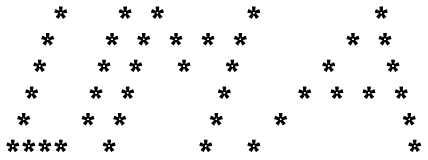
01 - Programming Exercises
Selection Structures

Program each of the following tasks in your C++ compiler. Keep compiling and executing even after writing a single line of code.

Task 1

Write a program that prints your name initials to standard output in letters that are nine lines tall. Each big letter should be made up of a bunch of '*'s. For example, if your initials were "UMA", then the output would look something like:



Task 2

Write a program that asks the user to enter two numbers. The program should use the conditional operator to determine which number is smaller and which is larger, then display them in ascending order.

Task 3

Write a program that prompts the user to enter a number within the range of 1 through 10. Use a switch statement to display the Roman numeral version of that number. Do not accept a number less than 1 or greater than 10.

Task 4

The area of a rectangle is the rectangle's length times its width. Write a program that prompts the user for the length and width of two rectangles. The program should inform the user which rectangle has the greater area or if the areas are the same.

Task 5

Write a program that prompts the user to enter a duration in seconds.

- There are 60 seconds in a minute. If the entered seconds are greater than or equal to 60, display the corresponding number of minutes.
- There are 3,600 seconds in an hour. If the entered seconds are greater than or equal to 3,600, display the corresponding number of hours.
- There are 86,400 seconds in a day. If the entered seconds are greater than or equal to 86,400, display the corresponding number of days.

Task 6

The following table shows the approximate speed of sound in air, water, and steel.

Medium	Speed
Air	1,100 feet per second
Water	4,900 feet per second
Steel	16,400 feet per second

Write a program that displays a menu allowing the user to select:

1. Air
2. Water
3. Steel

Display a message "Wrong choice" otherwise. After the user has selected, ask them to enter the distance a sound wave will travel in the selected medium. The program will then display the amount of time it will take, rounding the answer to four decimal places.

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