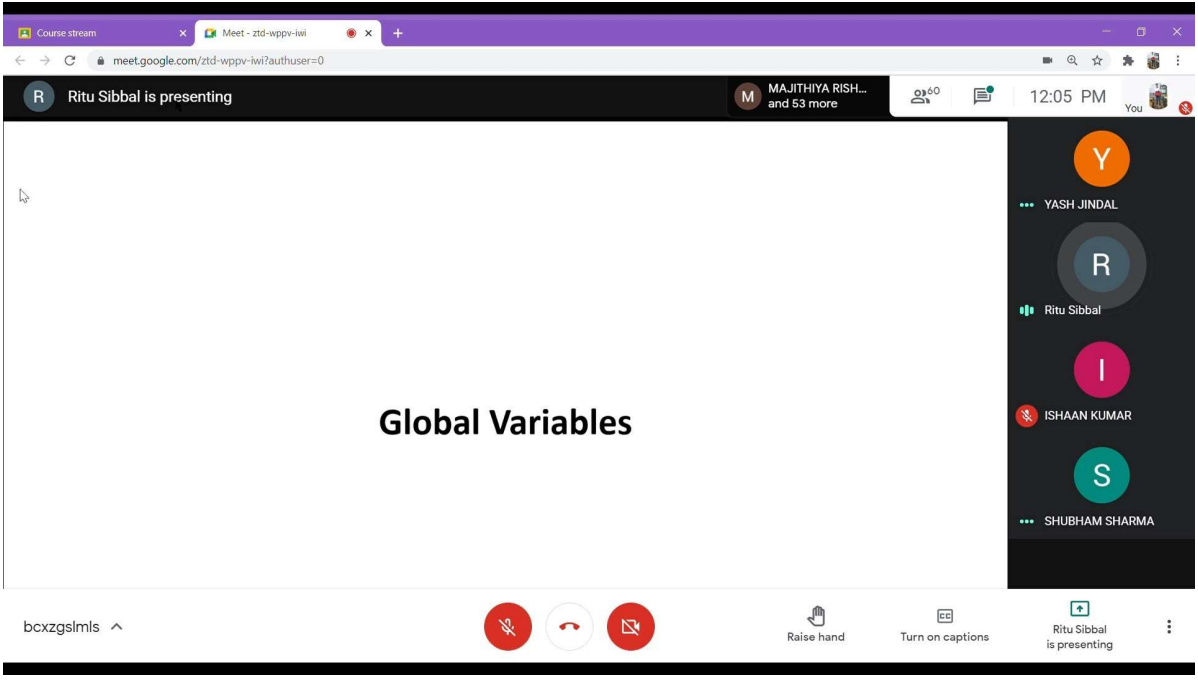
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You
Global Variables
YASH JINDAL
Ritu Sibbal
ISHAAN KUMAR
SHUBHAM SHARMA
bcxzgslmls
Raise hand
Turn on captions
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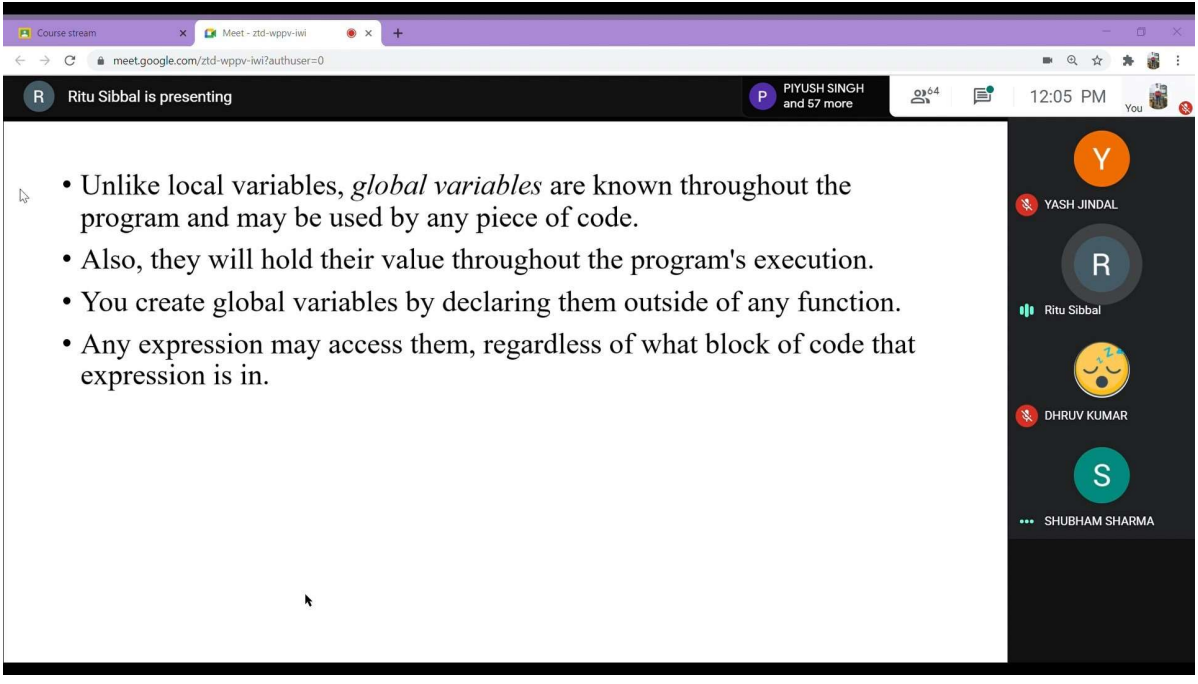
is presenting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64
12:05 PM
You
• Unlike local variables, *global variables* are known throughout the program and may be used by any piece of code.
• Also, they will hold their value throughout the program's execution.
• You create global variables by declaring them outside of any function.
• Any expression may access them, regardless of what block of code that expression is in.
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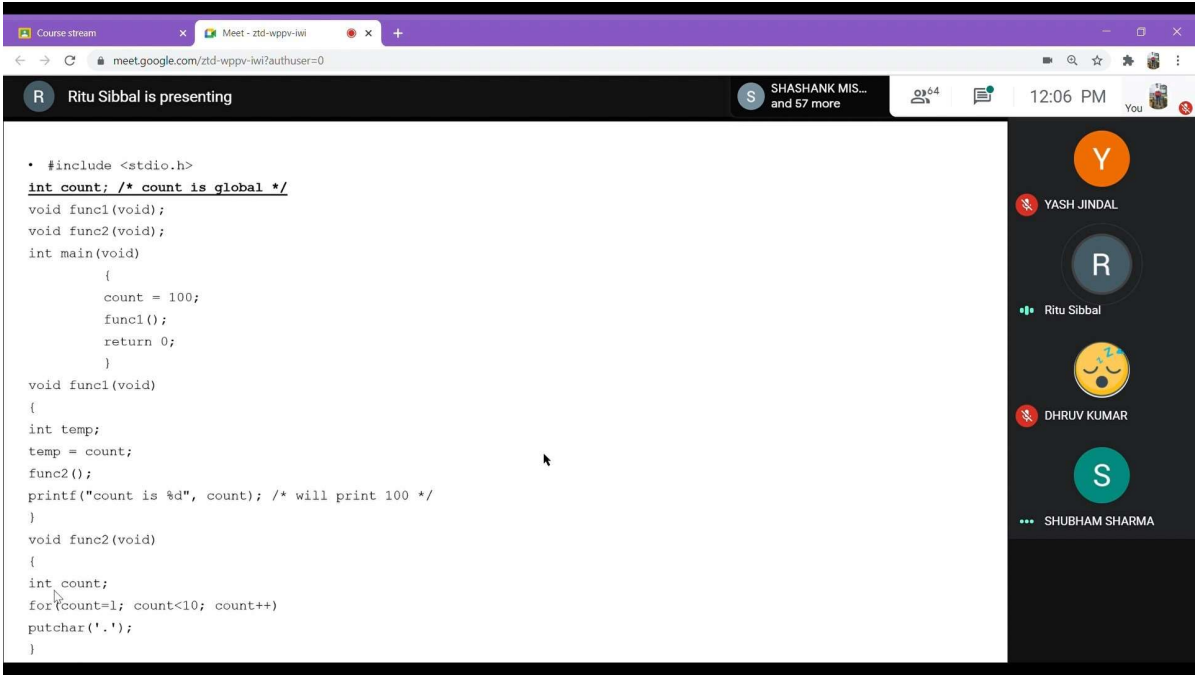
SHUBHAM SHARMA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and 57 more
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You
• #include <stdio.h>
int count; /* count is global */
void func1(void);
void func2(void);
int main(void)
{
count = 100;
func1();
return 0;
}
void func1(void)
{
int temp;
temp = count;
func2();
printf("count is %d", count); /* will print 100 */
}
void func2(void)
{
int count;
for(count=1; count<10; count++)
putchar('.');
}
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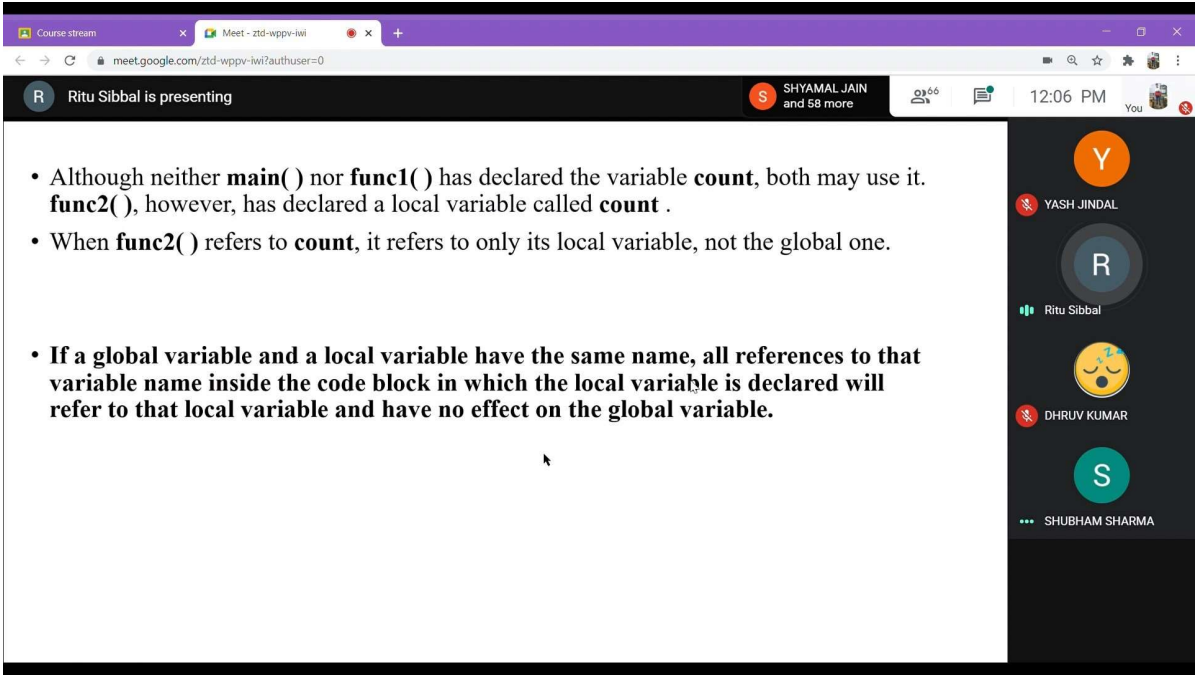
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You
• Although neither main( ) nor func1( ) has declared the variable count, both may use it. func2( ), however, has declared a local variable called count .
• When func2( ) refers to count, it refers to only its local variable, not the global one.
• If a global variable and a local variable have the same name, all references to that variable name inside the code block in which the local variable is declared will refer to that local variable and have no effect on the global variable.
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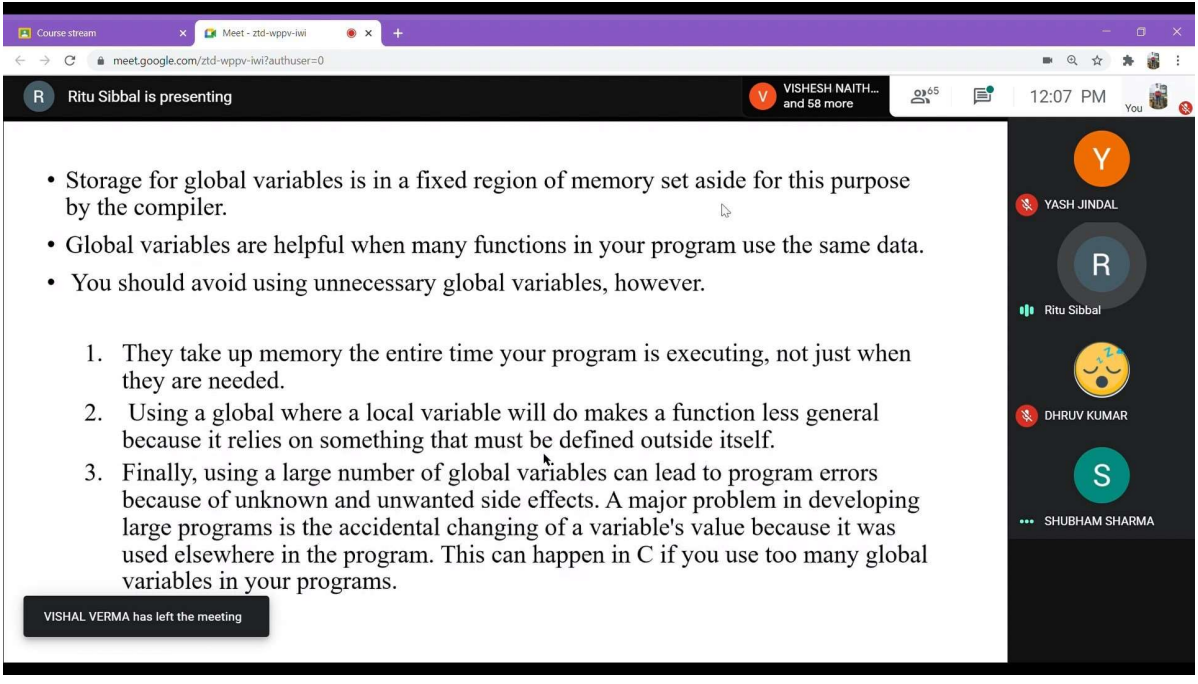
DHRUV KUMAR
SHUBHAM SHARMA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You
• Storage for global variables is in a fixed region of memory set aside for this purpose by the compiler.
• Global variables are helpful when many functions in your program use the same data.
• You should avoid using unnecessary global variables, however.
1. They take up memory the entire time your program is executing, not just when they are needed.
2. Using a global where a local variable will do makes a function less general because it relies on something that must be defined outside itself.
3. Finally, using a large number of global variables can lead to program errors because of unknown and unwanted side effects. A major problem in developing large programs is the accidental changing of a variable's value because it was used elsewhere in the program. This can happen in C if you use too many global variables in your programs.
VISHAL VERMA has left the meeting
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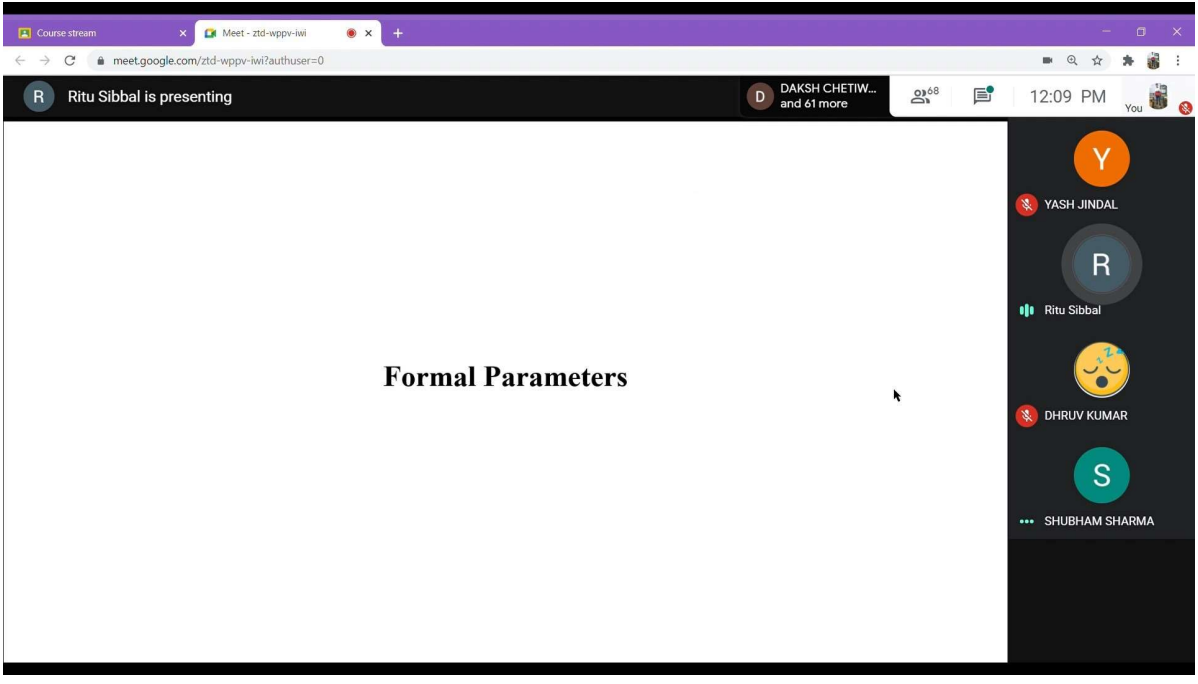
SHUBHAM SHARMA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You
Formal Parameters
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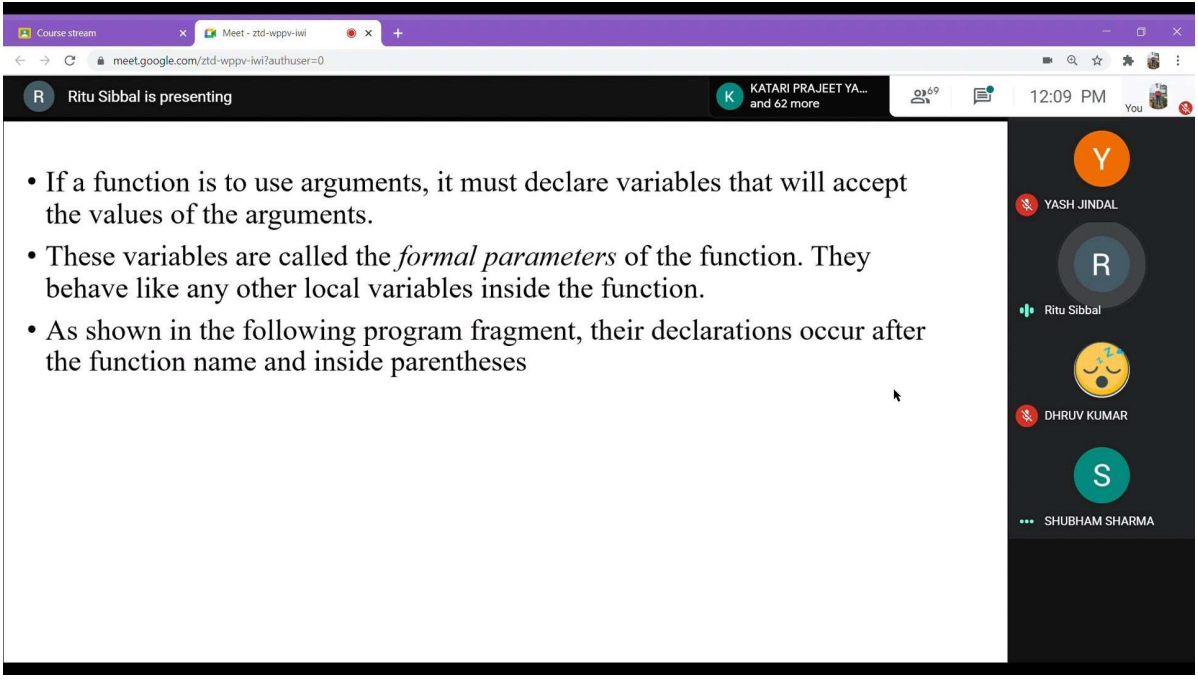
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69
12:09 PM
You
• If a function is to use arguments, it must declare variables that will accept the values of the arguments.
• These variables are called the formal parameters of the function. They behave like any other local variables inside the function.
• As shown in the following program fragment, their declarations occur after the function name and inside parentheses
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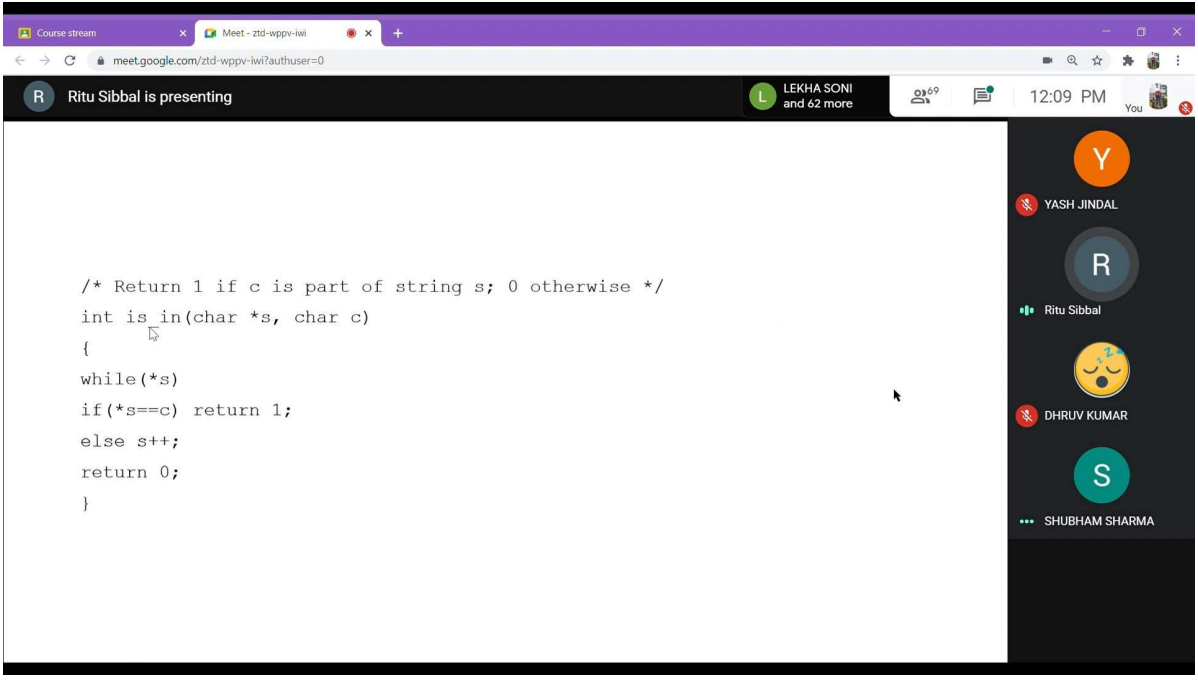
SHUBHAM SHARMA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You
/* Return 1 if c is part of string s; 0 otherwise */
int is_in(char *s, char c)
{
while(*s)
if(*s==c) return 1;
else s++;
return 0;
}
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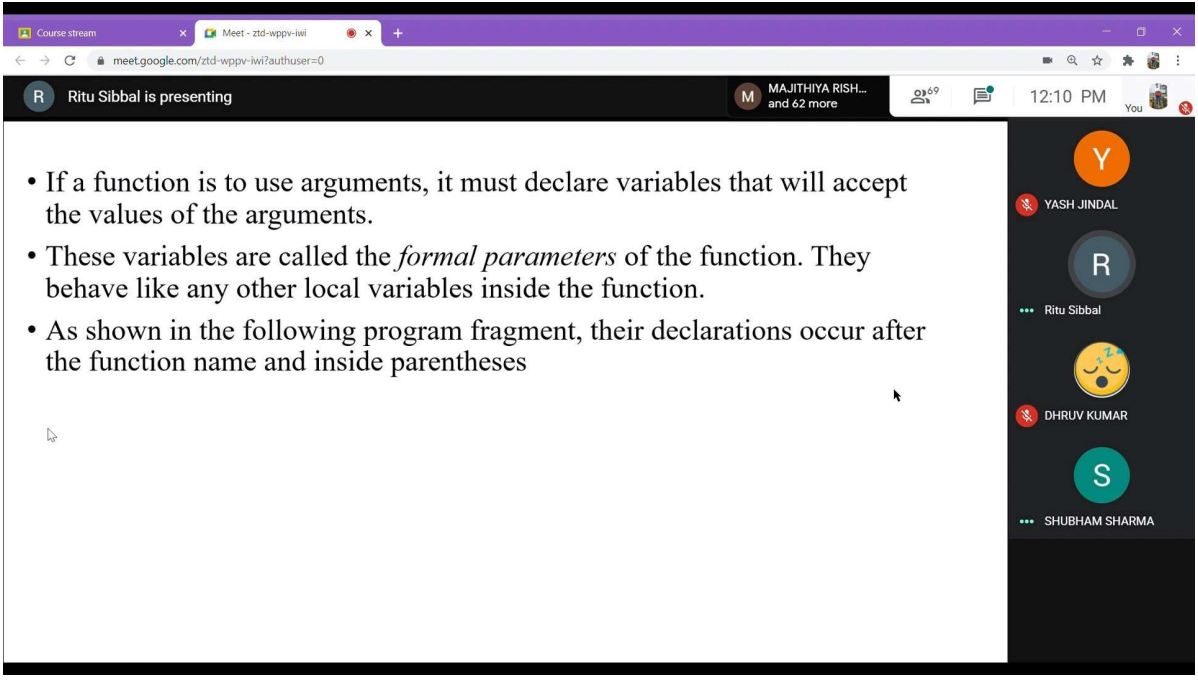
Ritu Sibbal
DHRUV KUMAR
SHUBHAM SHARMA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You
• If a function is to use arguments, it must declare variables that will accept the values of the arguments.
• These variables are called the *formal parameters* of the function. They behave like any other local variables inside the function.
• As shown in the following program fragment, their declarations occur after the function name and inside parentheses
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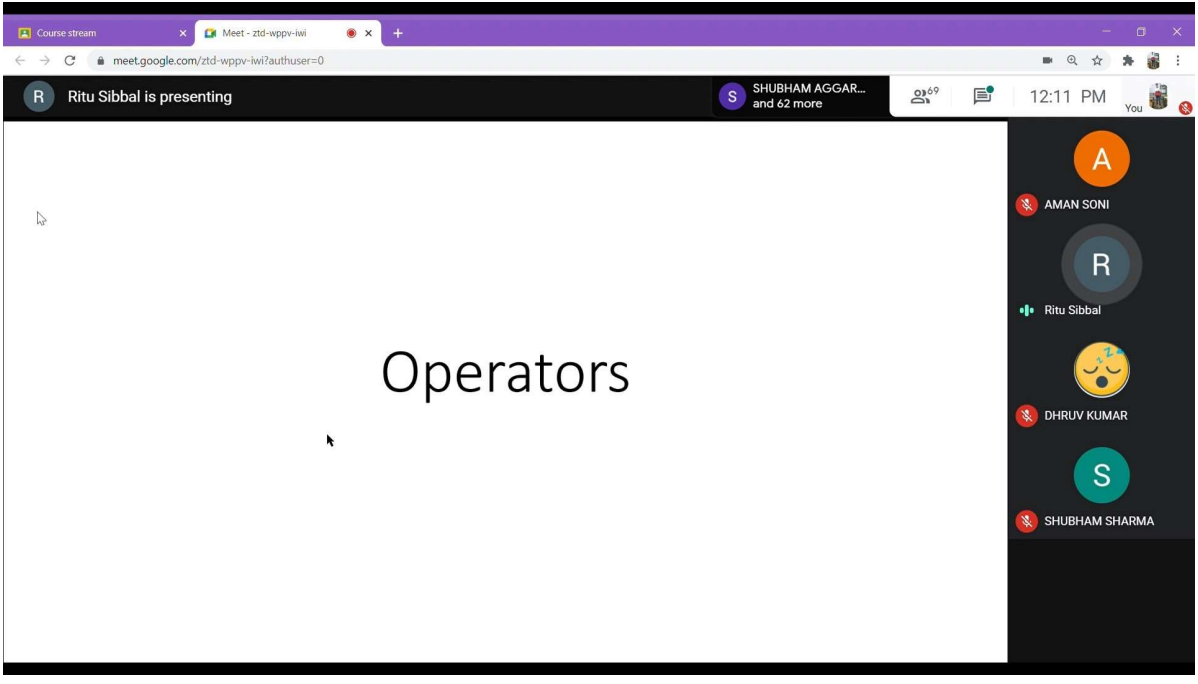
SHUBHAM SHARMA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and 62 more
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You
Operators
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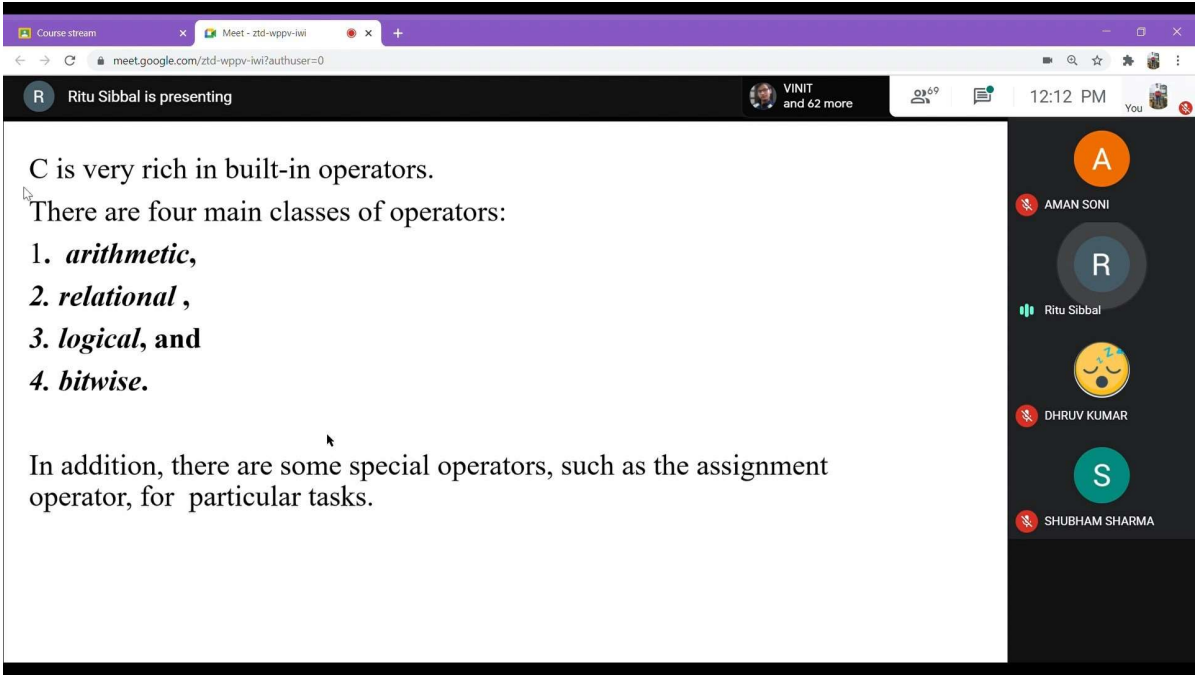
SHUBHAM SHARMA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R
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You
C is very rich in built-in operators.
There are four main classes of operators:
1. arithmetic,
2. relational ,
3. logical, and
4. bitwise.
In addition, there are some special operators, such as the assignment operator, for particular tasks.
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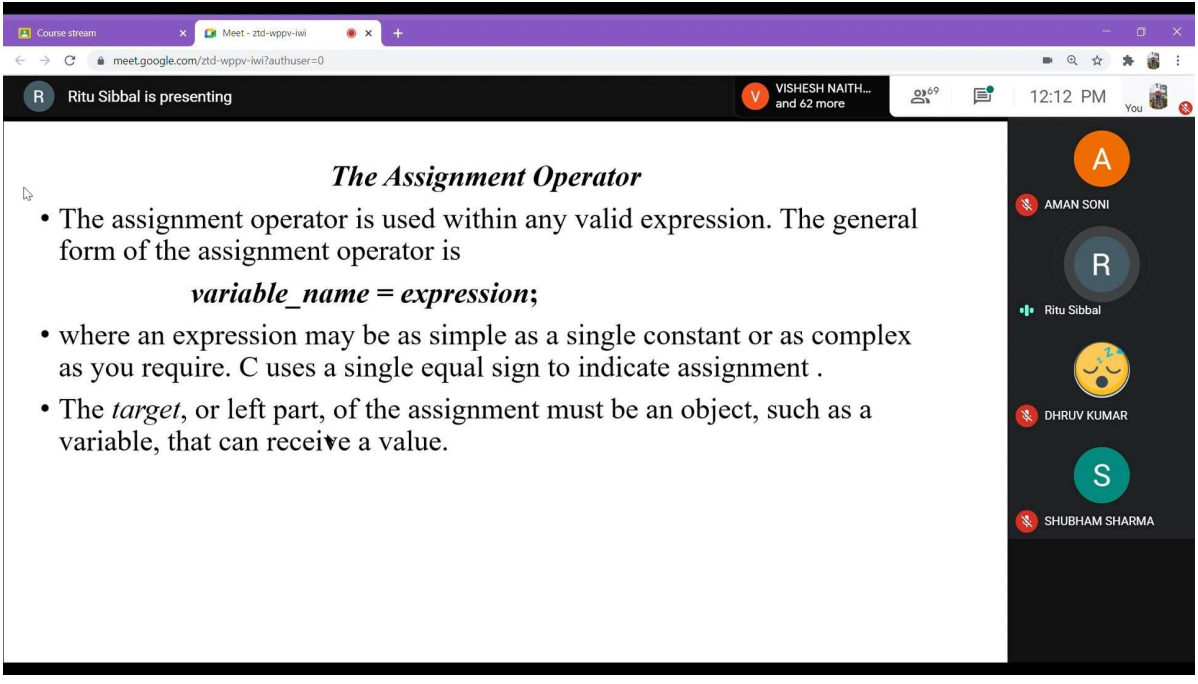
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You
The Assignment Operator
• The assignment operator is used within any valid expression. The general form of the assignment operator is
variable_name = expression;
• where an expression may be as simple as a single constant or as complex as you require. C uses a single equal sign to indicate assignment .
• The target, or left part, of the assignment must be an object, such as a variable, that can receive a value.
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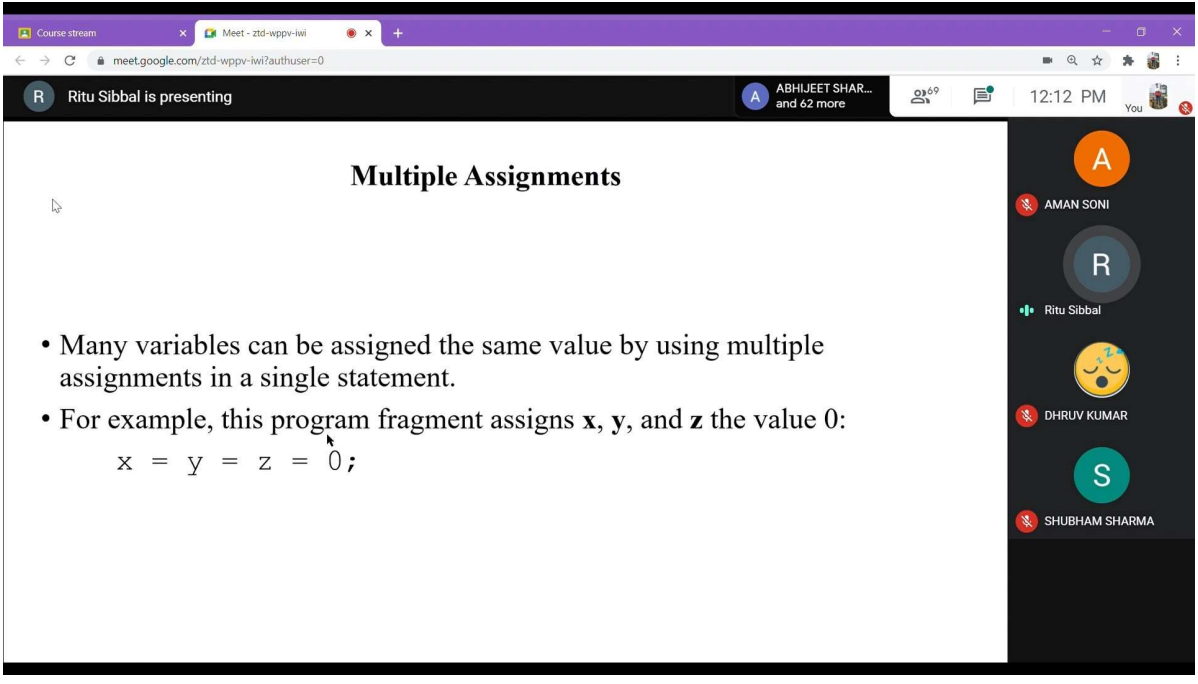
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You
Multiple Assignments
• Many variables can be assigned the same value by using multiple assignments in a single statement.
• For example, this program fragment assigns x, y, and z the value 0:
x = y = z = 0;
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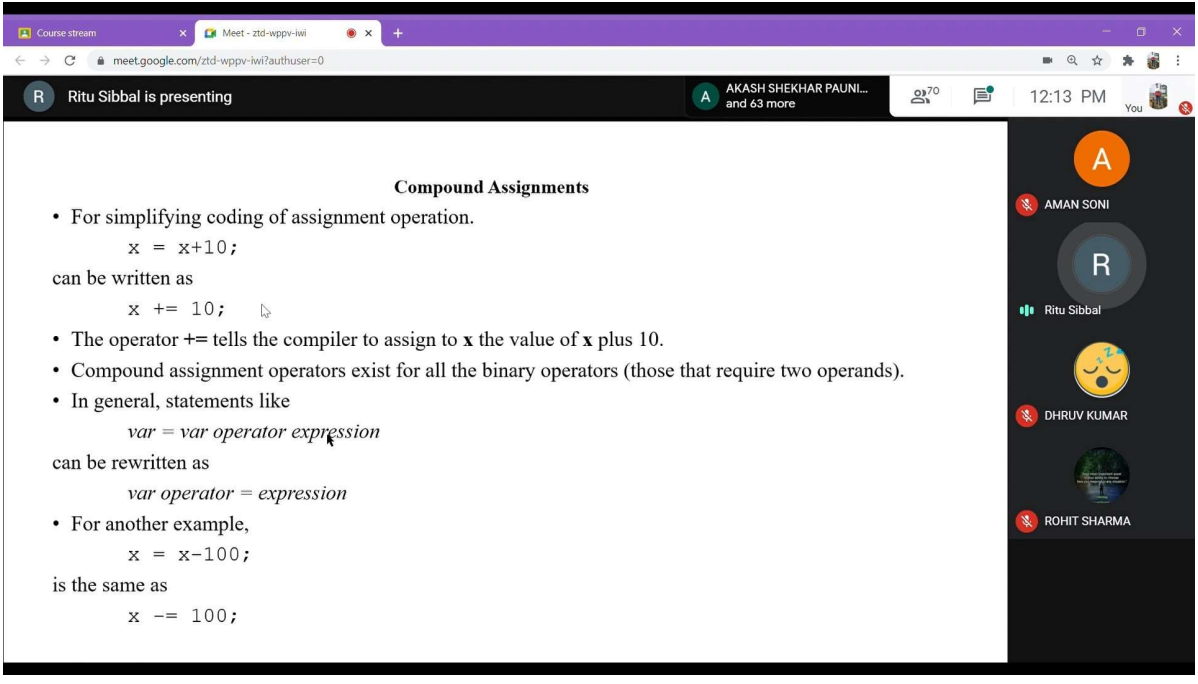
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You
Compound Assignments
• For simplifying coding of assignment operation.
x = x+10;
can be written as
x += 10;
• The operator += tells the compiler to assign to x the value of x plus 10.
• Compound assignment operators exist for all the binary operators (those that require two operands).
• In general, statements like
var = var operator expression
can be rewritten as
var operator = expression
• For another example,
x = x-100;
is the same as
x -= 100;
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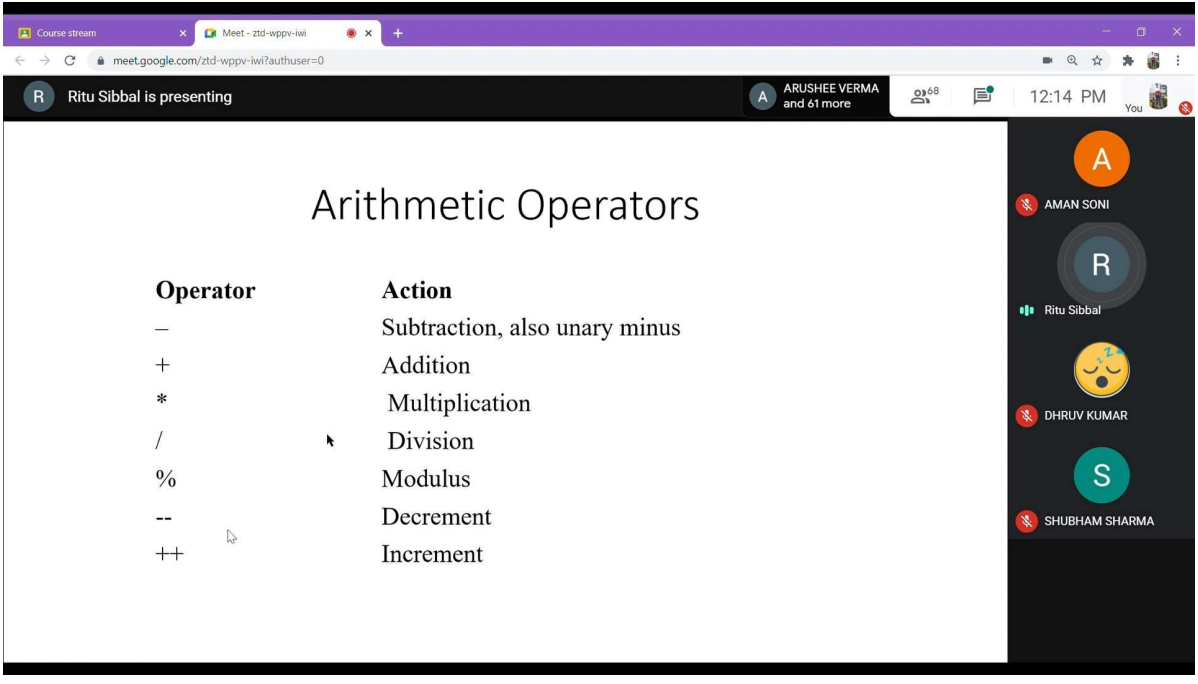
ROHIT SHARMA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You
Arithmetic Operators
Operator
Action
– Subtraction, also unary minus
+ Addition
* Multiplication
/ Division
% Modulus
-- Decrement
++ Increment
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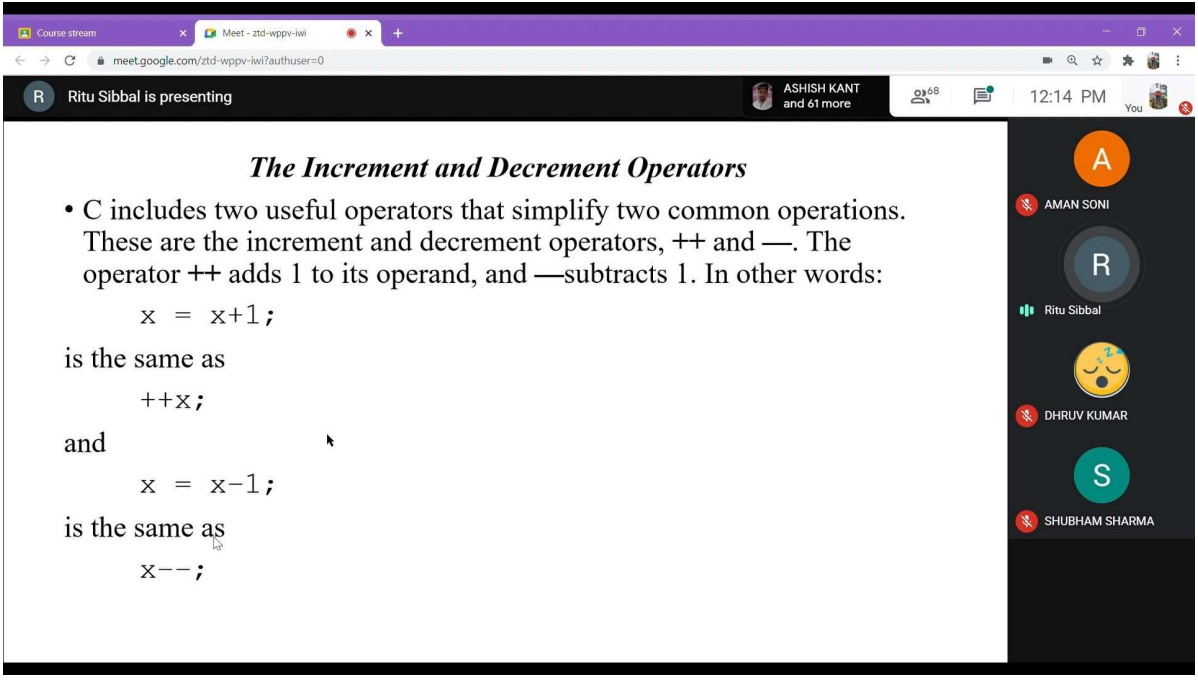
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You
The Increment and Decrement Operators
• C includes two useful operators that simplify two common operations. These are the increment and decrement operators, ++ and —. The operator ++ adds 1 to its operand, and —subtracts 1. In other words:
x = x+1;
is the same as
++x;
and
x = x-1;
is the same as
x--;
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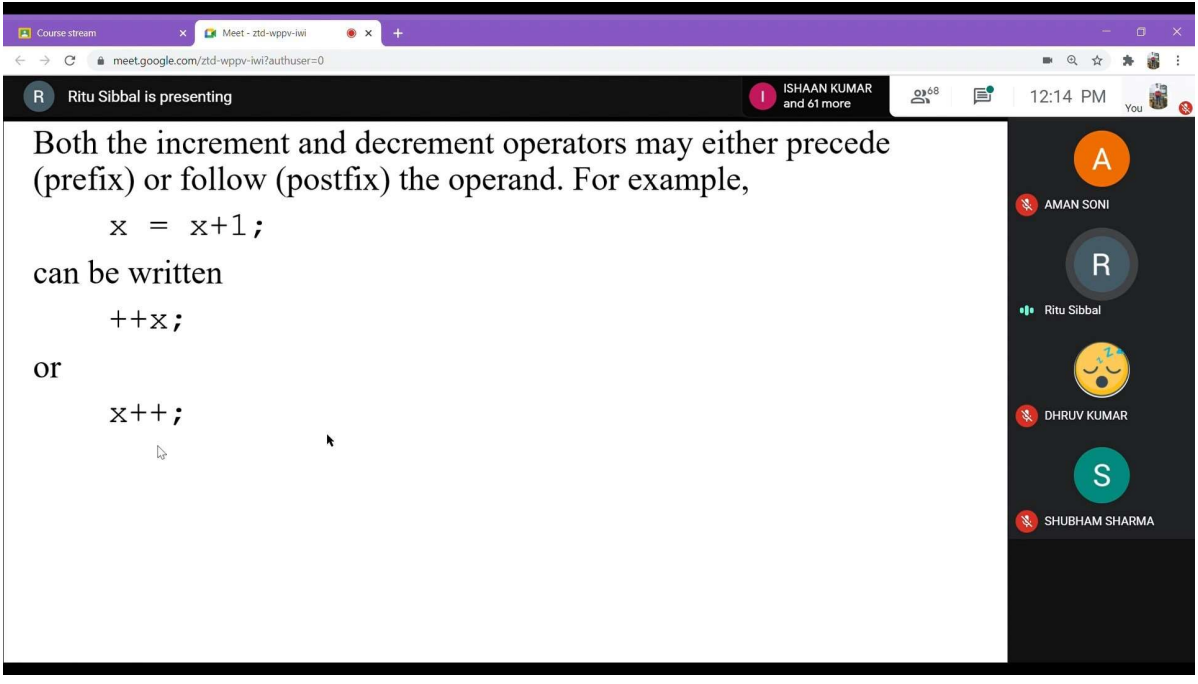
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You
Both the increment and decrement operators may either precede (prefix) or follow (postfix) the operand. For example,
x = x+1;
can be written
++x;
or
x++;
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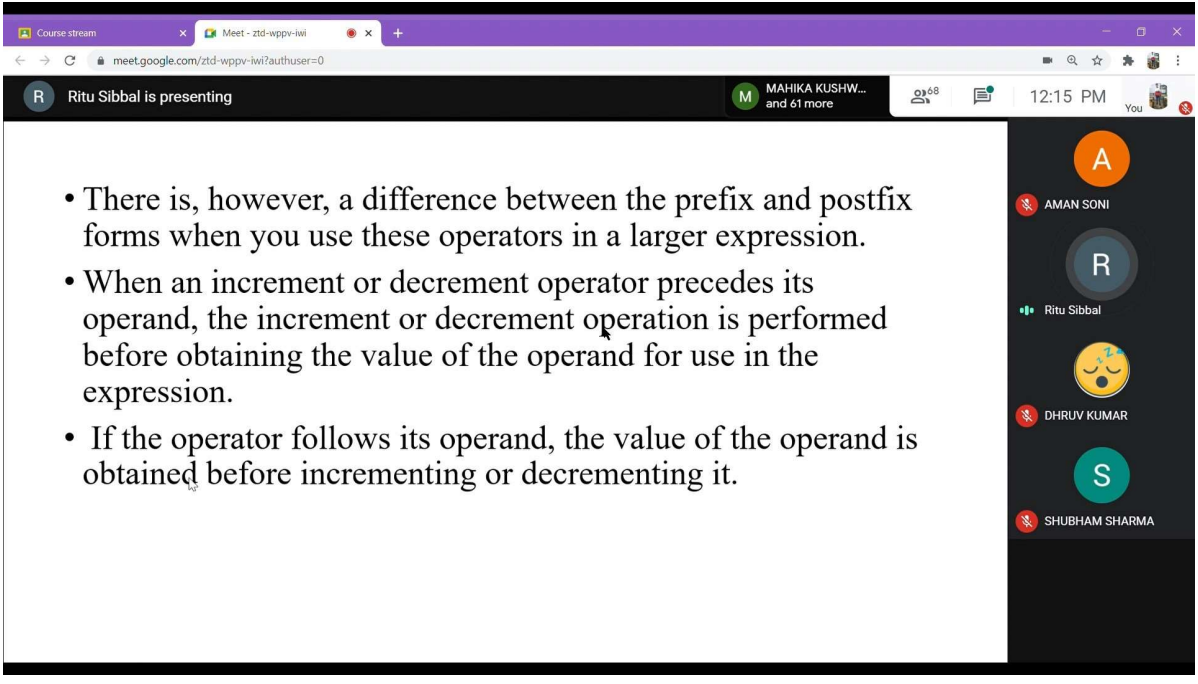
SHUBHAM SHARMA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You
• There is, however, a difference between the prefix and postfix forms when you use these operators in a larger expression.
• When an increment or decrement operator precedes its operand, the increment or decrement operation is performed before obtaining the value of the operand for use in the expression.
• If the operator follows its operand, the value of the operand is obtained before incrementing or decrementing it.
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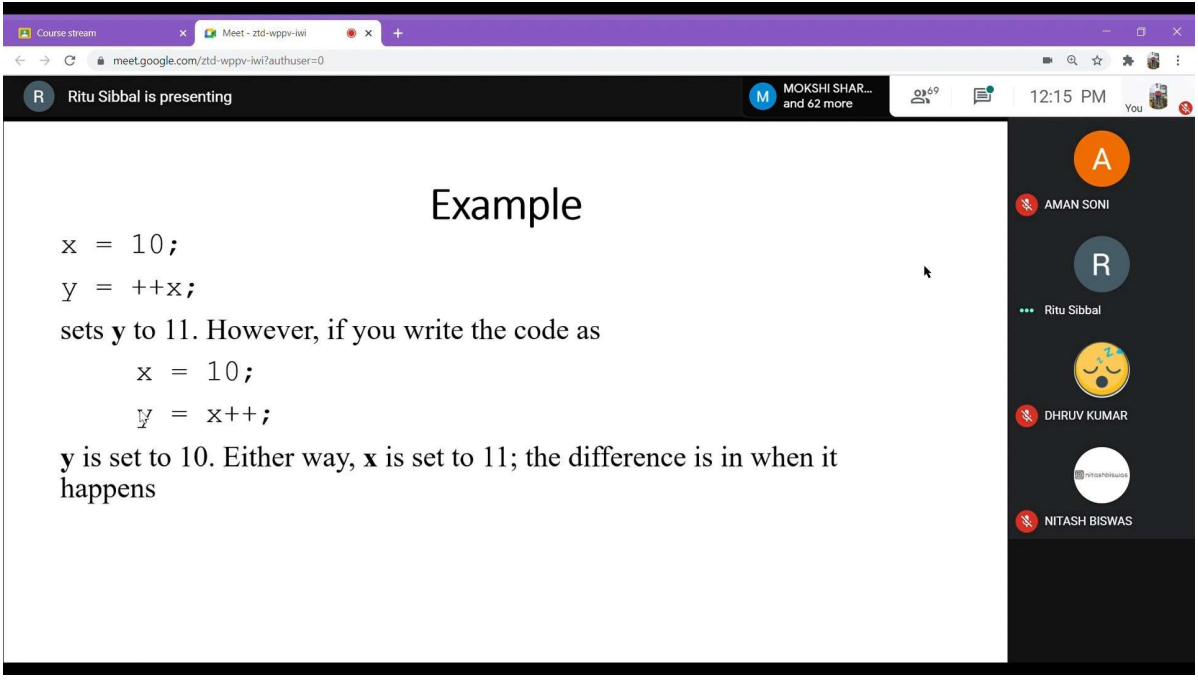
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You
Example
x = 10;
y = ++x;
sets y to 11. However, if you write the code as
x = 10;
y = x++;
y is set to 10. Either way, x is set to 11; the difference is in when it happens
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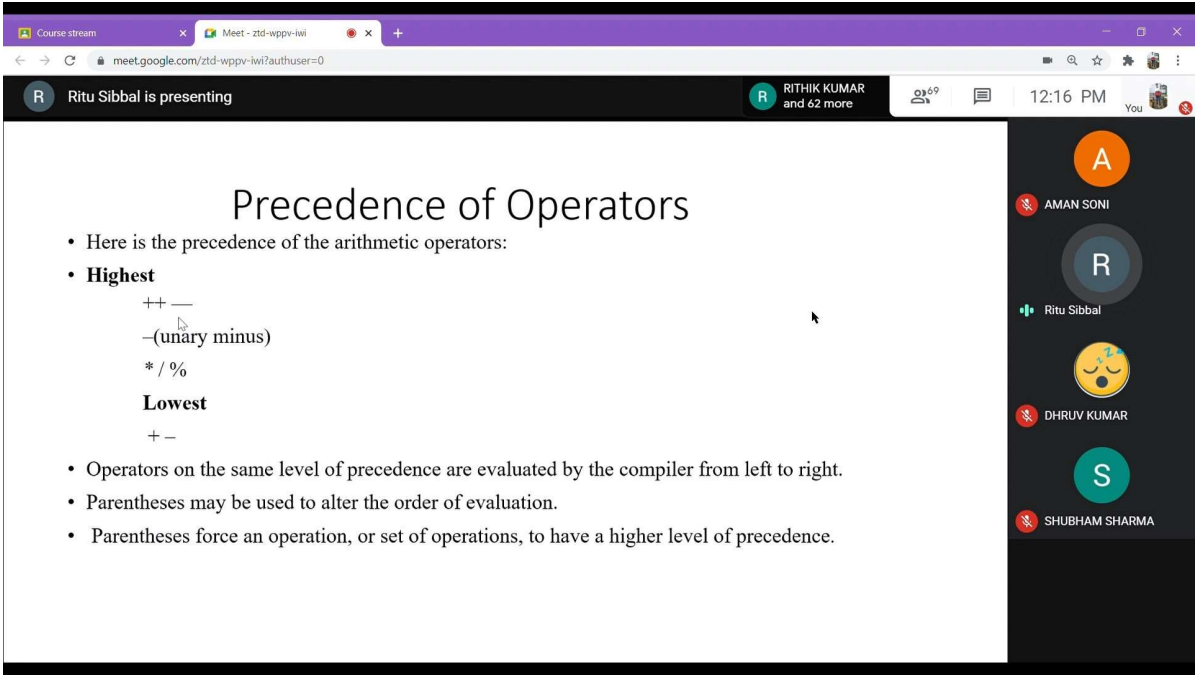
DHRUV KUMAR
NITASH BISWAS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RITHIK KUMAR and 62 more
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You
Precedence of Operators
• Here is the precedence of the arithmetic operators:
• Highest
++ —
–(unary minus)
* / %
Lowest
+ –
• Operators on the same level of precedence are evaluated by the compiler from left to right.
• Parentheses may be used to alter the order of evaluation.
• Parentheses force an operation, or set of operations, to have a higher level of precedence.
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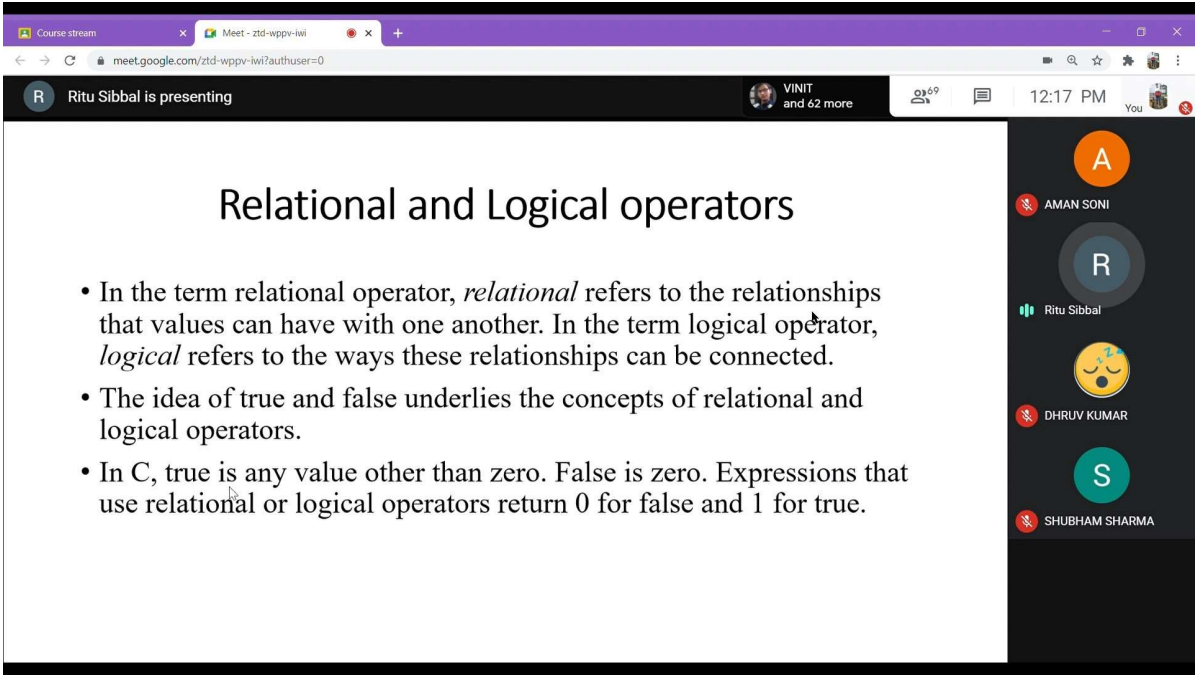
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You
Relational and Logical operators
• In the term relational operator, relational refers to the relationships that values can have with one another. In the term logical operator, logical refers to the ways these relationships can be connected.
• The idea of true and false underlies the concepts of relational and logical operators.
• In C, true is any value other than zero. False is zero. Expressions that use relational or logical operators return 0 for false and 1 for true.
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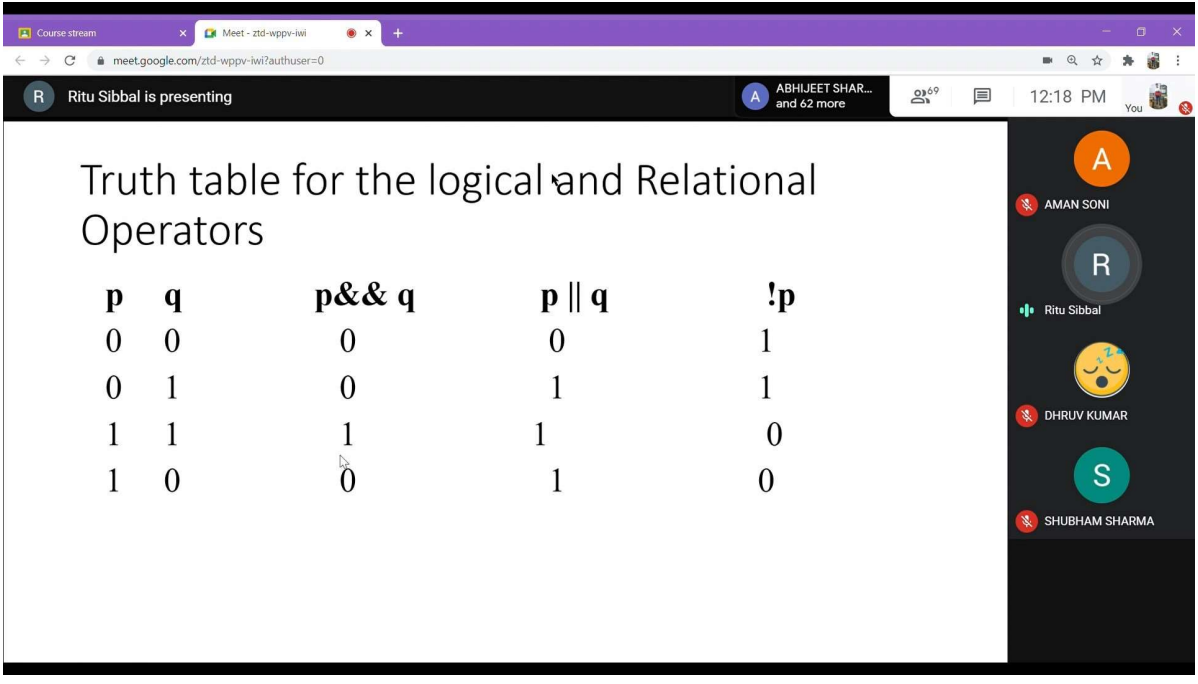
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You
Truth table for the logical and Relational Operators
p q p&& q p || q !p
0 0 0 0 1
0 1 0 1 1
1 1 1 1 0
1 0 0 1 0
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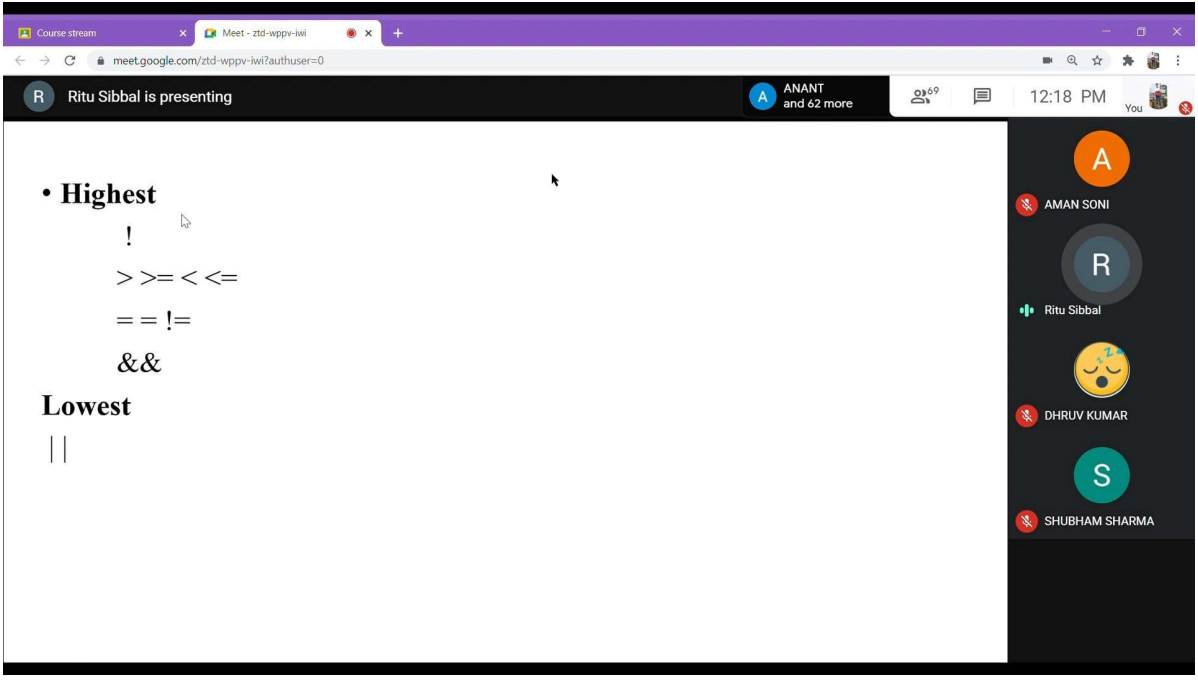
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You
• Highest
!
> >= < <=
= = !=
&&
Lowest
||
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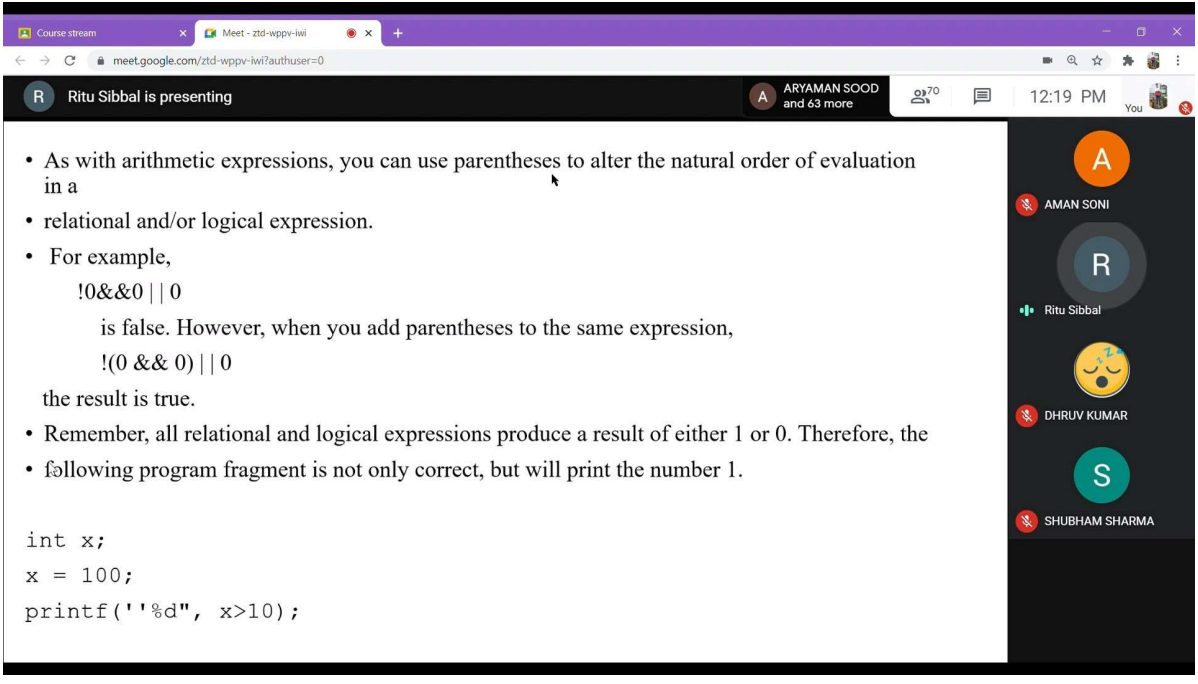
Ritu Sibbal
DHRUV KUMAR
SHUBHAM SHARMA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12:19 PM
You
As with arithmetic expressions, you can use parentheses to alter the natural order of evaluation in a
relational and/or logical expression.
For example,
!0&&0 | | 0
is false. However, when you add parentheses to the same expression,
!(0 && 0) | | 0
the result is true.
Remember, all relational and logical expressions produce a result of either 1 or 0. Therefore, the
following program fragment is not only correct, but will print the number 1.
int x;
x = 100;
printf(''%d", x>10);
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Ritu Sibbal
DHRUV KUMAR
SHUBHAM SHARMA