Unit Testing Lab
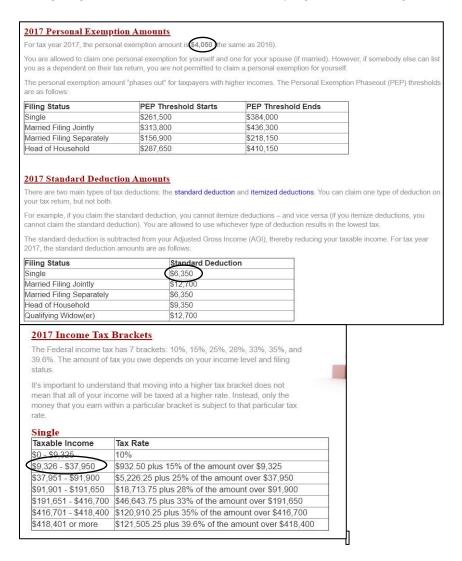
Download and unzip TaxCalculator from Canvas.

1. Alter the application so that it has dependency injection.
2. Write code in UnitTest1.cs that will test the calculations for the first and second tax brackets for 2017.

   For Tax Bracket One, a single person's income of $11,300 should return a tax amount of $90.
   For Tax Bracket Two, a single person's income of $30,350 should return a tax amount of $2526.25. Although we should test the "endpoints", it is not necessary for you to do for this lab.

3. Run your tests and verify that they pass. Note: Some students experience an issue when trying to run their tests. Instead of the test either passing or not, they get a "Not Run" message. This seems to happen when a project is zipped and then unzipped. However, some students don't have this issue. If you do have this issue, don't worry about getting the tests to run. You can show me how you get the other message instead.

2017 Personal Exemption Amounts

For tax year 2017, the personal exemption amount is $4,050 (the same as 2016).

You are allowed to claim one personal exemption for yourself and one for your spouse (if married). However, if somebody else can list you as a dependent on their tax return, you are not permitted to claim a personal exemption for yourself.

The personal exemption amount "phases out" for taxpayers with higher incomes. The Personal Exemption Phaseout (PEP) thresholds are as follows:

Filing Status	PEP Threshold Starts	PEP Threshold Ends
Single	$261,500	$384,000
Married Filing Jointly	$313,800	$436,300
Married Filing Separately	$156,900	$218,150
Head of Household	$287,650	$410,150

2017 Standard Deduction Amounts

There are two main types of tax deductions: the standard deduction and itemized deductions. You can claim one type of deduction on your tax return, but not both.

For example, if you claim the standard deduction, you cannot itemize deductions – and vice versa (if you itemize deductions, you cannot claim the standard deduction). You are allowed to use whichever type of deduction results in the lowest tax.

The standard deduction is subtracted from your Adjusted Gross Income (AGI), thereby reducing your taxable income. For tax year 2017, the standard deduction amounts are as follows:

Filing Status	Standard Deduction
Single	$6,350
Married Filing Jointly	$12,700
Married Filing Separately	$6,350
Head of Household	$9,350
Qualifying Widow(er)	$12,700

2017 Income Tax Brackets

The Federal income tax has 7 brackets: 10%, 15%, 25%, 28%, 33%, 35%, and 39.6%. The amount of tax you owe depends on your income level and filing status.

It's important to understand that moving into a higher tax bracket does not mean that all of your income will be taxed at a higher rate. Instead, only the money that you earn within a particular bracket is subject to that particular tax rate.

Single

Taxable Income	Tax Rate
$0 - $9,325	10%
$9,326 - $37,950	$932.50 plus 15% of the amount over $9,325
$37,951 - $91,900	$5,226.25 plus 25% of the amount over $37,950
$91,901 - $191,650	$18,713.75 plus 28% of the amount over $91,900
$191,651 - $416,700	$46,643.75 plus 33% of the amount over $191,650
$416,701 - $418,400	$120,910.25 plus 35% of the amount over $416,700
$418,401 or more	$121,505.25 plus 39.6% of the amount over $418,400

Here is an example of how tax is figured for a single person's $45,000 income.
45,000 – 6300 – 4050 = 34,600   Tax Due: 932.50 + (34600-9325)*.15 = $4,723.75

Create a video and first show me the code in your controller so that I can verify that you have added dependency injection. Then run the tests for me and finally, run the application so that I can verify that it still works.