public class HexToDecimalConverter {

// Method to convert a hexadecimal string to a decimal integer

public static int hexToDecimal(String hex) {

int decimalValue = 0;

int base = 1; // Initialize base value to 1, i.e., 16^0

// Process each character from right to left

for (int i = hex.length() - 1; i >= 0; i--) {

char hexChar = hex.charAt(i);

int hexDigit;

// Determine the decimal value of the current hex character

if (hexChar >= '0' && hexChar <= '9') {

hexDigit = hexChar - '0';

} else if (hexChar >= 'A' && hexChar <= 'F') {

hexDigit = hexChar - 'A' + 10;

} else if (hexChar >= 'a' && hexChar <= 'f') {

hexDigit = hexChar - 'a' + 10;

} else {

throw new IllegalArgumentException("Invalid hexadecimal character: " + hexChar);

}

// Update the decimal value

decimalValue += hexDigit \* base;

base \*= 16; // Increment the base by multiplying it by 16

}

return decimalValue;

}

public static void main(String[] args) {

// Example hexadecimal number

String hexNumber = "AB8C";

// Convert the hexadecimal number to decimal

int decimalNumber = hexToDecimal(hexNumber);

// Print the result

System.out.println("Hexadecimal number: " + hexNumber);

System.out.println("Decimal number: " + decimalNumber);

}

}

import java.util.Scanner;

public class GCDProgram {

// Method to compute the GCD of two numbers using the Euclidean algorithm

public static int gcd(int a, int b) {

while (b != 0) {

int temp = b;

b = a % b;

a = temp;

}

return a;

}

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

// Prompt the user to enter the first integer

System.out.print("Enter first integer: ");

int num1 = scanner.nextInt();

// Prompt the user to enter the second integer

System.out.print("Enter second integer: ");

int num2 = scanner.nextInt();

// Calculate the GCD of the two integers

int result = gcd(num1, num2);

// Display the result

System.out.println("The greatest common divisor for " + num1 + " and " + num2 + " is " + result);

// Close the scanner

scanner.close();

}

}