Assignment #2 (40 points; due 3/21/2018 at 11:59 P.M.)

For all Programs:

For each program make sure and include the following comments at the top (do this on all homework assignments from now on – this is required):

//Your Name
//CS 1, Section #XYZ (where XYZ is your section)
//Assignment #Q, Problem #R
//Summary of the program

Then, within the program, you will add pseudocode as appropriate to describe the steps of the program. This is in order to get in the habit of writing pseudocode and documenting your code. PSEUDOCODE IS REQUIRED FOR ALL PROGRAMS. You will submit your C++ code to Canvas. It must be received by 11:59 P.M. on the due date.

For this homework you have three programs so you will be emailing 3 program files. These programs address the basics from Chapters 4.

Salary with Overtime

1. Write a C++ program to compute and display a person's salary as determined by the following expressions:

    If the number of hours worked is less than or equal to 40, the person receives the basic rate; otherwise, the person receives the first 40 hours at the basic rate and their remaining hours at 1.5 times the basic rate.

    The program should request the hours worked and the basic rate as input and should display the salary earned as output. Give an appropriate input prompt and label output appropriately.

    Test you program several times with hours below, =, and above 40 before you submit it for a grade.

Deposits with Interest Program

2. Write a C++ program that accepts an amount of money on deposit and a number of years it has been on deposit (years can have decimals). It will determine the interest to be paid on the deposit based on the following schedule:

Time on Deposit	Interest Rate
>= 5 years	4.5%
Less than 5 and >=4 years	4%
Less than 4 and >=3 years	3.5%
Less than 3 and >=2 years	2.5%
Less than 2 and >=1 years	2%
Less than 1 year	1.5%

Compute the interest with the formula: Interest = Deposit * IntRate * Years.

Display the original deposit, the interest earned and the new Balance (with interested added to the deposit.

Pet Insurance Program

3. Write a program that prints the insurance fee to pay for a pet according to the following rules:

(**NOTE:** You must use a switch statement to determine pet fee.)
A dog that has been neutered costs $50.
A dog that has not been neutered costs $80.
A cat that has been spayed costs $40.
A cat that has not been spayed costs $60.
A bird or reptile costs nothing.
Any other animal generates an error message.

The program should prompt the user for the appropriate information: a character code for the pet type, and a yes/no response for the neutered status. Use a code letter to determine the kind of animal (i.e. D or d represents a dog, C or c represents a cat, B or b represents a bird, R or r represents a reptile, and anything else represents some other kind of animal). Use a code letter to determine the neutered/spayed status (i.e. Y or y represents yes, N or n represents no). The user should be allowed to enter the input in either upper or lower case.

It prints out the type of animal (full name of animal) and the insurance fee. Any error in input data should generate an error message "Invalid data – no fee calculated".

2