

## CSCI 218: Programming II (Spring 2025)

### Practice Exercise

#### Task 1: Tax Lab

Country XYZ calculates tax for its citizens using a graduated scale rate as shown below:

Yearly Income	Tax Rate
0 - 1000	0%
1,001 - 10,000	10%
10,001 - 20,200	15%
20,201 - 30,750	20%
30,751 - 50,000	25%
Over 50,000	30%

Design a Java class named CitizenTax featuring two properties, namely "name" and "yearly income." The class should include the following methods:

- **CalculateTax():** Computes the tax based on the yearly income.
- **printInfo():** Presents the user's name, yearly income, and tax.
- **updateIncome(double income):** Modifies the user's income.

Additionally, implement a default constructor and a constructor with two parameters to facilitate the inclusion of the name and income during object instantiation.

Test and Run your Program afterwards.

#### Example:

For users : 'Alex': 500, 'James': 20500, 'Deborah': 70000

The expected tax calculation output would be as follows:

'Alex': 0, 'James': 2490, 'Deborah': 15352.5

The tax for James would be calculated as follows:

The first 1000 (1000 - 0) Calculation:  $1,000 * 0\%$

Tax: 0

The next 9000 (10,000 - 1,000) Calculation:  $9,000 * 10\%$

Tax: 900

The next 10,200 (20,200 - 10,000) Calculation:  $10,200 * 15\%$

Tax: 1530

The remaining 300 (20,500 - 20,200) Calculation:  $300 * 20\%$

Tax: 60

Total Income: 20,500

Total Tax:  $0 + 900 + 1530 + 60 = 2490$