Coding:

class GFG {

private static long power(long a, long b, long p) {

if (b == 1)

return a;

else

return (((long) Math.pow(a, b)) % p);

}

public static void main(String[] args) {

long P, G, x, a, y, b, ka, kb;

P = 23;

System.out.println("The value of P:" + P);

G = 9;

System.out.println("The value of G:" + G);

a = 4;

System.out.println("The private key a for Alice:" + a);

x = power(G, a, P);

b = 3;

System.out.println("The private key b for Bob:" + b);

y = power(G, b, P);

ka = power(y, a, P);

kb = power(x, b, P);

System.out.println("Secret key for the Alice is:" + ka);

System.out.println("Secret key for the Bob is:" + kb);

}

}

Output:

