- **Program Code:**

```
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); // Secret key for Alice

kb = power(x, b, P); // Secret key for Bob

System.out.println();

System.out.println("BCOB131 Pratik Bangal");

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

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

}

}

- **Output:**

Output	Clear

```
java -cp /tmp/8T8rJKyKv5 GFG
The value of P:23
The value of G:9
The private key a for Alice:4
The private key b for Bob:3

BCOB131 Pratik Bangal
Secret key for the Alice is:9
Secret key for the Bob is:9
```