



# Session 2

Organization : TeachToTech

Instructor : Ayush Raj

Duration : 1.5 hr

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# Interactive Coding: scanf()

## What is scanf()?

The opposite of printf—it reads data from the keyboard and stores it in variables.

## The Golden Rule

Never forget the & (ampersand). It tells the computer the address of where to store the data.

## Syntax

```
scanf("formatSpecifier", &variableName);
```

## Example

```
int age;  
printf("Enter age: ");  
scanf("%d", &age);
```

- Think of & as the GPS location of the variable in memory. In Session 1, we hard-coded values like age = 20. Today, we make the user type it.

# Arithmetic Operators

## Basic Math

- + (Add)
- - (Subtract)
- \* (Multiply)
- / (Divide)

## Modulo (%)

Gives the remainder after division.

**Example:**  $10 \% 3 = 1$

**Use Case:** Check if number is even or odd ( $\text{num} \% 2$ )

## Assignment Operators

= (Assigns value)

$+=$  (Add and assign)

**Example:**  $a += 5$  is same as  $a = a + 5$

Arithmetic

Relational

Logical

Bitwise

Increment

Decrement

Assignment

## Calculator

# Activity 1: Simple Calculator

**Goal:** Create a program that takes two numbers and performs addition, subtraction, multiplication, and division.

```
i int main () {  
    int a, b;  
    printf("Enter two numbers: ");  
    scanf("%d %d", &a, &b);  
    printf("Sum: %d\n", a + b);  
    printf("Product: %d\n", a * b);  
    return 0;  
}
```



# Relational & Logical Operators

>

Relational (Comparison)

> (Greater), < (Less), ==  
(Equal), != (Not Equal)

**Result:** Returns 1 (True) or 0  
(False)



Logical (Connecting Logic)

- && (AND): Both must be true
- || (OR): At least one must be true
- ! (NOT): Reverses the result

?

Ternary Operator (? :)

A one-line if-else statement.

**Syntax:** (Condition) ?  
TruePart : FalsePart;

# Bitwise Operators: The Heavy Lifters

## Why Use Them?

They work directly on binary bits (0s and 1s). Fast and used in competitive programming.

## BITWISE OPERATORS

C programming  
language



& (AND)

Both bits must be 1



| (OR)

At least one bit is 1



^ (XOR)

Bits must be different



<< (Left Shift)

Multiplies by 2



>> (Right Shift)

Divides by 2

# Problem Solving : Digit Logic

## Subtract the Product and Sum of Digits

01

### Get Last Digit

Use % 10 to extract the last digit

02

### Remove Last Digit

Use / 10 to remove the last digit

03

### Repeat Until Zero

Continue until the number becomes 0

Example:  $n = 234$

Product =  $2 \times 3 \times 4 = 24$

Sum =  $2 + 3 + 4 = 9$

Result =  $24 - 9 = 15$

# Leetcode problem QR



Problem 1

[Sum of Two Integers -  
LeetCode](#)



Problem 2

[Subtract the Product and  
Sum of Digits of an Integer  
- LeetCode](#)



Problem 3

[Number of 1 Bits -  
LeetCode](#)



Problem 4

[Divide Two Integers -  
LeetCode](#)



# THANK YOU!

## Homework Assignment



### Divide Two Integers by 2

Solve without using / operators. Hint: Use bit shifting.



### Bit Magic

Check number is even or odd.

Practice these problems to master operators and bit manipulation. See you in the next session!