***for* exercises**



1. In a method called *forHeaderTesting()* (which you call from *main()*), code four *for* loops as follows:
   1. Omit the loop termination condition from the *for* header. Ask the user for a number; keep a running total of the numbers entered; -1 exits (use *break* to exit the loop as you would a *switch* statement). Output the total after the loop terminates.
   2. Omit the loop initialisation section from the *for* header. Loop for a constant NUM\_INPUTS which is set to 3. Ask the user for a number; keep a running total of the numbers entered and output the total after the loop terminates.
   3. Omit the loop increment section. Logic is as in part (b) above.
   4. Leave out all three section of the header (note that the semi-colons are required otherwise you get a compiler error). Logic is similar to part (a) above.
2. In a method called *forSmallestLargest()* (which you call from *main()*), ask the user for an int *n* which will determine the number of numbers in the sequence. Using a *for* loop, figure out the largest and smallest numbers in the sequence. Cater for negative numbers i.e. if all the numbers are negative, 0 should not be the largest. Also, if the user types in a negative number or 0 for *n*, use an *if* statement when outputting at the end to show that *n* was invalid.
3. In a method called *forHistogram()* (which you call from *main()*), ask the user for the number of rows, number of columns and the character to output. Using *for* loops, output a histogram e.g. if rows is 3, columns is 4 and the character is “=”, then output:   
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1. In a method called *forAverage()* (which you call from *main()*), ask the user for *n* which will determine the number of numbers in the sequence. Using a *for* loop, ask the user for a number; keep a running total of these numbers. When the loop terminates, calculate the average (*double* type).
2. In a method called *forSequence()*, code a *for* loop, output the following sequence of numbers (with comma separators):  
    1,4,9,16,25,36,49,64,81,100
3. In a method called *forSumEvenNumbers()*, ask the user to input two even numbers, namely *from* and *to*. Using a *for* loop, calculate the sum of the even numbers between *from* and *to* but not including *from* and *to* e.g. if 2 and 10 are entered, the total = 4+6+8 = 18. Note: for this exercise, if the user enters odd values for *from* or *to*, display an error.
   1. EXTRA – instead of *forSumEvenNumbers()* validating the two inputted numbers, move that logic to *main()* and if the numbers are valid (i.e. even), pass them down to *forSumEvenNumbers()* which has the *for* loop, calculates the *total* and returns the *total* back to *main()* where it is output to the screen.
4. In a method called *twelveDaysOfChristmas()*, using a *for* loop and two inner *switch* statements, output the following:

On the first day of Christmas,

My true love sent to me:

A partridge in a pear tree.

On the second day of Christmas,

My true love sent to me:

Two turtle doves, and

A partridge in a pear tree.

On the third day of Christmas,

My true love sent to me:

Three French hens,

Two turtle doves, and

A partridge in a pear tree.

On the fourth day of Christmas,

My true love sent to me:

Four calling birds,

Three French hens,

Two turtle doves, and

A partridge in a pear tree.

On the fifth day of Christmas,

My true love sent to me:

Five golden rings,

Four calling birds,

Three French hens,

Two turtle doves, and

A partridge in a pear tree.

On the sixth day of Christmas,

My true love sent to me:

Six geese a-laying,

Five golden rings,

Four calling birds,

Three French hens,

Two turtle doves, and

A partridge in a pear tree.

On the seventh day of Christmas,

My true love sent to me:

Seven swans a-swimming,

Six geese a-laying,

Five golden rings,

Four calling birds,

Three French hens,

Two turtle doves, and

A partridge in a pear tree.

On the eighth day of Christmas,

My true love sent to me:

Eight maids a-milking,

Seven swans a-swimming,

Six geese a-laying,

Five golden rings,

Four calling birds,

Three French hens,

Two turtle doves, and

A partridge in a pear tree.

On the ninth day of Christmas,

My true love sent to me:

Nine ladies dancing,

Eight maids a-milking,

Seven swans a-swimming,

Six geese a-laying,

Five golden rings,

Four calling birds,

Three French hens,

Two turtle doves, and

A partridge in a pear tree.

On the tenth day of Christmas,

My true love sent to me:

Ten lords a-leaping,

Nine ladies dancing,

Eight maids a-milking,

Seven swans a-swimming,

Six geese a-laying,

Five golden rings,

Four calling birds,

Three French hens,

Two turtle doves, and

A partridge in a pear tree.

On the eleventh day of Christmas,

My true love sent to me:

Eleven pipers piping,

Ten lords a-leaping,

Nine ladies dancing,

Eight maids a-milking,

Seven swans a-swimming,

Six geese a-laying,

Five golden rings,

Four calling birds,

Three French hens,

Two turtle doves, and

A partridge in a pear tree.

On the twelfth day of Christmas,

My true love sent to me:

Twelve drummers drumming,

Eleven pipers piping,

Ten lords a-leaping,

Nine ladies dancing,

Eight maids a-milking,

Seven swans a-swimming,

Six geese a-laying,

Five golden rings,

Four calling birds,

Three French hens,

Two turtle doves, and

A partridge in a pear tree.