**IMPLEMENTATION OF DIFFIE HELLMAN KEY EXCHANGE ALGORITHM**

**AIM:** To implement the Diffie-Hellman Key Exchange algorithm using C language.

**SOURCE CODE:**

#include<stdio.h>

#include<conio.h>

long long int power(int a, int b, int mod)

{

long long int t;

if(b==1)

return a;

t=power(a,b/2,mod);

if(b%2==0)

return (t\*t)%mod;

else

return (((t\*t)%mod)\*a)%mod;

}

long int calculateKey(int a, int x, int n)

{

return power(a,x,n);

}

void main()

{

int n,g,x,a,y,b;

//clrscr();

printf("Enter the value of n and g : ");

scanf("%d%d",&n,&g);

printf("Enter the value of x for the first person : ");

scanf("%d",&x);

a=power(g,x,n);

printf("Enter the value of y for the second person : ");

scanf("%d",&y);

b=power(g,y,n);

printf("key for the first person is : %lld\n",power(b,x,n));

printf("key for the second person is : %lld\n",power(a,y,n));

getch();

}

**OUTPUT:**

