Programming

Fundamentals

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SECTION 1:

TERNARY OPERATOR

Ternary Operator

- The ternary operator is a shorthand way of writing an if-else statement in C.
- It takes three operands (hence the name ternary):

condition ? expression_if_true : expression_if_false;

- Meaning:
  - **If condition is true, it executes expression_if_true.**
  - **If condition is false, it executes expression_if_false.**

- It is often called a **conditional operator.**

Syntax

```
if (age >= 18)
    printf("Adult");
else
    printf("Minor");
```

```
(age >= 18) ? printf("Adult") : printf("Minor");
```

Ternary Operator

```
condition1 ? expression1
        : condition2 ? expression2
                : condition3 ? expression3
                        : default_expression;
```

Example:

```
int x = 15;

(x > 20) ? "Greater than 20"
         : (x > 10) ? "Between 11 and 20"
         : (x > 5)  ? "Between 6 and 10"
                    : "5 or less";
```

QUICK PRACTICE:

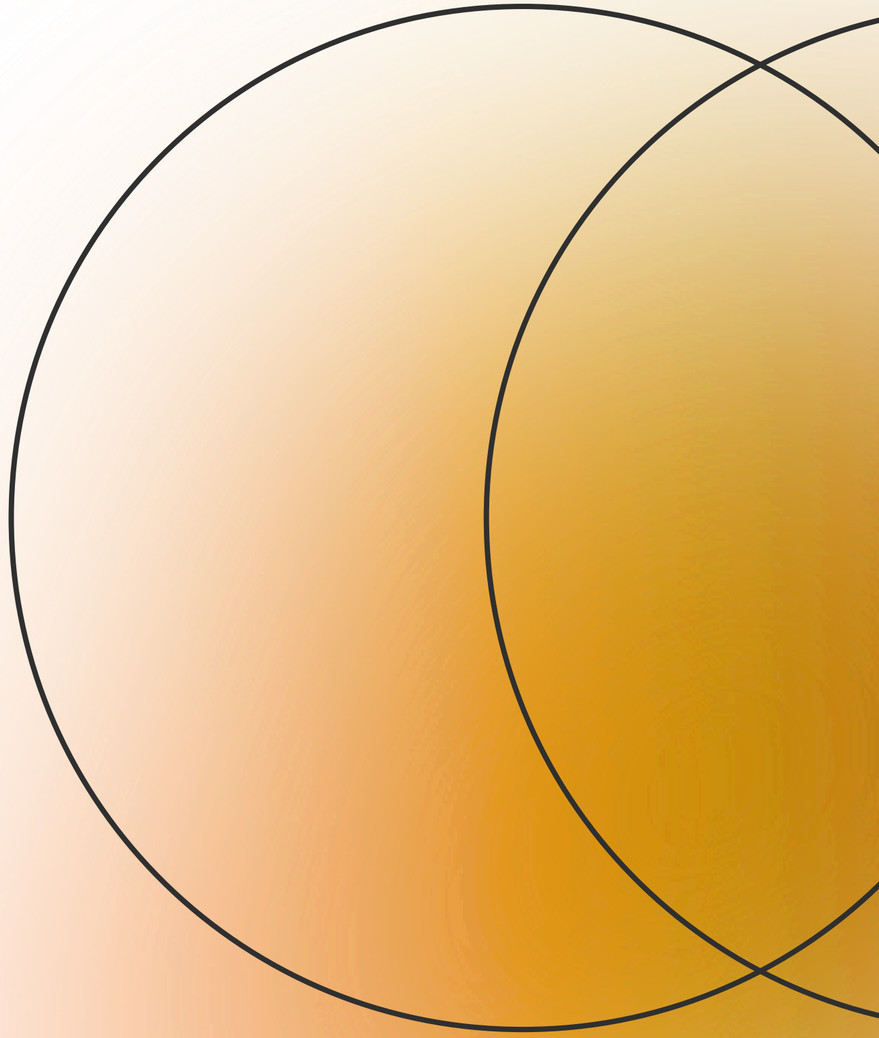
Example 1: Positive or Negative

Example 2: Find Maximum of Two Numbers

Example 3: Max of three numbers

SECTION 2:

NESTED IF-ELSE QUESTIONS



Interactive Challenge 1: BLOOD DONATION ELIGIBILITY

Problem:

Write a program to check if a person is eligible to donate blood.

- **Age must be ≥ 18**
  - **If weight ≥ 50 → Eligible**
  - **Else → Not eligible (underweight)**
- **Else → Not eligible (too young)**

Interactive Challenge 3: SCHOLARSHIP ELIGIBILITY

Write a C program that determines whether a student is eligible for a scholarship.

The eligibility depends on three conditions:

1. **The student must have at least 60 marks.**
2. **The student must have at least 75% attendance.**
3. **The student must have participated in extra-curricular activities (1 = Yes, 0 = No).**

Interactive Challenge 4: Game Score Tracker

- Player’s score starts at 0.
- If the player wins a round, their score should increase by 1.
- If the player loses a round, their score should decrease by 1.
- The program should take the round result as input (W for win, L for loss) and then display the updated score.
- If the input is anything other than W or L, the program should print “Invalid input”.

Interactive Challenge 2:VOWEL OR CONSONANT

Write a C program that takes a single character as input and determines whether it is a vowel, a consonant, or not an alphabet at all.

- **If the entered character is an alphabet, the program should check further:**
  - **If it is a vowel (a, e, i, o, u, A, E, I, O, U) → print “Vowel”.**
  - **Otherwise → print “Consonant”.**
- **If the entered character is not an alphabet, the program should print “Not an alphabet”.**

Thank You