5 to quit). Based on the user's input, call the appropriate method.
* Build and run the program as a JAR, and verify it works.
* If time permits, create a Java 17 implementation of the interface and fold this into the JAR. This is now a multi-version JAR. Build and run the JAR and verify it picks up your new implementation code.