Experiment 6

Implementation Of Diffie Hellman Key exchange algorithm.

**Code-**

#include <bits/stdc++.h>

using namespace std;

#define ll long long int

ll power(ll a, ll b,ll P)

{

if (b == 1)

return a;

else

return (((ll)pow(a, b)) % P);

}

int main()

{

cout<<"Implementation of Diffie-Hellman Algorithm\n";

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

cout<<"Enter value of P\n";

cin>>P;

cout << "The value of P : " << P << endl;

cout<<"Enter value of G\n";

cin>>G;

cout << "The value of G : " << G << endl;

cout<<"Enter private key for alice\n";

cin>>a;

cout << "The private key a for Alice : " << a << endl;

x = power(G, a, P);

cout<<"Enter private key for b\n";

cin>>b;

cout << "The private key b for Bob : " << b << endl;

y = power(G, b, P);

ka = power(y, a, P);

kb = power(x, b, P);

cout << "Secret key for the Alice is : " << ka << endl;

cout << "Secret key for the Bob is : " << kb << endl;

return 0;

}

**Output-**

