

Assignment 1 brief report

Circle area and circumference: This program calculates the sum of the areas and circumferences of circles with radii starting from the first radius up to and including the last radius using the user's input for the first and last radii. The algorithm is straightforward for loop. The radius variable is initialised to the first radius, and iterations are performed up to and including the last radius. It calculates the circle's area and circumference for each radius and then updates the total of the two. The sum of the areas and circumferences is then printed, with three decimal places.

Count characters in a string: This program counts the amount of characters, numerals, spaces, and other characters in a string that has been input by the user. The algorithm is a straightforward while loop that loops through each character in the input string until it reaches a new line or the end of the file. The program changes the relevant variable for each character and determines if it is an alphabet, digit, space, or other characters. The count of each variable is then printed by the program.

A+B For Large Integers, Use A+B This program sums the two positive integers that the user enters. The employed approach is a straightforward while loop that, beginning with the rightmost digit, adds the corresponding digits of the two input integers and records the result in a character array. In order to handle the situation where the sum of two numbers is more than or equal to 10, it also employs a carry variable. After calculating the total of all digits, it flips the character array and outputs the outcome.

Precise division: The user must enter the numerator, denominator, and precision as three integers. Following that, it divides the numerator by the denominator to the specified precision. The long-division approach is the foundation of the algorithm. By initially dividing numerator by denominator, the quotient is determined. After that, it computes the division's residual and puts it in an array. Once the required precision is attained, this process of dividing the residual by the denominator is repeated. The program then outputs the remainder with the required accuracy and the quotient with a decimal point.

ASCII code: This program prints a right-angled triangle pattern using asterisks after receiving an integer from the user. A straightforward nested loop is the algorithm utilised. Each row of the triangle is iterated through by the outer loop, while each row's column is iterated through by the inner loop. Up until the current row number equals the current column number, the program produces an asterisk for each column.

The C programming language textbook, lecture notes, and internet C programming resources were employed as resources to resolve these issues.