Introduction to C++

Problem 1: Awesh's Number Formatting

Context:

Awesh is developing a financial application that requires displaying monetary values with exactly two decimal places. He also wants to ensure that all numbers are aligned to the right for better readability.

Problem Statement:

Write a program that takes three floating-point numbers as input representing monetary values. The program should then print these values, each formatted with exactly two decimal places and aligned to the right.

Input:

Three floating-point numbers.

Output:

The three numbers displayed with two decimal places, each on a new line and right-aligned.

Test Cases:

Case	Input	Output
1	1234.567, 45.789, 7.2	1234.57 45.79 7.20
2	0.12, 5, 12345.678	0.12 5.00 12345.68
3	100, 0.999, 1.5	100.00 0.99 1.50
4	9.99, 0.01, 100000	9.99 0.01 100000.00

Problem 2: Awesh's Greeting Formatter

Context:

Awesh is working on a program that generates greeting messages. He wants the greeting to be centred within a fixed-width line of 40 characters. If the greeting is shorter than 40 characters, it should be padded with asterisks (*) on both sides to centre it.

Problem Statement:

Write a program that takes a string as input and prints it centred within a 40-character wide line, padded with * on both sides.

Input:

A string containing the greeting.

Output:

The greeting centred within a 40-character wide line, padded with *.

Test Cases:

Case	Input	Output
1	"Hello, Awesh!"	"**********Hello, Awesh!**********"
2	"Welcome, Awesh!"	"****Welcome, Awesh!****"
3	"Good Morning"	"************Good Morning************"
4	"Hi"	"******************Hi******************"

Problem 3: Awesh's Inventory Report

Context:

Awesh is creating an inventory report for his shop. He needs to display the names and quantities of items in a tabular format. The names should be left-aligned and the quantities right-aligned.

Problem Statement:

Write a program that takes three item names and their respective quantities. The program should then print a formatted table where the item names are left-aligned, and the quantities are right-aligned.

Input:

Three strings representing item names and three integers representing item quantities.

Output:

A table displaying the items and their quantities, with names left-aligned and quantities right-aligned.Test Cases:

Case	Input	Output
1	"Laptop", 50, "Mouse", 120, "Keyboard", 30	Laptop | 50 Mouse | 120 Keyboard | 30
2	"Monitor", 25, "Hard Drive", 150, "Webcam", 10	Monitor | 25 Hard Drive | 150 Webcam | 10
3	"Smartphone", 100, "Charger", 75, "Headphones", 200	Smartphone | 100 Charger | 75 Headphones | 200
4	"Tablet", 5, "Stylus", 15, "Case", 8	Tablet | 5 Stylus | 15 Case | 8

Problem 4: Awesh's Student Grade Formatter

Context:

Awesh is tasked with creating a report that shows students' names and their grades. He needs to ensure that all grades are displayed with one decimal place and the names are aligned in a way that the report looks neat.

Problem Statement:

Write a program that takes the names of three students and their grades (as floating-point numbers). The program should print a formatted report where the names are left-aligned and the grades are right-aligned, showing exactly one decimal place.

Input:

Three strings representing student names and three floating-point numbers representing their grades.

Output:

A formatted report displaying student names and grades, with names left-aligned and grades right-aligned.

Test Cases:

Case	Input	Output
1	"Alice", 89.567, "Bob", 91.3, "Charlie", 85.75	Alice | 89.6 Bob | 91.3 Charlie | 85.8
2	"David", 95.456, "Emma", 78.5, "Frank", 88.99	David | 95.5 Emma | 78.5 Frank | 89.0
3	"George", 82.123, "Helen", 74.7, "Ian", 92.456	George | 82.1 Helen | 74.7 Ian | 92.5
4	"Jack", 66.99, "Kate", 88.888, "Leo", 79.1	Jack | 67.0 Kate | 88.9 Leo | 79.1