# Classes and Objects

## Overview

In this lab, you will write an application that defines and uses an Employee class.

## Roadmap

There are 3 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. Defining a class and creating instances
2. Defining a companion object
3. Additional suggestions

## Exercise 1: Defining a class and creating instances

Write an application that defines a simple Employee class and creates some instances. Here are some suggestions and requirements:

* The Employee class needs to hold the name and annual salary of the employee, and the date he/she joined the company.
* Define a primary constructor for the Employee class, which initializes the employee's name and annual salary from passed-in values.
* Define a secondary constructor, which initializes the employee's name and sets the salary based on a basic amount plus a percentage bonus.
* Ensure the date the employee joined the company is initialized to the current date/time, regardless of which constructor was called. This value cannot be modified subsequently.
* The class needs to allow an employee to have a pay raise, so define a payRaise() method that takes the amount of the pay raise and adds it to the employee's current salary.
* The class should also have a toString() method that returns a textual representation of the employee's info.
* Write a simple main() function, where you can create some Employee objects and invoke methods upon them.

## Exercise 2: Defining a companion object

Define a companion object for Employee, to implement a class-wide mechanism to generate a unique ID for each employee.

**Exercise 3 (If time permits): Additional suggestions**

In the Employee class, define a few overloaded versions of a payBonus() method.

* One version of the method takes a Double parameter that specifies the percentage of the bonus (specify a default percentage bonus, e.g., 1%).
* Another version of the method takes three Double parameters that specify the percentage of the bonus, along with a minimum and maximum salary (such that the bonus only applies if the employee's salary is within that range).