

TypeScript Beginner Problem Solving – 30 Practice Questions

These problems are designed for beginner-level developers to improve logical thinking and TypeScript fundamentals. Each problem should be solved using proper type annotations, functions, and clean code practices. Avoid using the 'any' type.

1. Variables & Basic Logic

1. Write a program that takes a number as input and determines whether the number is even or odd. The program should return a boolean or a clear string message.
2. Write a function that accepts a number and checks whether it is positive, negative, or zero.
3. Create a function that takes two numbers as input and returns the larger number.
4. Write a function that converts temperature from Celsius to Fahrenheit. Use the formula: $(C \times 9/5) + 32$.
5. Write a program that calculates simple interest given principal, rate of interest, and time.

2. Conditional Statements

6. Write a program that takes a student's marks (0–100) and returns the grade based on standard grading rules.
7. Create a function that checks whether a given year is a leap year or not.
8. Write a program that takes age as input and determines whether the person is eligible to vote.
9. Write a function that checks if a number is divisible by both 3 and 5.
10. Given three angle values, write a program to determine if they can form a valid triangle.

3. Loops

11. Write a program that prints all numbers from 1 to N using a loop.
12. Create a function that calculates the sum of natural numbers from 1 to N.
13. Write a program that prints the multiplication table of a given number up to 10.
14. Write a function to calculate the factorial of a number using a loop.
15. Create a program that counts how many digits exist in a given number.

4. Arrays

16. Write a function that takes an array of numbers and returns the sum of all elements.

17. Create a function that finds and returns the maximum value from an array.
18. Write a program that counts how many even numbers are present in an array.
19. Write a function to reverse an array without using built-in reverse methods.
20. Create a function that returns the index of a given element in an array, or -1 if not found.

5. Strings

21. Write a function that counts the number of vowels in a given string.
22. Create a program that reverses a string without using built-in methods.
23. Write a function that checks whether a given string is a palindrome.
24. Create a function that counts the frequency of each character in a string.
25. Write a program that counts the total number of words in a sentence.

6. Functions & Practical Logic

26. Create a reusable calculator function that accepts two numbers and an operator (+, -, *, /).
27. Write a function that returns the minimum number from an array.
28. Create a function that returns a new array containing only unique elements.
29. Write a simple login validation function that checks username and password against stored values.
30. Create a shopping cart function that calculates the total price and applies a 10% discount if total exceeds 1000.