

# Project 4

## Objectives

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The objective of this project is to learn how create a class on your own and how to write a driver module to test your code. You will also learn how to use `if-else` statements, `Scanner` class and `CurrencyFormat`, `enum` and `switch` statement.

## Background

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The project contains two classes – `Person.java` and `Project4Driver.java`

The `ProjectDriver` class represents a driver module for `Person.java` class. You will be writing code for both classes.

## Objectives

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This project provides you with the opportunity to put together nearly all of the material you have learned so far to create a single program. Most of what you are asked to do is very similar to what you did in the labs and in-class work, so look back at those labs and class examples for ideas.

## Procedure

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In this programming project, you will write a simple program to calculate federal tax for an individual.

1. Implement a class `Person` that represents a person in real world. The class has the following instance variables
  - `firstName`, `lastName` - These are of type `String`
  - `maritalStatus` - This is a `char` type - 'S' denotes single and 'M' denotes married
  - `taxFilingStaus` - This is an `enum` - `TaxStatus.java` is provided for you. Read [documentation on using enum in your code](#) and also [Using enum across multiple classes](#).
  - `taxableIncome` - This is of type `double`
2. The class has the following *public interface* consisting of 13 `public` methods:

- The constructor takes first name ( `String` type), last name ( `String` type), marital status ( `char` type), tax filing status ( `int` type) and taxable income ( `double` type) and initializes the instance variables
  - set methods for all 5 instance variables
  - get methods for all 5 instance variables
  - `toString` method that returns a String representation of the Person object
  - `computeFederalTax` that returns the federal tax owed by the person
- Please visit [Federal Income Tax Brackets 2012 to 2016](#) to compute the federal tax.
- Visit [Currency formatter](#) to format a decimal value to represent a currency.

3. Study the sample output and figure out how your code should work. A sample output is already provided for you.

## Specifications

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You can make computing federal tax simpler by having 4 private methods - one method for computing the tax for each of the 4 filing statuses. Remember that private methods are not part of the public interface - meaning they are not visible to the user (they don't appear in `Person.html` documentation). Private methods are sometimes called *utility* methods.

You need to submit your Project4 folder with the subfolder Project4Code with `Person.java` and `Project4Driver.java` files. A log file which must address **what you learned in this project and the difficulties you faced**, time you spent on the project, web sources you referenced etc. **The log file must be a plain text file, be named `DiscussionLog.txt`, and must be at the top level of your repository.**

## This is an Individual Assignment - No Partners

As this is a Project (and not a Lab) you will be working on your own, not with a partner. You should not be sharing your code with anyone else, other than the instructor.

You will need to fork your own private Project4 repository on GitLab for this project. The only person who should have any access to your repository is your instructor.

You can ask questions on Piazza about setting up your repository on GitLab, about using Git to send code to the instructor, and general questions about how to write your code. However you should not be posting sections of code and asking others to find your errors.

You can cut down your coding time by a significant percentage by:

- understanding the project specifications mentioned in this file
- tracing the output file to understand how your code should work
- figuring out what needs to be done before you start typing the code

- having a clear understanding of how to calculate the tax given the taxable income

## Deliverables

Be sure that you have your name and an explanation of what your program does in the Javadoc comments. Be sure that you have indented consistently.

**You have to submit a discussion log along with the project. Please refer to DiscussionLogGuidelines repository or Lab2 for more information.**

The instructor will pull your Project4 from your GitLab repository to grade it. Make sure:

1. You have pushed all changes to your shared repository. (I can't access local changes on your computer.)
2. You have added your instructor as Master to your shared GitLab repository.

## Due Date/Time

Your project deadline will be determined by your instructor

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