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ENSE 350 Lab 1 Report

Part 1) build a recursive Euclidean algorithm that computes the gcd of two numbers

This algorithm works by taking two parameters a and b. These are the two numbers for the gcd. The algorithm works by calling itself recursively until it finds the gcd of both a and b. This means that b is equal to 0 and a is equal to the gcd.

Part 2) build a pulverizer algorithm that solves for the values s and t in gcd(a, b) = sa + tb

This algorithm works by taking four parameters. It takes a and b which are the two numbers for the gcd and s and t for the values of the linear combination to be solved. The algorithm calls itself recursively until it finds the gcd of both a and b. This means that b is equal to 0 and a is equal to the gcd. Then as it unwinds it solves for both s and t.

Part 3) build an algorithm that takes a fraction and outputs it in lowest terms

This algorithm works by taking both a numerator and denominator. It then divides both of them by the gcd calculated in part 1. The result is both the numerator and denominator in their lowest terms.