Chapter 2 - Operators and Expressions Operators are used to perform operations on variables and values. operand operator operand Result Types of operators → +,-,\*,/, %, ++,---> Arithmetic Operators -> = y+= mal A styl -> Assignment operators → == , >= , ∠= Mum Comparison operators → 88, II, I Logical operators → 8 1 (operates bitwise) → Bitwise Operators Arithmetic operators cannot work with booleans % operator can work on floats & doubles Precedence of operators

The operators are applied and evaluated based on precedence. For example (t, -) has less precedence compared to (\*,1). Hence \* & 1 are evaluated In case we like to change this order, we use parenthesis Associativity Associativity tells the direction of execution of operators

It can either be Left to Right or Right to left

\* 1 -> L to R +- - + to R ++,= . + R. to

Quick Quiz: How will you write the following expressions in Java?  $\frac{\chi - \psi}{2}$ ,  $\frac{b^2 + 4ac}{2}$ ,  $\sqrt{-u^2}$ ,  $\frac{u^2 + b - d}{2}$ 2a Crio mark Resulting data type after arithmetic operation following table summarizes the resulting data types after arithmetic operation on them  $R = b + 5 \rightarrow int$ b + byk f - float 5 → short d → double R = Sti i → inkger c → character R = l+f → float l → long R = i+f - float R = C+i > int R = C+5 + int  $R = l + d \rightarrow double$ R = f + dIncrement and Decrement Operators

a++, ++a → Increment operators → Data type

a--, --a → Decrement operators → remains same These will operate on all data types except bodeans Quick Quiz: Ty increment and decrement operators on a Java Variable a + + → first use the value and then increment + + a → first increment the value then use it

Quick Quiz: What will be the value of the following expression (z).

Int y = 7:

int x = ++y + 8:

Value of x? Char a = 'B'; a + t;  $\rightarrow a$  is now 'C'