Code:

***class*** *Diffie-Hellman{*

***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("Secret key for the Alice is:" + ka);*

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

*}*

*}*

Output:

The value of P : 23

The value of G : 9

The private key a for Alice : 4

The private key b for Bob : 3

Secret key for the Alice is : 9

Secret Key for the Bob is : 9