



main.c



Output

Clear

```
1  #include <stdio.h>
2
3  // Modular exponentiation (base^exp) % mod
4  unsigned long long modexp(unsigned long long
    base, unsigned long long exp, unsigned long
    long mod) {
5      unsigned long long result = 1;
6      base %= mod;
7
8      while (exp > 0) {
9          if (exp % 2 == 1)
10             result = (result * base) % mod;
11             exp >>= 1;
12             base = (base * base) % mod;
13     }
14
15     return result;
16 }
```

main.c

Run

Output

Clear

```
31 // Shared keys
32 unsigned long long keyAlice = modexp(yB, xA,
    q);
33 unsigned long long keyBob = modexp(yA, xB,
    q);
34
35 printf("Public parameters: q = %llu, a =
    %llu\n", q, a);
36 printf("Alice sends: %llu\n", yA);
37 printf("Bob sends: %llu\n", yB);
38 printf("Shared key (Alice): %llu\n",
    keyAlice);
39 printf("Shared key (Bob): %llu\n", keyBob
    );
40
41 return 0;
42 }
43
```

Public parameters: q = 23, a = 5
Alice sends: 8
Bob sends: 19
Shared key (Alice): 2
Shared key (Bob): 2

=== Code Execution Successful ===