Homework 2:
Here's One For You, Nineteen For Me

Due date: February 13 by the end of the lab period.

Overview

In this homework you will calculate the Federal income taxes owed by a single adult filing their **2019** tax return, based on their **2019** taxable income. You will compare today's tax rates against a proposal to add a new tax bracket at $10,000,000 income with a marginal tax rate of 70%.

Money Matters

The United States uses a **marginal tax system** where filers are divided into "tax brackets" depending on their total taxable income. Each bracket corresponds to a particular tax rate: for example, an individual with a taxable income between $39,475 and $84,200 is in the **22%** tax rate bracket. However, a bracket's tax rate does not apply to an individual's *entire income*, but only to their income within that bracket's range; the rest of their income is taxed at lower rates according to the "lower" brackets. A hypothetical individual with $50,000 in taxable income would thus pay the following tax amounts:

- **22%** of their income between **$39,476** and **$84,200**; they have $10,525 of income in this bracket, and pay 22% of that: $2,315.50.
- **12%** of their income between **$9,701** and **$39,475**; of their $50,000 income, exactly $29,775 falls into this bracket, and they pay 12% of that: $3,573.00.
- **10%** of their income between **$0** and **$9,700**: of their $50,000 income, exactly $9,700 falls into this bracket, and they pay 10% of that: $970.00.
- In total, this individual pays **$6,858.50**, for an *effective tax rate* of $\frac{6858.5}{50000} = 13.7\%$

Note that our hypothetical person pays a much lower effective rate than the rate attached to their tax bracket; this is how marginal taxes work.

We also note that **anyone** in the 22% tax bracket **always** pays the same amount from the lower brackets regardless of their actual income – someone who makes $60,000 will still pay $3,573.00 from the 12% bracket and $970.00 from the 10% bracket, and their total tax owed will differ from a $50,000 earner only because they have more income in the 22% bracket. With that in mind, we can simplify the process for determining total taxes owed to use a simple table based on overall income. You can find such a table here, and will need this resource for your program: `https://turbotax.intuit.com/tax-tips/irs-tax-return/current-federal-tax-rate-schedules/L7Bjs1EAD`. (**Look for the table titled "Single"**.)[1]

Assignment

Write a Python program that asks the user to input their 2019 taxable income as a whole dollar amount (integer). Your job is to output two values:

1. Their total taxes owed ("tax liability"), using the rules for calculating 2019 Federal income tax.
2. Their effective tax rate, which is the quotient of their tax liability and taxable income. (See prior example.)

You will use the table in the web page mentioned before to make these calculations. Output all money values with **two decimal places** and **commas separating every three whole digits** (ask your TA how!), and all tax rates with **one decimal place**.

[1] TurboTax is a terrible immoral company – https://www.vox.com/2016/3/29/11320386/turbotax-boycott-lobbying-tax-filing-season-tax-day-april-15 – but they have the best-organized table that I could find.

In addition to those two outputs, you must also calculate and output the following two values **only if the user's taxable income exceed $10,000,000** (ten million dollars):

1. Their tax liability **if we add a new bracket** with a 70% tax rate for income exceeding $10,000,000.
2. Their effective tax rate with this new bracket added.

Example Output

User input is in *italics*.

```
What is your 2019 taxable income? 50000
Your tax liability is $6,858.50
Your effective tax rate is 13.7%
```

(Another example.)

```
What is your 2019 taxable income? 15000000
Your tax liability is $5,515,689.50
Your effective tax rate is 36.8%

With a new 70% bracket, your tax liability would be $7,165,689.50
Your effective tax rate with the new bracket would be 47.7%
```

Submitting Your Solution

As a reminder, you **must** submit your solution to Zybooks Lab 3.14 and pass all the test cases, **and then** show your accepted solution to the instructor or TA. You will **only** get credit for the assignment when the instructor/TA checks your answer and says that you are finished.