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**BSCS 2-B**

**1. Write a program using Java programming language to implement Euclid’s Algorithm and Consecutive Integer Checking Algorithm. Use the java console to make it simple.**

**2. Test your programs using: gcd(60, 24) and gcd(31415, 14142).**

public class GCD {  
  
 static void euclidGCD(int m, int n)  
 {  
 while(n != 0) {  
 int r = m%n; //remainder  
 m = n;  
 n = r;  
 }  
 System.*out*.println("The GCD is: " + m);  
 }  
  
 static void consecutiveIntegerCheckingGCD(int m, int n)  
 {  
 int t = 0; // minimum  
 if (m==0 || n==0) {  
 System.*out*.println("0 output");  
 }  
 if(m < n) {  
 t = m;  
 }else{  
 t = n;}  
 while(t > 0)  
 {  
 if(m%t == 0 && n%t == 0) {  
 break;  
 } else {  
 --t;  
 }  
 }  
 System.*out*.println("The GCD is: " + t);  
 }  
  
 public static void main(String[] args){  
  
 System.*out*.println("\n>>>Euclid's GCD Algorithm<<<");  
 *euclidGCD*(60,24);  
 *euclidGCD*(31415,14142);  
 System.*out*.println("\n>>>Consecutive Integer GCD Algorithm<<<");  
 *consecutiveIntegerCheckingGCD*(60,24);  
 *consecutiveIntegerCheckingGCD*(31415,14142);  
  
 }  
}

**3. Compare and contrast the given algorithms in terms of codes (i.e., number of arithmetic operations, number of assignments, number of loops iteration). Simulate each algorithm using the program you have implemented if necessary.**

They have their own similarities and differences, first their similarities are, I made a method each one of them that contains computations, and second I’ve use while loops for them so that the program will continue until it will reach to the condition of parameters and terminate (which will be the final GCD or answer).

The difference between the two methods are, the Euclid’s algorithm is short and easy to code, also it only contains looping (while loop), on the other hand the Consecutive Integer Algorithm has a lot of codes and process first you need to assign the minimum to variable t and you may now start the process by using first the IF ELSE statement to select the minimum number, and go for the while loop to put conditions on parameter.

So in conclusion the Consecutive Integer Algorithm has a lot of code and step process computation than Euclid’s Algorithm even in paper solving step process it has the more steps than the other.