Computer Programming
Python #3 – IRS

Background:

Federal income tax rates can be calculated using tax rate schedules. The following are tax rates for two out of the four categories used by the IRS in 2001:

Schedule X - Single

Income is Over	and Income <=	Tax	of the amount over
$ 0	$ 27,050	15 %	$ 0
$ 27,050	$ 65,550	$ 4,057.50 + 27.5 %	$ 27,050
$ 65,550	$ 136,750	$ 14,645.00 + 30.5 %	$ 65,550
$ 136,750	$ 297,350	$ 36,361.00 + 35.5 %	$ 136,750
$ 297,350	---------	$ 93,374.00 + 39.1 %	$ 297,350

Schedule Y-1 - Married filing jointly

Income is Over	and Income <=	Tax	of the amount over
$ 0	$ 45,200	15 %	$ 0
$ 45,200	$ 109,250	$ 6,780.00 + 27.5 %	$ 45,200
$ 109,250	$ 166,500	$ 24,393.75 + 30.5 %	$ 109,250
$ 166,500	$ 297,350	$ 41,855.00 + 35.5 %	$ 166,500
$ 297,350	---------	$ 88,306.00 + 39.1 %	$ 297,350

Test your understanding by looking at the following examples:

1. For a single person with taxable income of $68,000, the taxable income is over $65,550 but less than or equal to $136,750. The tax is $14,645.00 + 30.5% of the amount over $65,550. This calculates to

   $14,645 + .305 * ($68,000 - $65,550) = $15,392.25

2. For a married couple with taxable income of $68,000, the taxable income is over $45,200 but less than or equal to $109,250. The tax is $6,780.00 + 27.5% of the amount over $45,200. This calculates to

   $6,780.00 + .275 * ($68,000 - $45,200) = $13,050

Assignment:

1. In your Computer Programming folder, create a folder titled *first_last_python_3*. Start IDLE. Create a new file. Save it in your *first_last_python_3* folder as *irs.py*.
2. Declare and initialize these variables:

```
marital_status = "S"   # S for single and M for married
income = 68000         # no commas or $ sign
tax = 0.0
```

3. Using nested if-statements, calculate the tax and then output a message as follows:

```
Marital Status: S; Income: $68000; Tax: $15392.25
```

4. Test your code using the following values for `marital_status` and `income`. These values were chosen to check all possible paths in the *if-elif-else* blocks. Make sure you get the expected output for **each set of values:**

marital_status	income	expected output
S	16000	Marital Status: S; Income: $16000; Tax: $2400.0
S	29500	Marital Status: S; Income: $29500; Tax: $4731.25
S	68000	Marital Status: S; Income: $68000; Tax: $15392.25
S	150000	Marital Status: S; Income: $150000; Tax: $41064.75
S	300000	Marital Status: S; Income: $300000; Tax: $94410.15
M	40000	Marital Status: M; Income: $40000; Tax: $6000.0
M	68000	Marital Status: M; Income: $68000; Tax: $13050.0
M	150000	Marital Status: M; Income: $150000; Tax: $36822.5
M	215000	Marital Status: M; Income: $215000; Tax: $59072.5
M	300000	Marital Status: M; Income: $300000; Tax: $89342.15

5. Once all of your output is correct, create a text document called *output.txt* in your *first_last_python_3* folder. Run your code for the following 10 pairs of values. After each run, copy the output from your Python shell window and paste it into the *output.txt* file.

Run #	marital_status	income
1	**S**	20000
2	**S**	31700
3	S	75000
4	S	200000
5	S	450000
6	M	30000
7	M	90750
8	M	125400
9	M	275120
10	M	500000

Do not be alarmed if you get funky looking dollar amounts.

Before you turn this assignment in, make sure that your *first_last_python_3* folder has 2 files:

1. *output.txt*
2. *irs.py*

Zip your *first_last_python_3* folder and turn it in in the usual manner.