

CS 100 Project Two – Fall 2018

Project Overview: In this project, you will use your knowledge of selection and iteration to write a program to help tax payers to figure out their 2018 estimated taxes. The program will ask the user for the filing status and estimated taxable income, and then compute and print the estimated taxes using the tax rate schedules as shown below. (The line 3 mentioned in the tax rate schedules below is the estimated taxable income.)

2018 Tax Rate Schedules



CAUTION Don't use these Tax Rate Schedules to figure your 2017 taxes. Use them only to figure your 2018 estimated taxes.

Schedule X— Use if your 2018 filing status is Single				Schedule Z— Use if your 2018 filing status is Head of household			
If line 3 is:		The tax is:		If line 3 is:		The tax is:	
<i>Over—</i>	<i>But not over—</i>		<i>of the amount over—</i>	<i>Over—</i>	<i>But not over—</i>		<i>of the amount over—</i>
\$0	\$9,525	10%	\$0	\$0	\$13,600	10%	\$0
9,525	38,700	\$952.50 + 12%	9,525	13,600	51,800	\$1,360.00 + 12%	13,600
38,700	82,500	4,453.50 + 22%	38,700	51,800	82,500	5,944.00 + 22%	51,800
82,500	157,500	14,089.50 + 24%	82,500	82,500	157,500	12,698.00 + 24%	82,500
157,500	200,000	32,089.50 + 32%	157,500	157,500	200,000	30,698.00 + 32%	157,500
200,000	500,000	45,689.50 + 35%	200,000	200,000	500,000	44,298.00 + 35%	200,000
500,000	-----	150,689.50 + 37%	500,000	500,000	-----	149,298.00 + 37%	500,000

Schedule Y-1— Use if your 2018 filing status is Married filing jointly or Qualifying widow(er)				Schedule Y-2— Use if your 2018 filing status is Married filing separately			
If line 3 is:		The tax is:		If line 3 is:		The tax is:	
<i>Over—</i>	<i>But not over—</i>		<i>of the amount over—</i>	<i>Over—</i>	<i>But not over—</i>		<i>of the amount over—</i>
\$0	\$19,050	10%	\$0	\$0	\$9,525	10%	\$0
19,050	77,400	\$1,905.00 + 12%	19,050	9,525	38,700	\$952.50 + 12%	9,525
77,400	165,000	8,907.00 + 22%	77,400	38,700	82,500	4,453.50 + 22%	38,700
165,000	315,000	28,179.00 + 24%	165,000	82,500	157,500	14,089.50 + 24%	82,500
315,000	400,000	64,179.00 + 32%	315,000	157,500	200,000	32,089.50 + 32%	157,500
400,000	600,000	91,379.00 + 35%	400,000	200,000	300,000	45,689.50 + 35%	200,000
600,000	-----	161,379.00 + 37%	600,000	300,000	-----	80,689.50 + 37%	300,000

The program will first prompt the user to enter an integer (1 through 5) that represents their filing status as shown below. If the user enters an invalid filing status, the program will print out an error message and ask for the filing status again. The program will keep asking the same question until the user enters a valid filing status.

1. Single
2. Married filing jointly
3. Married filing separately
4. Head of household
5. Qualifying widow(er)

The program will then prompt for their estimated taxable income (a real number). If the user enters a negative value, the program will print out an error message and change the income to be 0 (zero).

Based on the filing status and the taxable income, the program will compute and print the estimated tax. Please make sure that each output value be properly labeled and formatted. Otherwise you may not receive credit. For the tax amount in this project, you need to limit it two decimal places.

The program shall handle multiple tax payers. Once the program finishes with computing the tax for the first tax payer, it will ask for filing status and taxable income of the second tax payer. The process continues until the user enters 0 as the filing status. At that point, the program will say goodbye and terminate. A sample execution of the program is shown at the end of this document, with the program prompts/output in red and the user input in blue.

You need to test your program with every filing status and every tax bracket. To verify whether your program works correctly with a test case, you can post the test case and its result to Piazza and ask whether others agree with your result. **However, posting any part of C code from the project on Piazza is prohibited.**

What You Need To Do

- Create a directory named **project2** on your machine. In that directory, create a file named **tax.c**
- In **tax.c**, write the code needed to solve the problem stated above. Make sure that your program has a header block of comments that includes your name and a brief overview of the program.
- When you are ready to submit your project, compress your **project2** directory into a single (compressed) zip file, **project2.zip**. See the **Basics** document on Blackboard if you don't remember how to do it.
- Once you have a compressed zip file named **project2.zip**, submit that file to Blackboard.

Project 2 is due at 5:00pm on Friday, September 21. Late projects are not accepted.

**A project shall be completed individually, with no sharing of code or solutions.
All submissions will go through MOSS (Measure Of Software Similarity) for similarity check.
The University of Alabama's Code of Academic Conduct will be rigorously enforced.**

A sample execution of the program

Enter 1-5 for filing status or 0 to quit

- 1. Single
- 2. Married filing jointly
- 3. Married filing separately
- 4. Head of household
- 5. Qualifying widow(er)
- 0. Quit

What is your choice? 100

Invalid choice entered.

Enter 1-5 for filing status or 0 to quit

- 1. Single
- 2. Married filing jointly
- 3. Married filing separately
- 4. Head of household
- 5. Qualifying widow(er)
- 0. Quit

What is your choice? 1

Enter your estimated taxable income: -1000

No negative income. It is reset to 0 (zero)

Your estimated tax is 0.00

Enter 1-5 for filing status or 0 to quit

- 1. Single
- 2. Married filing jointly
- 3. Married filing separately
- 4. Head of household
- 5. Qualifying widow(er)
- 0. Quit

What is your choice? 1

Enter your estimated taxable income: 55000

Your estimated tax is 8039.50

Enter 1-5 for filing status or 0 to quit

- 1. Single
- 2. Married filing jointly
- 3. Married filing separately
- 4. Head of household
- 5. Qualifying widow(er)
- 0. Quit

What is your choice? 2

Enter your estimated taxable income: 55000

Your estimated tax is 6219.00

Enter 1-5 for filing status or 0 to quit

- 1. Single
- 2. Married filing jointly
- 3. Married filing separately
- 4. Head of household
- 5. Qualifying widow(er)
- 0. Quit

What is your choice? 0

Goodbye.