Lab Sheet 2 – Operators in Java

Try-outs

Try out the following sets of code-snippet. And observe the output/errors are generated.

1. ```
   int d=4;
   float f = 9.5;
   System.out.println(d * f);
   ```

2. ```
   System.out.println(0.5 % 1);
   System.out.println(3.5 % 3.4);
   System.out.println(5.2 % 2);
   System.out.println(9 % 2);
   ```

3. ```
   int v=0;
   System.out.println(v++);
   System.out.println(++v);
   ```

4. ```
   int x1,x2;
   System.out.println(x1+x2);
   ```

5. Given the following variable names and their types.

   double w, y ;
   int a, b, c ;
   Write expression for the following and print the result
   - a + b * c
   - a - b – c
   - -a > b
   - b < a or y>w
   - a<b and c not equal to a
   - 25>=a-b/c
   - a - b / c
   - a*b/c
   - w / y
   - y / w
   - a + w / b
   - a % b / y
   - b % a
   - $\dfrac{(a^2 + 3b) * 7}{2(ab)^2}$

Write a programs that would:

1. Calculate the age of your friend, given the current year and birth year.

Sample output [**add number of hours and seconds lived too**]
```
Enter current year
2020
Enter your birth year
2001
You have revolved around the sun for 19 years.
You have revolved around the sun for 228 months.
You have revolved around the sun for 6935 days.
```
[**OPTIONAL: Read the month and date and compute the exact months, days, hours and seconds**]

2. Compute the value of a function $f(x, y)$. Where f is of the form
   Note that a and b are coefficients and are read from the user

   a. $ax^2 y + by^2x + ab - xy$
   b. $ab + \pi x^2 - \pi y$ //**use PI as a constant value**

3. Calculate the sum of the digits of a three digit number. [only 3 digit don't use loops]
   Eg: Input: 123
   Output: 6

4. Generate bill in a grocery shop. The shop has only 5 items namely:
   a. Carrots [50rs/kg]
   b. Oranges[10rs per item]
   c. Apples[25rs per item]
   d. Cabbage[20rs/kg]
   e. Banana[30rs/kg]
   The bill has individual amount for each entity purchased and the total amount.

5. Read two numbers from user and print **"greater"** if the first number is greater than second number. Otherwise, print **"not greater"**.(Do not use conditionals)

6. Print the final score of a student based on the following rules. There are 4 components for the evaluation (PE1, PE2, CE and End semester exam) and each is evaluated out of 100 marks. The weightage for the components is given as
   a. PE1 – 10%
   b. PE2 -15%
   c. CE – 35%
   d. End Semester – 40%

Advanced Questions

1. Mr. Bean plays a game. The game is to read a 4-digit integer as input. If all digits of the number are even, then Bean wins the game; otherwise he fails. Write a program to read the 4-digit integer and print True if Bean wins the game, and False otherwise.
2. Write a program to reverse a 3-digit number. E.g.-Number : 132   Output : 231