

EML3035: Programming Concepts for Mechanical Engineers

Homework: Federal Taxes

Format to Follow:

Follow the same format as given at

http://www.eng.usf.edu/~kaw/class/EML3035/homework/sample_homework.htm

Look under Sample HW for assignments for **HW#1**

What to Submit:

1. Hard copy of affidavit sheet given at
http://numericalmethods.eng.usf.edu/EML3035/Independent_affidavit_sheet.pdf
2. Hard copy of “*published*” output.

Problem Statement:

Florida citizens pay the federal income tax, the social security tax, and the Medicare tax.

Federal Income Tax: According to the Internal Revenue Service, a single-status US citizen will pay 2012 federal income taxes according to the following chart. Understand that some government documents are not clear – so look at the example given later.

Single Filers		
Over	But Not Over	2012
\$0	\$8,700	10%
8,700	35,350	15%
35,350	85,650	26%
85,650	178,650	28%
178,650	388,350	33%
388,350	...	35%

Social Security tax: In 2012, this is 4.2% on income up to \$110,100. Any part of the income, if earned, above \$110,100 is not taxed for social security.

Medicare tax: In 2012, this is 1.45% on all income.

Read the example *carefully* for not only to understand the tax system, but also to see how you should go about writing your program.

Example:

If the income of a person is \$82,000, what is the total tax they will pay?

Solution:

The person will pay three different taxes.

1. Federal Tax: Since the income is \$82,000, the person will be taxed at the rate of 26% on the part of income between \$35,350 and \$85,650 plus 10% of \$8,700 plus 15% of (\$35,350-\$8,700).

Federal Tax

$$= 26/100 \times (82,000 - 35,350) + 15/100 \times (35,350 - 8,700) + 10/100 \times 8,700$$

$$= \$16,996.50$$

2. Social Security Tax: Since the income is \$82,000, the person will be taxed at the rate of 4.2% on the whole income of \$82,000.

$$\text{Social Security Tax} = 4.2/100 \times 82,000$$

$$= \$3,444.00$$

3. Medicare Tax: The person will be taxed 1.45% on the income of \$82,000.

$$\text{Medicare Tax} = 1.45/100 \times \$82,000$$

$$= \$1,189.00$$

Total Tax = Federal Income Tax + Social Security Tax + Medicare Tax

$$= \$16,996.50 + \$3,444.00 + \$1,189.00$$

$$= \$21,629.50$$

Assuming income is taxable as given above, write a program that inputs

- 1) the person's income, *income*,

and then outputs the following

- 1) federal tax, *fedtax*,
- 2) social security tax, *sstax*,
- 3) medicare tax, *meditax*.
- 4) total taxes, *totaltax*.

As given in the sample HW, display all of the inputs and outputs with explanation by using the `fprintf` command. Run the program three separate times with incomes: \$32,000, \$86,213 and \$180,000. **Submit hard copy of published format for the \$86,213 case only.**