Code : 1  
package Topic\_03\_NumberSystem;

import java.util.\*;

public class A\_DigitFrequency {

public static void main(String[] args) {

Scanner scn = new Scanner(System.in);

int n = scn.nextInt();

int d = scn.nextInt();

int freq = getDigitFrequency(n, d);

System.out.println(freq);

}

public static int getDigitFrequency(int n, int digit) {

// write code here

int c = 0;

while (n > 0) {

int rem = n % 10;

if (rem == digit)

c++;

n = n / 10;

}

return c;

}

}

Code : 2  
package Topic\_03\_NumberSystem;

import java.util.Scanner;

public class B\_DecimalToAnyBase {

public static void main(String[] args) {

Scanner scn = new Scanner(System.in);

int n = scn.nextInt();

int b = scn.nextInt();

int dn = getDecimalInBase(n, b);

System.out.println(dn);

}

private static int getDecimalInBase(int n, int b) {

// TODO Auto-generated method stub

int rv = 0;

int d = 0;

int p = 1;

while (n > 0) {

d = n % b;

n = n / b;

rv = rv + (d \* p);

p = p \* 10;

}

return rv;

}

}

Code : 3  
package Topic\_03\_NumberSystem;

import java.util.Scanner;

public class C\_AnyBaseToDecimal {

public static void main(String[] args) {

Scanner scn = new Scanner(System.in);

int n = scn.nextInt();

int b = scn.nextInt();

int dn = getBaseInDecimal(n, b);

System.out.println(dn);

}

private static int getBaseInDecimal(int n, int b) {

// TODO Auto-generated method stub

int rv = 0;

int p = 1;

while (n > 0) {

int rem = n % 10;

n = n / 10;

rv = rv + (rem \* p);

p = p \* b;

}

return rv;

}

}

Code : 4  
package Topic\_03\_NumberSystem;

import java.util.Scanner;

public class D\_AnyBaseToAnyBase {

public static void main(String[] args) {

Scanner scn = new Scanner(System.in);

int n = scn.nextInt();

int srcBase = scn.nextInt();

int destBase = scn.nextInt();

int rv = anyBaseToDecimal(n, srcBase);

rv = getDecimalToAnyBase(rv, destBase);

System.out.println(rv);

}

private static int getDecimalToAnyBase(int n, int b) {

// TODO Auto-generated method stub

int rv = 0;

int d = 0;

int p = 1;

while (n > 0) {

d = n % b;

n = n / b;

rv = rv + (d \* p);

p = p \* 10;

}

return rv;

}

private static int anyBaseToDecimal(int n, int b) {

// TODO Auto-generated method stub

int rv = 0;

int p = 1;

while (n > 0) {

int rem = n % 10;

n = n / 10;

rv = rv + (rem \* p);

p = p \* b;

}

return rv;

}

}

Code : 5  
package Topic\_03\_NumberSystem;

import java.util.\*;

public class E\_AnyBaseAddition {

public static void main(String[] args) {

Scanner s = new Scanner(System.in);

int b = s.nextInt();

int n1 = s.nextInt();

int n2 = s.nextInt();

System.out.println(getAnyBaseAddition(b, n1, n2));

}

public static int getAnyBaseAddition(int b, int n1, int n2) {

int rv = 0;

int c = 0;

int p = 1;

while (n1 > 0 || n2 > 0) {

int d1 = n1 % 10;

int d2 = n2 % 10;

int add = d1 + d2 + c;

if (add >= b) {

c = 1;

add = add % b;

rv = rv + (add \* p);

} else {

c = 0;

rv = rv + (add \* p);

}

n1 = n1 / 10;

n2 = n2 / 10;

p = p \* 10;

}

if (c == 1)

rv = rv + (c \* p);

return rv;

}

}

Code : 6  
package Topic\_03\_NumberSystem;

import java.util.\*;

public class F\_AnyBaseSubtraction {

public static void main(String[] args) {

Scanner scn = new Scanner(System.in);

int b = scn.nextInt();

int n1 = scn.nextInt();

int n2 = scn.nextInt();

int d = getDifference(b, n1, n2);

System.out.println(d);

}

public static int getDifference(int b, int n1, int n2) {

int rv = 0;

int borrow = 0;

int p = 1;

while (n2 > 0) {

int d2 = n2 % 10;

int d1 = n1 % 10;

d2 = d2 - borrow;

int d = d2 - d1;

if (d < 0) {

borrow = 1;

d = d + b;

} else {

borrow = 0;

d = d + 0;

}

rv = rv + d \* p;

p = p \* 10;

n1=n1/10;

n2=n2/10;

}

return rv;

}

}

Code : 7  
package Topic\_03\_NumberSystem;

import java.util.\*;

public class G\_AnyBaseMultiplication {

public static void main(String[] args) {

Scanner scn = new Scanner(System.in);

int b = scn.nextInt();

int n1 = scn.nextInt();

int n2 = scn.nextInt();

int d = getProduct(b, n1, n2);

System.out.println(d);

}

public static int getProduct(int b, int n1, int n2) {

int rv = 0, p = 1;

while (n2 > 0) {

int d = n2 % 10;

int temp = getProducts(b, n1, d);

temp = temp \* p;

rv = getAnyBaseAddition(b, rv, temp);

n2 = n2 / 10;

p = p \* 10;

}

return rv;

}

public static int getProducts(int b, int n1, int d2) {

int rv = 0, p = 1, d = 0, c = 0;

while (n1 > 0 || c > 0) {

int d1 = n1 % 10;

d = d1 \* d2 + c;

if (d >= b) {

c = d / b;

d = d % b;

} else {

c = 0;

d = d;

}

rv = rv + d \* p;

n1 = n1 / 10;

p = p \* 10;

}

return rv;

}

public static int getAnyBaseAddition(int b, int n1, int n2) {

int rv = 0;

int c = 0;

int p = 1;

while (n1 > 0 || n2 > 0) {

int d1 = n1 % 10;

int d2 = n2 % 10;

int add = d1 + d2 + c;

if (add >= b) {

c = 1;

add = add % b;

rv = rv + (add \* p);

} else {

c = 0;

rv = rv + (add \* p);

}

n1 = n1 / 10;

n2 = n2 / 10;

p = p \* 10;

}

if (c == 1)

rv = rv + (c \* p);

return rv;

}

}