Lab 7
Due: In class 11/5
Out of class 11/12

1. The original U.S. income tax of 1913 was quite simple. The tax was:

1. 1 percent of the first $50,000
2. 2 percent on the amount over $50,000 up to $ 75,000
3. 3 percent on the amount over $75,000 up to $ 100,000
4. 4 percent on the amount over $100,000 up to $ 250,000
5. 5 percent on the amount over $250,000 up to $ 500,000
6. 6 percent on the amount over $500,000

There was no separate schedule for single or married taxpayers. Write an application that computes the income tax according to this schedule. You will have a TaxCalculator class and a TaxTester class. **In Class**

Your TaxCalculator should do the following:

a. Create an instance variable to hold the salary.
b. Create a constructor that accepts as input the salary (amount) and initializes the instance variable.
c. Create a method that calculates the income tax and stores the returns the income tax.

Your tester class should do the following:

a. Create an object of type Scanner to allow for input.
b. Ask the user to input the income.
c. Create an object of type TaxCalculator that uses the salary input from b as the explicit parameter.
d. Call the method to calculate the tax
e. Print the salary and the tax owed.

2. Write an application that reads a web address (for instance, www.google.com) from the keyboard and outputs whether this web address is for a government, a university, a business, an organization or another entity. Your application should have two classes. One called WebTypeFinder and a tester class. **In Class**

Your WebTypeFinder class should do the following:

a. Create an instance variable to hold the web address.
b. Create a public variable called domainType;
c. Create a constructor that accepts as an explicit parameter, the web address.
d. Create a method that returns a string after it determines the domain type. To make this determination, find the length of the string – store this in a local variable (such as sLength). You will want to use substring to get only the last three characters, use

code like this. String domain = stringName.substring(sLength – 3). (If you are getting the last part of a string, you do not need to specify the ending pointUse the following for making that determination.)

- If the domain is edu, return education.
- If the domain is gov, return government
- If the domain is com, return business
- If the domain is org, return organization
- If the domain is none of these, return other entity.

Your tester class should to the following:

a. Create an object to type Scanner to be used as input.
b. Ask the user to input the web address.
c. Using that address, create an object of the class you created.
d. Call the method that determines the domain, and print the result.

3. Write an application that determines a "probable" season (winter, spring, summer or fall) depending on a low and high temperature. **Out of Class**

Your Season class should do the following:

a. Create two instance variables to hold the low and high temperatures.
b. Create a constructor that accepts these two temperatures from the user through explicit parameters.
c. Write a method that determines the probable season using the following guidelines.
   - If the low temperature is greater than or equal to 70 and the high temperature is less than 110, it is probably summer.
   - If the low temperature is greater than or equal to 40 and the high temperature is less than 80, it is probably spring.
   - If the low temperature is greater than or equal to 40 and the high temperature is less than 70, it is probably fall.
   - If the low temperature is greater than or equal -5 and the high temperature is less than 50, it is probably winter.
   - If the temperature is less than -5 or greater than 110, it is probably an error.

Your method should return the appropriate season or "error".

Your tester class should do the following:

a. Create an object of type Scanner to be used as input.
b. Ask the user to input the low and high temperature.
c. Create an object of type Season.
d. Call the method that determine the "probable" season.
e. Print out the temperatures and probable season.