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Prof. Smallberg

CS 31

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Project 2 Report

In this project, the biggest difficulty that I faced was how the taxes add up for different tax brackets. I initially misunderstood the specs, and incorrectly assumed that a person only has to pay the taxes for their tax bracket. By this, I mean that a person who made $120,000 will only have to pay the 9% tax rate as opposed to paying for all three brackets. Figuring out the algorithm to make this work was difficult, but I managed to make it work by determining how much of the user’s salary is to be taxed in each bracket. Another problem that I ran into was figuring out how to make the user’s tax zero dollars if their discount based on the number of children they have causes the tax to fall below zero. I found an easy fix for this by checking to make sure the total tax isn’t negative, and if it is, to adjust it to zero. The last problem that I had was printing out the error message corresponding with the user’s earliest erroneous item. I fixed this by making a separate variable that detects the user’s earliest error, and prints out the correct output accordingly.

Test Cases :

Taxable income is less than $50,000 (Bill Yen, 23000, Gardener, 10)

Taxable income is between $50,000 and $120,000 (Ryan Innamorati, 110000, 0)

Taxable income is greater than $120,000 (Bill Gates, 12000000000, CEO, 3)

Special Cases :

Occupation is Scientist (Christian Beren, 120000, Scientist, 1)

Occupation is Engineer (Zachary Chang, 350000, Engineer, 0)

Taxable Income greater than $120,000 (Gene Block, 541000, Chancellor, 2)

Errors :

Empty string for Name (, 75000, Barber, 4)

Negative number for Taxable Income (Donald Trump, -100000000, Businessman, 5)

Empty string for Occupation (Junho Choi, 6000,,0)

Negative number for Number of Children (Hubert Chen, 350000, KPop Idol, -1)

Negative number for Taxable Income + Empty string for Occupation (Kevin Liu, -2000,, 0)