

# Assignment 5

Please submit the following java programs in a zipped folder on Canvas:

- Vowel Count – VowelCount.java (30 pts)
- Twelve Days – TwelveDays.java (30 pts)

Remember to include the pledge as a comment in every single file that you submit, followed by your name and U number.

“I pledge my Honor that I have not cheated, and will not cheat, on this assignment”

[insert name here], [insert U-number here]

Not including the pledge will result in a **50%** deduction of points for every file that does not have it. And no, putting one pledge as a comment on Canvas does not count.

## Vowel Count

Write a program that reads a string from the user then determines and prints the number of vowels (uppercase and lowercase) in the string as well as the number of remaining characters. Your code should also give the user a chance to enter another string by entering yes, or end the program by entering no. Use dialog boxes to read the input and display the output. (Note: Dialog boxes are required for this question).

You will need:

1. The JOptionPane class and a string variable.
2. Two string methods – charAt to read each character, and length to return the length of the string.
3. A **for** loop to cycle through the string.
  - The loop should start at the first position (or index) in the string and end when the string is done (i.e. when you have reached the full length of the string).
    1. Hint: what value is designated for the first position of a string?
    2. Use the length method that returns the length as part of your condition.
  - In this loop you will need one switch statement. This switch statement will use both the ‘fall through method’ (for upper and lower case versions of the same vowel, as well as break statements (to separate one vowel from another.)
    1. Use the charAt method as the expression in your switch statement.
  - A **do while** loop to repeat the process.
    1. Use the equalsIgnoreCase method (from the String class) to compare responses like “yes” and “Yes”.
    2. For this assignment, your loop should only repeat if the user enters a version of the string “yes”.

Tips:

- You can use the same String object that you create for using JOptionPane methods, since those methods already accept strings.
- You do not need to use parse methods for this assignment.

### **Twelve Days**

Write a program that prints the verses of the song “The Twelve days of Christmas” in which each verse adds one line. The user should be asked to enter one of the twelve days and the code should output the song, starting from the first verse.

Here is the final verse for reference:

On the 12th day of Christmas, my true love gave 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.

You will need:

1. A **while loop** for input validation. The user should ONLY be able to enter a day between 1 and 12.
2. A **second while** loop to output the verses.
  - In this loop you will use **two switch statements**.
    1. The first switch statement should add the appropriate suffix to the day. (Day 1 should be 1st, day 2 should be 2nd, day 3 should be 3rd, and all other days should end with "th". )
    2. The second switch statement should output the gift for the particular day. You should utilize the 'fall through method' for this switch statement (in order words, don't use the break statement in this one.)

Please stick to the format shown in the final verse and in the sample output. All gifts should appear on a new line.

A sample of the output is shown below:

How many days (1 to 12)? -3

How many days (1 to 12)? 3

On the 1st day of Christmas my true love gave to me  
A partridge in a pear tree.

On the 2nd day of Christmas my true love gave to me  
Two turtle doves, and  
A partridge in a pear tree.

On the 3rd day of Christmas my true love gave to me  
Three French hens,  
Two turtle doves, and  
A partridge in a pear tree.