Student Name: Isaac Ephrem

Class and Section CSCI 3033-001 Java

**Due: September 09, 2020, before the class**

**Project: Computing Tax**

CSCI 3033 Introduction to Java Programming Language

Problem Description:

The United States federal personal income tax is calculated based on filing status and taxable income. There are four filing statuses: single filers, married filing jointly, married filing separately, and head of household. The tax rates vary every year. Table 3.2 shows the rates for 2009. If you are, say, single with a taxable income of $10,000, the first $8,350 is taxed at 10% and the other $1,650 is taxed at 15%. So, your tax is $1,082.5.

Table 1

2009 U.S. Federal Personal Tax Rates

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Marginal Tax Rate** | **Single** | **Married Filing Jointly or Qualified Widow(er)** | **Married Filing Separately** | **Head of Household** |
| **10%** | $0 – $8,350 | $0 – $16,700 | $0 – $8,350 | $0 – $11,950 |
| **15%** | $8,351– $33,950 | $16,701 – $67,900 | $8,351 – $33,950 | $11,951 – $45,500 |
| **25%** | $33,951 – $82,250 | $67,901 – $137,050 | $33,951 – $68,525 | $45,501 – $117,450 |
| **28%** | $82,251 – $171,550 | $137,051 – $208,850 | $68,525 – $104,425 | $117,451 – $190,200 |
| **33%** | $171,551 – $372,950 | $208,851 – $372,950 | $104,426 – $186,475 | $190,201 - $372,950 |
| **35%** | $372,951+ | $372,951+ | $186,476+ | $372,951+ |

You are to write a program to compute personal income tax. Your program should prompt the user to enter the filing status and taxable income and compute the tax. Enter 0 for single filers, 1 for married Filing jointly, 2 for married Filing separately, and 3 for head of household.

Here are sample runs of the program:

Sample 1:

Enter the filing status: 0

Enter the taxable income: 100000

Tax is 21720.0

Sample 2:

Enter the filing status: 1

Enter the taxable income: 300339

Tax is 76932.87

Sample 3:

Enter the filing status: 2

Enter the taxable income: 123500

Tax is 29665.5

Sample 4:

Enter the filing status: 3

Enter the taxable income: 4545402

Tax is 1565250.7

Analysis:

(Describe the problem, including input and output in your own words.)

The problem presented is that we need to develop a way to calculate personal income taxt (output) based on the filing status (input) and taxable income (input)

Design:

(Describe the major steps for solving the problem.)

The major steps for solving the problem would be looking at each income bracket and making if statements for each filing status (0,1,2,3)calculating the taxable income for each bracket in those if statements. There also needs to be a method for user input such as the scanner class (import.java.util.scanner).

Coding: (Copy and Paste Source Code here. Format your code using Courier 10pts)

import java.util.Scanner;

public class OLA1{

public static void main(String[] args) {

Scanner keyboard = new Scanner(System.in);

System.out.println("Enter the filing status:\n 0-single filer, 1-married jointly,\n 2-married separately, 3-head of household");

int filingstatus = keyboard.nextInt();

System.out.println("Enter the taxable income:");

double income = keyboard.nextDouble();

double tax=00.00;

if(filingstatus==0)

{

if (income <= 8350)

tax = income \* 0.10;

else if (income <= 33950)

tax = 8350 \* 0.10 + (income - 8350) \* 0.15;

else if (income <= 82250)

tax = 8350 \* 0.10 + (33950 - 8350) \* 0.15 + (income - 33950) \* 0.25;

else if (income <= 171550)

tax = 8350 \* 0.10 + (33950 - 8350) \* 0.15 + (82250 - 33950) \* 0.25 + (income - 82250) \* 0.28;

else if (income <= 372950)

tax = 8350 \* 0.10 + (33950 - 8350) \* 0.15 +(82250 - 33950) \* 0.25 + (171550 - 82250) \* 0.28 +(income - 171550) \* 0.33;

else

tax = 8350 \* 0.10 + (33950 - 8350) \* 0.15 + (82250 - 33950) \* 0.25 + (171550 - 82250) \* 0.28 + (372950 - 171550) \* 0.33 + (income - 372950) \* 0.35;

}

else if(filingstatus==1)

{

if (income <= 16700)

tax = income \* 0.10;

else if (income <= 67900)

tax = 16700 \* 0.10 + (income - 16700) \* 0.15;

else if (income <= 137050)

tax = 16700 \* 0.10 + (67900 - 16700) \* 0.15 + (income - 67900) \* 0.25;

else if (income <= 208850)

tax = 16700 \* 0.10 + (67900 - 16700) \* 0.15 + (137050 - 67900) \* 0.25 + (income -137050) \* 0.28;

else if (income <= 372950)

tax = 16700 \* 0.10 + (67900 - 16700) \* 0.15 +(137050 - 67900) \* 0.25 + (208850 - 137050) \* 0.28 +(income - 171550) \* 0.33;

else

tax = 16700 \* 0.10 + (67900 - 16700) \* 0.15 + (137050 - 67900) \* 0.25 + (208850 - 137050) \* 0.28 + (372950 - 208850) \* 0.33 + (income - 372950) \* 0.35;

}

else if (filingstatus == 2)

{

if (income <= 8350)

tax = income \* 0.10;

else if (income <= 33950)

tax = 8350 \* 0.10 + (income - 8350) \* 0.15;

else if (income <=68525)

tax = 8350 \* 0.10 + (33950 - 8350) \* 0.15 + (income - 33950) \* 0.25;

else if (income <= 104425)

tax = 8350 \* 0.10 + (33950 - 8350) \* 0.15 + (68525 - 33950) \* 0.25 + (income - 68525) \* 0.28;

else if (income <= 186475)

tax = 8350 \* 0.10 + (33950 - 8350) \* 0.15 +(68525 - 33950) \* 0.25 + (104425 - 68525) \* 0.28 +(income - 171550) \* 0.33;

else

tax = 8350 \* 0.10 + (33950 - 8350) \* 0.15 + (68525 - 33950) \* 0.25 + (104425 - 68525) \* 0.28 + (186475 - 171550) \* 0.33 + (income - 372950) \* 0.35;

}

else if (filingstatus==3)

{

if (income <= 11950)

tax = income \* 0.10;

else if (income <= 45500)

tax = 11950 \* 0.10 + (income - 11950) \* 0.15;

else if (income <= 117450)

tax = 11950 \* 0.10 + (45500 - 11950) \* 0.15 + (income - 45500) \* 0.25;

else if (income <= 171550)

tax = 11950 \* 0.10 + (45500 - 11950) \* 0.15 + (117450 - 45500) \* 0.25 + (income - 117450) \* 0.28;

else if (income <= 372950)

tax = 11950 \* 0.10 + (45500 - 11950) \* 0.15 +(117450 - 45500) \* 0.25 + (171550 - 117450) \* 0.28 +(income - 171550) \* 0.33;

else

tax = 11950 \* 0.10 + (45500 - 11950) \* 0.15 + (117450- 45500) \* 0.25 + (171550 - 117450) \* 0.28 + (372950 - 171550) \* 0.33 + (income - 372950) \* 0.35;

}

else

{

System.out.println("Error");

}

System.out.println("Tax is " + (int)(tax \* 100) / 100.0);

}

}

Name your class Ola1

Testing: (Describe how you test this program) I test the program by verifying it computes the correct personal income tax for each filing status (0-Single, 1-Married/Filing jointly, 2-Married/Filing Separate, 3-Head of Household). I do this by checking the values in the given chart, and I methodically compute the Personal Income Tax values for each status and verify it matches up with the values in. the chart.

Submit the following items:

1. Answer the questions above and submit this Word file to the dropBox

2. Submit your java code to the dropBox (you must submit the program regardless of whether it is complete or incomplete, correct or incorrect)