Module Code: FC723

Group: B

Module Title: Programming Theory

Assessment Title: Portfolio Project 1

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I confirm that this assignment is my own work.

Where I have referred to academic sources, I have provided in-text

citations and included the sources in the final reference list.

**The pseudocode for the Euclidean Algorithm:**

**Pseudocode for Greatest Common Divisor:**

Function GCD (a, b):

Input a, b

While b is not equal to 0:

Temp = b

b = a % b

a = temp

end while   
return a

end function

**Explanation:**

The function takes two positive inputs a and b as integers.

The while loop runs if it meets the right condition; here, b cannot equal zero.

a % b calculates the remainder when a is divided by b.

swap the values of a and b so the calculation continues with the new values.

When b = 0, the loop stops and the current value of a is the GCD.

The function returns the GCD

**Pseudocode for Least Common Multiple:**

Function LCM (a, b)

gcd = GCD(a, b)

return abs(a \* b) / gcd

end function

**Explanation:**

The LCM is the smallest number divisible by both a and b.

it calls the GCD function to use the Euclidean Algorithm to find the GCD of a and b.

it calculates the LCM by multiplying a and b and dividing the result by the GCD to find the smallest common multiple.

Then it returns the LCM.