

Theory Class

Java Basics

Muhammad Jamil

Software Developer

Agenda

Today's Discussion

- Operators
- Using = and +
- Addition vs Concatenation

Operator

An operator in a programming language is a symbol that tells the compiler or interpreter to perform specific mathematical, relational or logical operation and produce final result.



Arithmetic Operators

List of all the arithmetic operators

+

-

*

/

%

Arithmetic Operators (cont.)

- These are shown in order, that is * is always performed first followed by / % + - respectively
- Expressions are evaluated left to right if there are a sequence of operators of equal precedence, however the precedence rules are dominant.

For example

$10 + 8 * 5 / 2 - 8$ is 22 not 37

Arithmetic Operators (cont.)

Use of brackets

What is the result of

$$x = 2 + (14 - 7) * 3$$

Is it 27 or 23?



Equality Operator

Is the L.H.S = R.H.S?

==

Note:

We can not use == for Strings, it is only for primitive data types

For Strings we need the equals() method as in

```
"Pakistan".equals("Country");
```

Not Equal

Is the left hand side NOT equal to right hand side?

\neq



Relational Operators

Is the left hand side GRATER THAN to right hand side?

$$x > y$$

Is the left hand side LESS THAN to right hand side?

$$x < y$$

Is the left hand side GRATER THAN OR EQUAL to right hand side?

$$x >= y$$

Logical Operators

& & (AND)

|| (OR)

! (NOT)

They can be used to print the truth value of an expression – is it *true* or *false*?

Later we'll use them for the program flow

Addition vs Concatenation

```
System.out.println("2" + "2");
```

```
System.out.println(2 + 2);
```

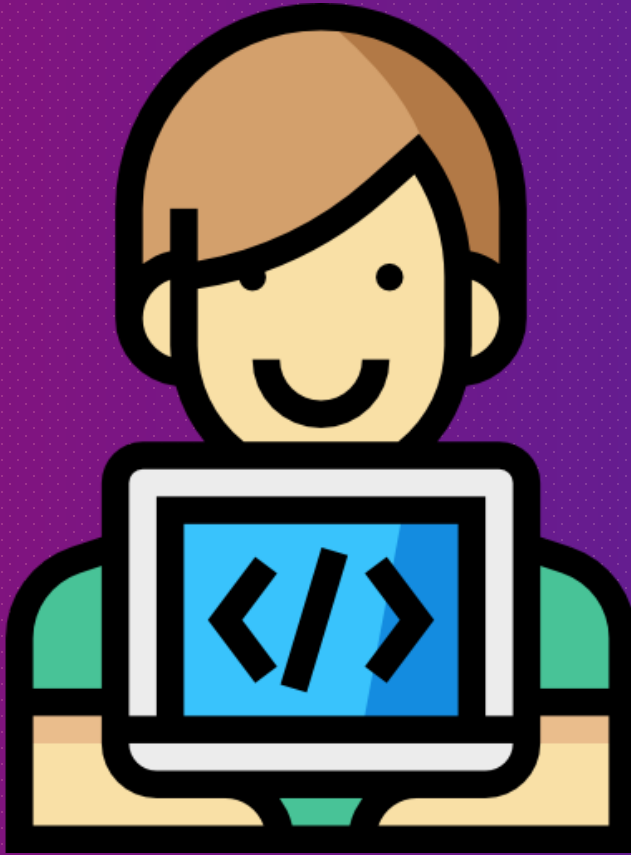
```
System.out.println("2" + (2+2));
```

Solve this on IDE

```
class Addition {  
    public static void main(String[] args) {  
        int num1 = 10, num2 = 20, sum = 0;  
        System.out.println("num1 = " + num1);  
        System.out.println("num2 = " + num2);  
        sum = num1 + num2;  
        System.out.println("The sum = " + sum);  
    }  
}
```



Practice More and More





THANK YOU!

Theory Questions?