

PA - 303.2.3 - Practice Assignment

Operators and numbers

Objective:

In this assignment, you will create a Java program. Requirements or tasks are given below. This assignment will test your knowledge of Java OPERATORS and NUMBERS.

Tasks:

1. Write a program that declares an integer a variable x, assigns the value 2 to it, and prints out the binary string version of the number (*Integer.toBinaryString(x)*). Now, use the left shift operator (<<) to shift by 1 and assign the result to x. Before printing the results, write a comment with the predicted decimal value and binary string. Now, print out x in decimal form and in binary notation.

Perform the preceding exercise with the following values:

- a. 9
- b. 17
- c. 88

2. Write a program that declares a variable x, and assigns 150 to it, and prints out the binary string version of the number. Now use the right shift operator (>>) to shift by 2 and assign the result to x. Write a comment indicating what you anticipate the decimal and binary values to be. Now print the value of x and the binary string.

Perform the preceding exercise with the following values:

- a. 225

- b. 1555
 - c. 32456
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3. Write a program that declares three int variables: x, y, and z. Assign 7 to x and 17 to y. Write a comment that indicates what you predict will be the result of the bitwise and operation on x and y. Now use the bitwise **AND (&)** operator to derive the decimal and binary values, and assign the result to z.
 4. Now, with the preceding values, use the bitwise and operator to calculate the “or” value between x and y. As before, write a comment that indicates what you predict the values to be before printing them out.
 5. Write a program that declares an integer variable, assigns a number, and uses a postfix increment operator to increase the value. Print the value before and after the increment operator.
 6. Write a program that demonstrates at least three ways to increment a variable by 1 and does this multiple times. Assign a value to an integer variable, print it, increment by 1, print it again, increment by 1, and then print it again.
 7. Write a program that declares two integer variables: x, and y, and then assigns 5 to x and 8 to y. Create another variable sum and assign the value of ++x added to y, and print the result. Notice the value of the sum (should be 14). Now change the increment operator to postfix (x++) and re-run the program. Notice what the value of



the sum is. The first configuration incremented x , and then calculated the sum, while the second configuration calculated the sum, and then incremented x .

Submission Instructions:

Include the following deliverables in your submission -

- Submit your source code using the Start Assignment button in the top-right corner of the assignment page in Canvas.

CANVAS STAFF USE ONLY: Canvas Submission Guideline:**Instructions for Canvas Assignment Creation**

Assignment Name: PA 303.2.3 - Practice Assignment - Core Java - Operators and Numbers
Points: 100

Assignment Group: Non-graded (This assignment does not count toward the final grade.).
Complete/Incomplete

Display Grade As: Complete/Incomplete

Do not count this assignment towards the final grade: Checked

Submission Types: File Uploads

Everything else is the default.